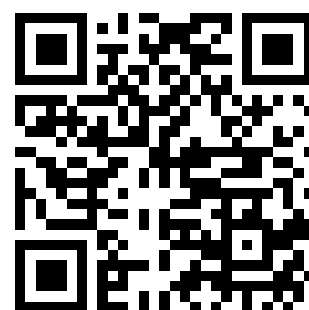


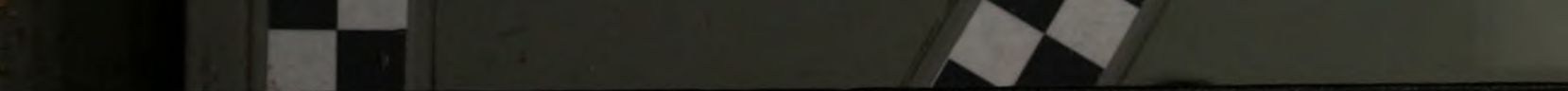
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THE  
ARCHITECT.

VOL. I.



LONDON: PRINTED BY  
SPOTTISWOODE AND CO., NEW-STREET SQUARE  
AND PARLIAMENT STREET

THE  
ARCHITECT.

A WEEKLY

ILLUSTRATED JOURNAL

OF

ART,

CIVIL ENGINEERING,

AND

BUILDING.

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"DEVISE, WIT ; WRITE, PEN ; FOR I AM FOR WHOLE VOLUMES IN FOLIO."—*Shakespeare*.

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VOL. I.

JANUARY TO JUNE, 1869.

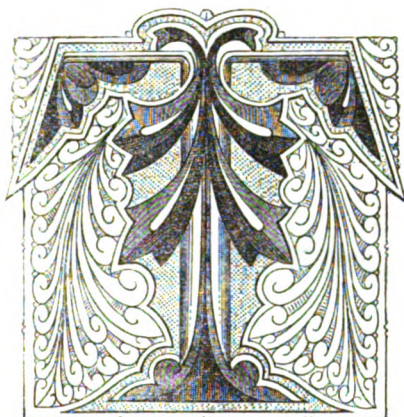
LONDON :

PUBLISHED AT 175 STRAND, LONDON, W.C.

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THE ARCHITECT is intended to be a professional, artistic, and technical journal of the first class. Its pages will be open to all subjects connected with the art, the science, or the business of Building, taken in the widest sense. The Professional Architect and the Civil Engineer, the Builder, the Art Workman, and the Mechanic, will each find THE ARCHITECT

treating upon subjects which are of importance to himself. The examples which such persons require as objects of study, the opinions they desire to know, and the news which it will be their pleasure or their business to learn, will be supplied, so far as any journal can possibly do so, week by week, in the columns and by the illustrations of THE ARCHITECT. Nor will the general public be forgotten. The public at large is directly concerned in a thousand ways in matters relating to Architecture, Engineering, and Building. The interest in such subjects is happily on the increase; and it will be our endeavour so to conduct this journal that the general reader, as well as any of those to whom its title more directly appeals, shall find it attractive and agreeable, as well as instructive, and thus take part in that popularizing of a knowledge of the fine arts, and especially of Architecture, which is one of the great movements of the day. THE ARCHITECT aspires to take a first place among those journals which are quoted as authorities in the various branches of Science, Art, Literature, or Business; and those conducting it will spare no pains to secure the services of the most skilled writers, to illustrate the works of the best Architects and Engineers, and to supply the latest and the most authentic intelligence.

The practice of Architecture in the present day—alike at home and abroad—will probably claim a larger share of our space, and receive more constant attention, than any other topic; and here it is our firm determination to be the organ of no clique or party, and to refrain from all that can be termed personal in an offensive sense. We will fearlessly and as far as possible impartially state, and where necessarily criticise, the views of all parties, both as to artistic matters

and points of professional practice. One duty of the public press, not always the pleasantest, yet probably almost the most important of any, is to criticise. Good, honest, dignified, unprejudiced criticism is always of the highest public advantage when directed towards its legitimate subjects, and written in the proper tone; and when occasion calls for it, it is hoped that writing of this stamp will always be forthcoming in THE ARCHITECT.

It is intended that select examples of ancient works—English and foreign—shall occasionally appear among the illustrations of architectural and constructive subjects; and a critical examination of old examples, as well as of works in progress, will form a feature of the journal. The illustrations will be uniformly chosen with a view to their practical value, and will be lithographed or cut by the best available engravers. Thoroughly good specimens of art workmanship in metal, wood, stone, and textile fabrics, and of all descriptions of decorative art of various styles and periods, will occasionally be selected both for description and representation.

Of the sister arts of Painting and Sculpture, such notices will be given as the space at command in a periodical which necessarily must be so much more than purely an art journal will permit.

General literature is unquestionably quite beyond our limits, but the literature of architecture, engineering, and building will be constantly and carefully reviewed. The varied and valuable publications issued on the Continent, and far too little known in this country, will be noticed, as well as those published in Great Britain; and it is our hope that not only will the pages of THE ARCHITECT contain an impartial and sufficient review of every work bearing on any of our subjects which shall appear from this day forward, but that occasionally the nature of some of the valuable stores contained in our forgotten books and important libraries may be so pointed out that students may be guided to unsuspected sources of knowledge.

Building as an art, and Engineering as a science, form another group of our proposed subjects,—including the nature and use of all building materials, the contrivances and appliances belonging to building, the art of construction, and the science of designing works of engineering. Good examples of arrangement and contrivance will be given among the illustrations, and the special structures which have to be designed for exceptional purposes will not be overlooked. Machinery and mechanical engineering generally lie outside our limit, except when designed specially to do the work of the builder; but all labour-saving appliances which may appear will be carefully noted. In fact all new inventions brought under our notice and which seem



really to merit being put to the test of experience shall be described, or at least pointed out.

Surveying—a link between architecture and building, when understood to mean the surveying of buildings, and an auxiliary to engineering when applied to land—deserves and shall receive notice. This will give occasion to consider many questions of varied natures which are in debate, as to the position and duties of building surveyors; and to collect and furnish information as to the value, the compulsory sale, and the tenure of house property.

The business of building, especially in these days of keen competition, is in a position which renders reliable and early information of great value; we shall be alive to the importance of securing and furnishing to our readers such intelligence.

Men, as well as work and art, claim space in the pages of *THE ARCHITECT*. The position and prospects of the workman, of the labour market, and of the various trade societies of the country; the status of the contractor, and the fair and equitable adjustment of differences between him and his workmen on the one hand, or his employers on the other; and the position, duties, obligations, and remuneration of professional men, form a series of subjects to which we hope to give constant attention. The fitting education alike of the operative and the art workman, the surveyor, the engineer, and the architect, is a kindred subject and one which presses for notice, and cannot, and will not, be long left in its present unsatisfactory condition. *THE ARCHITECT* will give its hearty and unwavering support to any wise measures for improving the technical education of the artisan, or for the systematic instruction of the student of architecture or civil engineering which may be brought forward.

The proceedings of various learned, professional, and other societies, will be reported in these columns so far as they are available, and come within the scope of the journal. These societies have done very much to raise the position of the professions which have founded them; and in that which remains for them to do, they will, we believe, only be successful when supported by the public press.

The columns of *THE ARCHITECT* will always be open to all legitimate correspondence; and readers are invited with brevity and distinctness to address communications to us on any points of importance that arise. Such letters as contain enquiries on points of a practical nature, we shall ordinarily treat as addressed rather to the readers than the conductors of the journal, and shall usually print without editorial reply, with the desire of receiving answers from our readers. The 'Notes and Novelties,' for which we reserve a column, will contain brief and miscellaneous accounts of whatever is newest and best; and for this column and our list of tenders, we shall always gladly welcome properly authenticated information. To furnish the general information of the journal, not only England, but the Continent, the Colonies, India, and the United States will be explored, and *THE ARCHITECT* will endeavour to give a constant succession of intelligence at once useful, reliable, and new.

The Editor has no desire in the conduct of this journal to intrude himself, his works, or his name on its readers. No one can feel more than himself the impossibility of carrying out unaided any portion, even the smallest, of the wide programme just sketched—a programme no wider, however, than the narrowest view of the meaning of such a title as *THE ARCHITECT* renders it necessary for him to lay down. He is happy, therefore, to be able to rely on the hearty cooperation of many friends and fellow-labourers as contributors and supporters. So many and so varied and so valuable are the sources from which it is possible to obtain contributions, that it is confidently hoped the result may be found to deserve, and will receive, a large share of public confidence.

T. ROGER SMITH.

*Note.*—The conductors of *THE ARCHITECT* consider it due to themselves and the public to say frankly that, in their opinion, the execution of the illustrations in the first number is not quite equal to the importance of their subjects—most certainly not equal to what they themselves consider it essential such illustrations should be. This arises principally from the difficulty of printing a very large number of copies within a very short time. The defect shall be remedied in the future; but not to have noticed it would almost have implied that we were not alive to it.—Ed.

## THE ARCHITECTURAL AND ENGINEERING PROGRESS MADE DURING THE YEAR 1868.

**T**HE year 1868 has been marked by political events of no ordinary magnitude. As regards its architectural and engineering character, it has no doubt been less memorable, although even in this respect its records are far from presenting a blank.

The absence of enterprise, and the continued embarrassment arising from the operations of finance companies, credit companies, and other associations formed for the purpose of giving an undue stimulus to the employment of the engineer and of the contractor, have continued with unexampled pertinacity. One after another, the boards of directors of some of the largest of our railway companies have been compelled to meet their shareholders with the confession that they have been in the habit of distributing dividends that were not actually earned, and that more money must be forthcoming to meet the demands of accumulated debt. In some cases the result of this long deferred confession has been to show that honesty was the best policy. Difficulties, when boldly looked in the face, have diminished or disappeared; and the cessation of aggressive warfare has been attended by a careful development of the true sources of revenue.

In other cases the attempt has been made to make the public pay for the extravagance and incompetence of the boards that had so far wasted the property of their constituents. The most signal instance of an aggressive policy of this nature appears to have resulted in failure. The Brighton, South-Eastern, and Chatham and Dover Railway Companies, failing in their attempt to push through Parliament a Bill that would have left the district which they were incorporated in order to serve, altogether at their mercy, have tried the unpopular experiment of a sudden and considerable increase of fares. The immediate cash results will be made evident at the next half-yearly meeting. Judging from the weekly returns, it will be eminently disappointing. The effect produced on the public feeling of the residents in the district is evinced by the Parliamentary notices for the construction of competing lines that have been deposited for the ensuing session.

Some slight indication of a revival, if not of confidence, at least of the anticipation that confidence may some day return, is to be found in the notices given for the needful, and long delayed, supplement to the railway system which is to be afforded by town tramways. It is inexplicable that this simple expedient should have been so long delayed. When once a well-selected and well-conducted experiment is carried out on an adequate scale, the experience of what has been done in this respect in America forbids us to doubt the great demand that will rapidly arise for this method of communication.

The wealthy and enterprising merchants of Liverpool have still allowed the formation of a railway tunnel under the Mersey to remain in the state of project, although Parliamentary power has been obtained for carrying out the scheme. The ample return that the actual traffic, so inconveniently carried on by the various ferries, would afford, even if the subway through the solid sandstone on which Liverpool stands should cost as much as that beneath the silt and mud of the Thames at Rotherhithe, is such as to ensure the completion of this scheme sooner or later. However, some effort is now being made to commence operations.

Of all the triumphs gained by the engineer during the year, and in some respects of all the most memorable and successful operations of the military branch of the profession, must be ranked the well-planned and successful march on Magdala. For the first time in our history the conduct of an important expedition has been committed to an engineer. For the first time has a great enterprise, under unexampled conditions, involving the exploration and the temporary military occupation of an entirely unknown country, been carried out with uninterrupted success.

While we have thus raised the credit of the engineers of this country abroad by their admirable discharge of an unprecedented duty, we have done much, not by origination but by progress, for the adornment of our capital at home. We have opened to pedestrian traffic a short and healthy route from Westminster to the Temple. The partial completion of the Thames Embankment is at once the addition of a noble architectural feature to London, a step towards the thorough internal service of the traffic of the metropolis by the opening of well-considered lines of thoroughfare, and a redemption of the Thames from a state altogether discreditable to the civilisation of the nineteenth century.

The work of demolition in other parts of London is preparing further additions to the convenience as well as to the splendour of the metropolis. Thirty months have not proved sufficient for the completion of the Holborn Viaduct—a grievous delay and waste of time and cost for which, we suppose, some explanation will be forthcoming. Enough is done to lead us to anticipate the opening of this important line of roadway with impatience. It will add some forty minutes to the day of each of the hundreds of thousands of persons who daily are condemned to pursue the present tortuous route from Oxford Street to the City. The changes and improvements in the neighbourhood, which cannot be fully appreciated before the completion of this great central improvement, are upon a scale that is actually colossal.

A further step in raising London to a level with other capitals has been taken in the construction of the new Meat Market.

A great improvement in the internal communication of the metropolis has been made by the completion of the Western extension

of the Metropolitan Railway. The Midland Railway Company have also opened their new terminal station near King's Cross, together with the line providing a separate and independent access to the metropolis. The immediate effect of this step appears to have been the transference of some 4,000*l.* to 5,000*l.* of the gross weekly revenue formerly included in the returns of the London and North-Western, Great Northern, and Great Western Railways to those of the Midland line.

The Abbey Mills pumping station of the metropolitan drainage system has been opened, not without the expression of strong local indignation against the costly character of the architectural decoration. The grave question of the mode in which the bed of the Thames is becoming obstructed by the discharge of the sewage of the metropolis into the stream at the new outfall has been raised, but, although it has been vigorously debated and disputed, it has not been set at rest.

The ordinary progress of minor architectural works throughout the country has been not a little checked by the paralysis that has struck engineering enterprise. Speculative building has been rudely checked. Each week has, indeed, contributed its amount of churches restored, repaired, or newly opened. Private houses of some pretension are increasing in number; but a general slackness of work has been felt both by architects and by builders. The decision among competing designs for a new town hall for Manchester has been one of the most important features of provincial building. The commencement of the new St. Thomas's Hospital has been marked with not inappropriate ceremony, considering the magnitude and importance of the building. It is a fact to be deplored, the significance of which should not be lost sight of, that the iron fittings for the building have been constructed abroad, and that foreign manufacturers have beaten English manufacturers by open tender.

In London we have also witnessed considerable progress in the general design for providing proper accommodation, of what may be styled a palatial character, for the service of the Imperial administration. The new Government offices which open on the Park form only a small portion of the buildings which are admitted to be necessary. The notices deposited in anticipation of the Parliamentary Session of 1869 provide for the clearing away of nearly the whole mass of private residences between the Horse Guards and Westminster Abbey. Great George Street itself is doomed, and a new and official Westminster is about to occupy this advantageous site. There is room for the hope that within a few years the vista and the details of the architectural works ranging from the church of St. Martin to the Abbey and the Palace of the Legislature will be worthy of the wealthiest city in the world.

Connected with this subject of site is the possibility that the question of the position of the New Courts of Law may yet be reopened. A large mass of building, in the vicinity of Chancery Lane, has been cleared away for this purpose. The time-honoured gate of Temple Bar appears to be doomed, from the inevitable march of innovation. Between the North Thames Embankment and the streets leading from the Strand a noble site is still awaiting the labours of the architect. Nor are these sites likely to remain long uncovered, as architects have been appointed by the Government for four most important public buildings—namely, the Courts of Law, the New National Gallery, the new Public Offices, and the new buildings at South Kensington. The only fear that suggests itself is, whether the simultaneous prosecution of so large an amount of building of the first class may not cause an inconvenient disturbance in the labour market. For the private rebuilding of London shows no symptoms of slackening. Banks, new club-houses, and churches emulate one another in richness of decoration. And the large estate of the Marquis of Westminster, the source of a revenue larger than that of many a sovereign prince, is being rapidly covered with buildings not unworthy of so wealthy a landlord.

Among provincial works one of the most important that has been commenced within the year 1868 is the new dock at Newport, which, when carried out to the full design, is estimated to cost 600,000*l.* A railway viaduct over the Mersey at Runcorn, containing three spans of 305 feet each, would have attracted much attention at an earlier period of our railway enterprise, and the Barnley viaduct is a work of similar importance.

The water supply question has not ceased to attract the attention of the public. To the project of bringing water from the Welsh or the Cumberland lakes to the metropolis is opposed the dictum that each great river basin should derive the supply necessary for its inhabitants from its own watershed. The manner in which the rainfall is for the most part wasted is insisted on by the advocates of this natural principle. It is evident that a final decision on the subject can only be arrived at in connection with the settlement of the cognate questions of sewage, and of the redemption of rivers from pollution. The Commission nominated to enquire into this subject has been reconstituted, and all that can be positively stated as to the progress made during 1868 towards the adoption of definitive normal rules as to water supply, defecation of sewage, manuring ground from this source, and restoration of inland fisheries, is the fact that the public mind is becoming slowly awakened to the extreme importance of these elements of public health and comfort. The most recent report on these kindred subjects—that of an officer of the Royal Engineers, consulted at the recommendation of the Government—has been noteworthy for its insistence on the necessity of keeping

rainfall distinct from sewage; an arrangement which must underlie any economical method for at once utilising the salts applicable to vegetable growth, and avoiding great waste of water.

The occupation of English engineers and of English capital abroad has not been a prominent feature during the past year. A great field for enterprise appeared to open in Spain, but it is yet premature to point to the Peninsula as a safe field for English enterprise.

The transit of our Indian mails has been accelerated by the opening of the railway over Mont Cenis, constructed according to the plan of Mr. Fell. The successful working of this railway is likely to lead to the opening of other lines of communication through the passes of the Alps. A summit railway, unless so protected by galleries as to lose almost every feature of economy in construction, is liable, it is true, to occasional interruptions by snow or by rainfall. It cannot compete with a tunnel. On the other hand the difference of expense in primary construction, as well as the saving of time as compared with that demanded for piercing a long distance, is considerable, and the advantage over the use of the diligence is so great as to leave no doubt that, in any case of adequate traffic, where a tunnel is not made, a line on Mr. Fell's plan will be adopted.

Meantime the French and Italian Governments are steadily at work in the bowels of the Alps. The latter has arranged for the transmission of the mails to Brindisi, and M. de Lesseps is steadily spending 200,000*l.* per month in the excavation of the Suez Canal, the opening of which much-debated route he promises by October, 1869.

The New World vies with the Old in its provision of a line of transit that is to be measured, not by miles, but by degrees of longitude. Of the 3,000 miles which intervene between the Atlantic and the Pacific Oceans, about one-half may be regarded as settled country. A modern town on the Missouri river, called Omaha City, is the westward frontier of American civilisation. This point is, of course, reached by railway. But the enterprising people of the States are unwilling to compel the travellers to California to go round by the Isthmus of Panama. They have already commenced a railway across the desert, haunted by no Indians, that intervenes between Omaha and Sacramento. At the close of 1866 the gap between these two points was one of 1,720 miles, with the slight deduction of thirty-one miles of railway constructed on the Sacramento side, and forty on that of Omaha. Since that time the rails have been pushed forward from Omaha to the distance of nearly a thousand miles—a feat without parallel in the history of internal communication, as it involves the construction of a mile of railways for every working day, Sundays alone being excluded, during the interval of three years. From Sacramento about 400 miles have been laid during the same time, and the engineers express confidence that before the close of the year now approaching the entire line from one ocean to the other will be open for traffic.

The progress of railways within the United Kingdom is tabulated to the close of 1867, the returns to the Board of Trade occupying eleven months before the public are informed of their results. During that year, the total paid-up capital of the railway companies in question was increased by about twenty millions sterling, or from 481,872,184*l.* to 502,262,887*l.* The length of line open was increased by 393 miles, from 13,854 to 14,247. The number of passengers conveyed increased from 274,295,038 to 287,688,113. The number of applications to Parliament for the session of 1869 are 78, those for 1868 having been 109. About one-eighth of these applications are for powers to abandon lines and branches, and about one-fourth are for obtaining extension of time. There are thirty-four notices for the incorporation of new companies, eleven of which are for the purpose of making railways or tramways in London or its suburbs.

## MR. MARKS'S WORK AT THE GAIETY THEATRE.

By EDWARD W. GODWIN, F.S.A.

NO seriously-minded person ever expects to see architecture at the opening of a new theatre. Building a modern theatre is essentially a speculation in the worst sense of the word. It is not merely a speculation with money—it is not merely a question of cheap materials and cheap manufactures, but always associated with these we find a style of construction never found in lasting, durable buildings—a style irreconcilable with any art principles, and possessing no recommendations even to the theatrical speculator beyond the one and possibly the only recommendation it could possess for him—a narrow economy of money and of time. To build a theatre in three or four months may be a very noble ambition. The capital you expend does not long lie idle. You turn your money, as the phrase is, rapidly; your architect has no time to pause for thought; your painter and decorators have no time for study of effects *in situ*; your engineer has no time for experiments; your masonry and brickwork, if you have any, have no time for settlement. In a dozen rooms in a dozen different parts of the town men are working on the box-fronts, the ceiling, the proscenium, the act drop, &c. Your artist-in-chief, who paints your figures, has no time to talk about it. Thirty or forty life-size figures to be painted in two months is an order that makes any supervision of the ornament-painters, any consultation or any experiment as to position and light, simply impossible. That all these *disjecta membra* should be rattled together at last and form a satisfactory and complete whole is one of those things no one could have expected, and about which therefore no one can be dis-



appointed; but—it is a speculation. There can be nothing, then, left us but to sympathise with the unfortunate people who elect to take part towards the fulfilment of the theatrical speculator's ambition. That some artistic success may sometimes attend some portions of the work must be acknowledged, but it is hardly a question that such success must be of the nature of a fluke. I take it for granted every one knows the long frieze or space generally found over the proscenium, and which is occupied in some theatres by the principal (sometimes the only) figure subject in the building. This at the Gaiety, as at the Queen's, is the kernel of the whole structure. The buildings may or may not stand fire—that, of course, remains to be proved. The stage may be, and probably is, a capital piece of carpenter's work. The problem of entrances and exits may or may not have been completely solved; but as only a panic could satisfactorily test this, the arrangement, as we see it, may be open to question. The interior effect may be, as the *Pall Mall Gazette* says, 'most ornate,' whatever that may mean, and the building may be altogether a novelty in architecture—i.e., in the sense that adaptations from the French are novelties in dramatic literature. Whatever may be said, the *art-work* at the Gaiety is confined to Mr. Marks's work. This work consists—so we are told—of, first, a frieze or long panel over the proscenium; and, second, two lunettes over the stage boxes immediately adjoining the ends of the frieze, but at a little higher level. Now before entering at all upon the merits or demerits of these three paintings, it would be well to clear the ground a little of what might otherwise prove stumbling blocks in Mr. Marks's career as a wall painter. There are three points which it is desirable should be cleared up. First, the scale of the figures in the frieze; second, the difference of scale between the figures in the frieze and those in the lunettes; and third, the execution of the figures in the lunettes. If Mr. Marks is not responsible for these things, and if he wishes to become a wall painter and to work with architects, it is of the utmost importance that the amount of his non-responsibility should be well and clearly defined. As to the scale of the figures in the main subject, it is manifestly out of all proportion with the building, and is, to say the least, dollish. Now above these figures, and flush with the figure panel, is a large flat space, covered with gold fleur-de-lis on a blue ground, any portion of which space might easily have been added to Mr. Marks's panel. Who was it therefore who fixed the height of the panel? If Mr. Marks be the culprit, his reputation as a wall or decorative painter will suffer not a little; if any one else fixed it, why did not Mr. Marks protest, and if needs be, decline the work? The ridiculously small proportions of this the *chief* figure subject being fixed, how was it that the figures in the *subsidiary* subjects *close by* were increased in scale? I need not insult my readers by saying that the manifest effect of this is to still further dwarf the main subject, that was already far too small for its position. Now either Mr. Marks must have known that this would be so, and was thus deliberately guilty of what I shall take the liberty of calling a decorative impertinence, or he did not paint the lunettes at all. And it is just this latter conclusion to which any one must arrive who will take the trouble to use his binocular from the level of the upper boxes and compare the outlines with the outlines in the frieze. Who then did paint them? And who was responsible for increasing the scale of the figures? These are questions which Mr. Marks has an interest in having clearly answered, for the designs of the lunettes are as evidently by him as the work itself is evidently not by him.

Of Mr. Marks's three designs, as distinct designs, there is little or nothing to say in blame. Taken, however, *together* as decorative paintings, they have the defect of being unequal—unequal, that is, not merely as to scale, but as to that all-important element in decoration which may be described as space-filling; for if we are inclined for sumptuousness of decoration, the lunettes appear bald by contrast with the frieze, whilst if we go in for temperance and Spartan simplicity, the frieze appears crowded and over-rich by contrast with the lunettes. As compositions the lunettes are perhaps more complete, but then the space was so very much more easy to treat. Exceptions might be taken to the drawing; but as I do not believe Mr. Marks to have executed the work, and as the name of the real painter of Mr. Marks's designs has not transpired, it is hardly worth while to dwell any longer upon these subsidiary subjects. The chief, or frieze subject, represents a mediæval masque before a Royal party, and is thus arranged:—A little to the left of the centre of the picture is a throne with a double-stepped platform in front of it; behind this, two attendants and a group of six courtiers; seated on the throne are a king and queen; their little son stands on the platform just in front of them; lolling rather than sitting on the step in front of the boy-prince is the court jester; immediately in front of these, and occupying the centre of the picture, is a group of seven dancers 'making circles,' to adopt the technical phraseology of the ballet; beyond these a dwarf; then a group of players—a king, a queen, a knight in armour, and a second lady; beyond these a group of six musicians complete the picture. The back-ground is in two colours, divided horizontally; and Mr. Marks may thank his horizontal line for keeping his picture together, for without it there can be little doubt that the different groups would appear too isolated. Nevertheless, the composition on the whole is pleasing; the two extreme groups, viz., the courtiers and the musicians, are well put together, and both in colour and drawing are artistically managed. The two smallest figures, viz., the boy prince and the dwarf, are perhaps the best. That this may be in part owing to their isolation is very possible. Indeed I cannot help

thinking that under the conditions of site, the whole work would have been improved and more decorative had there been twenty-two instead of thirty figures. I am sure of this much—that it is not by a liberal use of figures in a given wall space that the artist is necessarily to produce good decoration. One figure with 'go' in it plus a few accessories with *meaning* in them would decorate a far larger wall space than is generally imagined. It is surprising how much space one really good figure will satisfy when well drawn with bright and lively colours. Had Mr. Marks fully realised this, we should possibly have had one figure to admire in the place of four which can scarcely claim that degree of consideration. Thus, the dancing-girls—very difficult to compose, still more difficult to draw—are ill-composed and ill-drawn; moreover, the mass of white dress in this central group is far too strong. For although every one will easily see that it has been the intention of the artist to get the conventional high light in the centre of the frieze, and balance right and left his lights and darks with a sternness almost geometrical, yet I cannot help thinking that the intention was not worth much, and that it would have been as well if Mr. Marks had defied this conventional rule, or, if this were too much to do at once, he might have subdued his high light to the lowest point compatible with academic propriety.

One word as to details. Of what use is the little embroidered shield on the back of the gold stick in waiting? It is a patch and nothing more. Why such a modern property shield in the hand of the player knight? Shields in the middle ages were as common as umbrellas are now, and players wanting a shield would surely have a real one, and not a piece of a 3-inch plank. I suspect, too, there are some people who might ask Mr. Marks disagreeable questions in respect to some few of the costumes; but where so much is good, I will leave this to more hypercritical pens. One thing I hope: that, whatever opinions or criticisms may be published, all will agree in giving Mr. Marks credit for having produced an admirable decorative painting under trying conditions, and every one must join in awarding no end of praise to the theatrical speculator who could entertain the question of an artist's commission being an item in his speculation. I should add that the painting is executed in oil colour with turpentine medium on canvas—a process which, to my mind, is not one to be encouraged.

#### THE CO-OPERATION OF ARCHITECTS AND ENGINEERS.

**A**LTHOUGH there is everywhere an abundant demand—notably in our shops and Exhibitions—for such of the skilfully contrived productions of our various industries as possess delicacy and minuteness, yet the popular mind seems to be reviving the old world taste for the gigantic. Our modern public works and projects excite little admiration now-a-days unless the prefix of *monster* can be applied to them. Conceptions of moderate, or even average dimensions, meet with little more than indifference. And this is observable in all the branches of enterprise on which the skill of head and hand is employed. We see works of various public interest growing in magnitude as if there were absolutely no limits to the scale on which they may be executed.

We have paused in awe before the stupendous piles of mediæval workmanship—such as our cathedrals have appeared to us—but now we hear of new edifices which are to dwarf the greatest of these. Public halls, of which our metropolis—itsself belonging to the monstrous—used to boast as grand and spacious, are to be thrown into the shade by a new monster which will leave these with no more reputation than mere meeting-houses in point of dimensions. Again we have the monster hotel rising around us as a familiar object, whose size reduces to the scale and appearance of private houses the large establishments of a few years ago. And in most appropriate conformity to this general rage for the gigantic, we have new railway termini rearing their mammoth forms, one after another, any one of which makes the largest stations of our younger days appear as so many coach-houses.

The ever-swelling proportions and the grand scale of the works we have already among us are undoubtedly to be referred to that wonderful development of engineering skill and enterprise which the last quarter of a century mainly has witnessed. The engineer, seizing on the bountiful products which men have been extracting from the bowels of the earth, has found in them the means of realising his most ambitious projects. Especially by the iron material so illimitable, apparently, in its capabilities for construction and in the scale of its combinations, the last and present generations have seen a new profession created, which before had scarce an independent existence. And by this same material not only has a new name been given to our age, but a disturbance made in all the old landmarks of building science.

While we seem to refer the revolution in the design and conception of our public works to the agency of the engineer, it is not to be supposed that the architect has been insensible to or unaffected by it. On the contrary, it is evident that he too has caught the infection of that thirst for the colossal which we have been speaking of. It is equally clear, however, that he has shown but small sympathy with it. He has given rather a passive than an active adherence to it. The age has been demanding—or, at least, greedily accepting, the novelties in

monster form which our engineers have been ready at any moment to supply for it. The architect, on the other hand, faithful always to the traditions of his art—grand and multifarious as they are—has been caring less for what *might be* than for what *has been*. He sympathises but little with the engineer, who cannot point to his iron models in antique or mediæval temples; and he knows that in the older times the architect reared his works by his own skill, whether we may view it as artistic or constructive.

While all this is historically true, it is a fact not to be ignored in these times, that the profession of engineering, as we now regard it, has come somewhat into collision with that of the architect. The engineer in frequent cases has now the exclusive possession of works which formerly the architect alone was supposed capable to deal with. Over and above all this—and it is a point not to be evaded, for it is the kernel of the subject—there has grown up in our day what some may prefer to call an indifference between the two professions, but which we think is more correctly described as an unexpressed, half-conscious sort of jealousy in each towards the other.

It is in this circumstance—not hitherto faced frankly—where the question of the greatest public interest arises. In all the works which proceed from the hands of our architects and engineers, there is surely something more than mere utility and sound construction to be demanded. For it is a consideration not sufficiently insisted on that these works are, in their nature, *public* property; and that, too, in an enormously wide sense. They differ in the widest possible manner, in this respect, from the other arts and sciences. For example, a man will paint a picture, or carve a piece of sculpture, which another will purchase; but the influence of such works in either case is comparatively of a private character. At the most their possessor confines them within doors, where if they be admirable, his friends and visitors only can enjoy them; or if they be otherwise, it is only these who have to endure them. But the case is very different when we come to the works of our engineers and architects. They span our rivers and line our streets, and the public have no escape from them. If they possess any beauty or interest, there is a public enjoyment in possessing them; but if they are ugly, mean, and untrue, as so many of our public works unhappily are, and that by popular verdict, what is to be said for them or done with them? There they stand, to bear the same offensive lineaments for generations. They are not only public, but permanent—too often, indeed, designed to be dreadfully permanent—and the public taste has to endure and suffer them from age to age. Can it be supposed that in this fact there is not matter of public moment? Is it logically possible that through one sense a man may have his physical life poisoned by a bad odour, and that his moral sensibility will escape unhurt from an ugly sight through another sense?

It must not be inferred from all this that it is the engineering of our day which has to learn everything from an alliance with architecture. There are equally grave faults of omission and of commission on both sides, and the two professions, rightly working, in ways we hope to illustrate hereafter, may mutually help each other to public advantage. In this view we are supported by a pretty general sentiment which is growing in both professions, and especially among their leading representatives. The two specialties must come together and work harmoniously if we are to have great works worthy of the age, and commensurate in historical value as monuments with the reputation of our civilisation, wealth, and power.

The kind of tacit estrangement which now exists between architecture and engineering imperils public interests, and results in the abuse of popular taste. The engineer can no more afford to work without the architect on his great works than the architect in similar case can dispense with the engineer. In the one case we are threatened with mere size and solidity without sightliness; and in the other, with works which promise an antiquarian rather than a true artistic interest as productions of our own day; while the art of the architect threatens to fail in its highest aim—the elevation of public taste and the excitement of popular sympathy—because it refuses to bend to the wants and discoveries of the time.

It is in no sense derogatory to the prestige and honour of either profession that the public should long to see the divorce between them annulled. Each has its special excellence and its special province; we only desire to insist that the intellect of both is essential to great and lasting successes in our public structures of every class. Life is far too short in our day, the competitive principle too active, and the exigent demand for speedy execution of our work too pressing, to allow of any one man achieving high excellence in the character of architect and engineer at once, as we now understand the high functions of the two professions. Your modern engineer can as little be expected to design a town hall or a cathedral up to any noble mark, as your architect can be asked to construct a suspension bridge or a railway station on a grand scale. There may be, and have been, here and there, eminent instances of men gifted with the rare combination of engineering and architectural talent; but they are so scarce and so far between as not to affect our argument. How many architects, for example, are there among us to-day who could, *de novo*, and without existing models, at once design and construct a Westminster Abbey or a St. Paul's Cathedral? Similarly, it may be asked, where is the engineer who could construct and design them? The architect may be able to design and the engineer to construct works of such a mark, but it is idle ever again to expect that either can do both unaided by the other.

This question of co-operation is of equal value to the architect and engineer. That the works of either one or the other, on the grand scale which has become common among us, would gain vastly by such conjunction of the two special talents, seems so much of a platitude that it needs hardly to be insisted upon. The practical advantage of this combination is a more important subject for discussion. The art of the architect, it must be urged, will gain greatly in public favour if he can be enabled to design his greater works entirely from the point of view which his artistic training and instinct naturally suggest to him, almost wholly unfettered by the more intricate calculations which belong to the science of the engineer. On the other hand the engineer would undoubtedly achieve greater popular triumphs if his larger works were put through the hands of the architect to be clothed with some feeling of imagination and artistic interest. We are well aware, from a tolerably intimate knowledge of the inner life of both professions, that the model engineer of our day treats with a comfortable indifference all æsthetic considerations as fantastical and unnecessary so soon as he has satisfied himself that his girders and rivets are all perfect. In some similar degree the architect too often sacrifices grand opportunities of effect and true principles of construction by a mere slavish adherence to shapes and forms, or by the false and extravagant use of materials.

In the discussion of this subject how much may one learn from a contemplation of the works of God! To take the highest and noblest of His creations—Man. Do we not find the simple skeleton constructed in perfection for all the purposes of rest and locomotion? But we are not left with merely perfect construction. Flesh and tissue are clothed over the perfect framework; and lineaments of beauty are so fashioned that no human taste can exhaust the admiration of them; the vital fluids of the body are made to course beneath their transparent surface, with hues of colour whose subtlety and variety defy the highest effort of the painter's art. And let it not be omitted, that while our beneficent Creator has designed His work in this almost incomprehensible beauty of form and structure, He has also endowed us with the still higher blessing of sensibility to its loveliness.

(To be continued.)

## THE HANDY-BOOK OF HOUSE-BUILDING.

### INTRODUCTORY.

A DWELLING-HOUSE is, in one sense or another, a matter of at least occasional concern to everyone; and no other sort of building exists respecting which so many persons require sound knowledge. We all live in dwelling-houses; almost all acquire at least that temporary ownership of one which comes from occupation of it as tenants; and many at one time or other buy or build houses for residence, or investment, or both. Of those whose profession or business it is to build, there are few who have not at least some part of their attention claimed by dwelling-houses, while very many architects and builders erect little else.

Although some valuable books have been written which treat subjects relating to dwelling-houses well, as also some of less value, it seemed, some years ago, to the present writer that there was room for a compact hand-book which should take a very practical point of view indeed; and the present series of papers was commenced. The work was laid aside mainly from the belief that it would be rendered unnecessary by a treatise which has since appeared. The very completeness of that treatise, which will no doubt long remain a standard book of reference, has, however, lifted it above the range of a hand-book. With regard to a large number of practical matters, such as arise during the conduct of all the operations preliminary to and during the building of a dwelling-house, the field is as free as it was before; and even with regard to such matters as are common to the intention both of the present papers and of the book alluded to, there seems scope for a condensed statement of their salient points. The work has therefore been resumed without hesitation, and in this series of papers it is hoped that every class of the readers of this journal may find something of practical value; for what is here stated will be the result of a varied and extended experience in the practice of house-building.

The course proposed to be taken is to furnish, in four or five short and separate series of papers, answers to such inquiries as the four following:—

1. What is meant by a good house?
2. What sort of house to build?
3. What will it cost to build?
4. How is building a house to be set about?

In answer to the first question, we intend to consider briefly those points in which houses suited to the requirements of the English climate and of modern life and manners agree; and those where they differ, according to variation in site, or size, or purpose; and to name some of the most prominent essentials for the comfort, convenience, health, and safety of households.

In answering the second question, it is proposed to divide dwelling-houses into groups according to their size, and to give illustrations showing a typical example of each group; also, to point out the mode of providing in each the essential requirements already indicated.

Under the third head, the approximate cost of the specimens, or typical examples, will be stated, and information upon the whole question of cost furnished.

The fourth head will contain advice as to the whole course of the planning and erection of a house, and will trace the mode of procedure from the commencement to the close.

Many general topics, which are almost equally admissible under any of

the above divisions, will arise. Some may be introduced, as seems most appropriate, in the body of the work; others (especially such as relate to stabling, outbuildings, and the other adjuncts of houses of large size) will remain for separate statement.

It remains only to remark that, though dwelling-houses built in towns differ widely in many particulars from houses built in the country, it has not been thought impossible to treat both at the same time. The country house is always the more completely unfettered of the two, and many desirable things have to be abandoned when building on an urban site. The course will therefore generally be taken of describing what should be done on a clear site, where no restrictions exist, and then of pointing out the modifications brought about by limitation of site, and the other circumstances peculiar to a city or its suburbs.

For a similar reason, a strict division into classes of house has not been attempted, except for the purpose of considering the question of cost. The simplest house, if fit for the occupation of a family of very moderate means, but of the ordinary habits of English gentry, contains the same essentials as the large family house or the manor. And consequently it has been thought that even those requiring to make their dwellings small and simple will be best directed how to make them good, if the practice where there is ample scope for expenditure, be laid before them, and be treated as being—what it really is—merely an elaboration of that which, in its more elementary form, belongs to their own case.

#### CHAPTER I.

##### WHAT IS MEANT BY A GOOD HOUSE?

A good house should be suited to our climate, and to the mode of life that modern English manners and customs have brought about. Its main essentials are convenience, comfort, privacy, and a pleasing appearance.

The simplest complete dwelling-house for a family must provide three sets of apartments for the purposes of (1) living, (2) sleeping, (3) service; internal communications; and at least two entrances. Frequently a fourth department (4) for children is required.

##### Living Rooms.

1. English habits require, in the simplest family house, two living rooms, one for meals (dining room), and one for receiving visitors (drawing room). As the house increases in size, it first happens that a second living room, known often as the breakfast room or morning room, is added—this becomes to some extent the peculiar domain of the mistress of the house; then a library, which, when there is no business room, is generally appropriated by its master, and, in other cases, often forms a morning room for gentlemen; and, as size increases, a small drawing room, a business room, a billiard room, a smoking room, a gun room, and an odd room may be added, in the order in which we have placed them. Each of these rooms requires to be of the right size for the family, of the right shape, and in the right place; it must be properly connected with the other parts of the house, and must in itself be such that the usual furniture shall be well accommodated in it, and that the occupants shall be free from discomforts, such as draughts, unequal or deficient light, cold, noise, or liability to being overlooked or to intrusion.

It thus appears that the designing of even a single room gives scope for skill, and leaves room for the possibility of grave errors; and when these are compacted together into a house, it is clear that the difficulty is not diminished by the necessity of fitting them all together. In endeavouring to give to each room an appropriate appearance, the dining-room may often be advantageously made rather long in proportion to its width, and a trifle formal in appearance, the recess usually provided for a sideboard being so treated as to give some little appearance of dignity to the room. If there are bay windows, they are often most suitably square—i.e., rectangular—on plan. Good lights for pictures, and suitable space for hanging them, are often called for in this room.

The drawing room, on the other hand, should have an aspect of grace and lightness. It had better be not quite so long in proportion to its width as the dining room, and ought to have a large allowance of window space; and if there are bay windows, they may be of more varied shapes. Sometimes some variety or play of outline can be introduced into the ground plan of a drawing room with good effect. In every good drawing room there must be at least one convenient place for a pianoforte. The small drawing room ought to adjoin the large one, and to communicate with it; but should be distinct, and with a separate entrance. It should combine something of the cheerful compactness of the morning room with the grace and elegance of the drawing room.

The library requires a large amount of unoccupied wall-space for book-cases, and should have an air of comfort and snugness. This is often promoted in a library as well as in a morning room, by giving it a certain squareness of proportion on plan.

The business room does not often require to be large, but must be well lighted, and if it can be approached direct from the lobby, or from the 'luggage entrance,' where one exists, by persons calling on business without their having to be shown into the hall, so much the better. A fire-proof safe is sometimes desired here.

The morning room requires to be bright and pleasant, warm, and not too large. These are the rooms which, in an ordinary dwelling house, form a cluster or group around the hall, the others that have been named being, when introduced, very often placed apart for various reasons.

(To be continued.)

#### ILLUSTRATIONS.

##### THE NEW BUILDINGS OF BALLIOL COLLEGE, OXFORD.

[Mr. Editor,—You have requested me to give you a short description of the work at Balliol, and to put my name to it. I do so with pleasure, believing it best that a description of this nature should be avowedly that of the architect himself, when it cannot be from the pen of an independent and unbiassed critic.]

The project of rebuilding a considerable portion of this ancient and

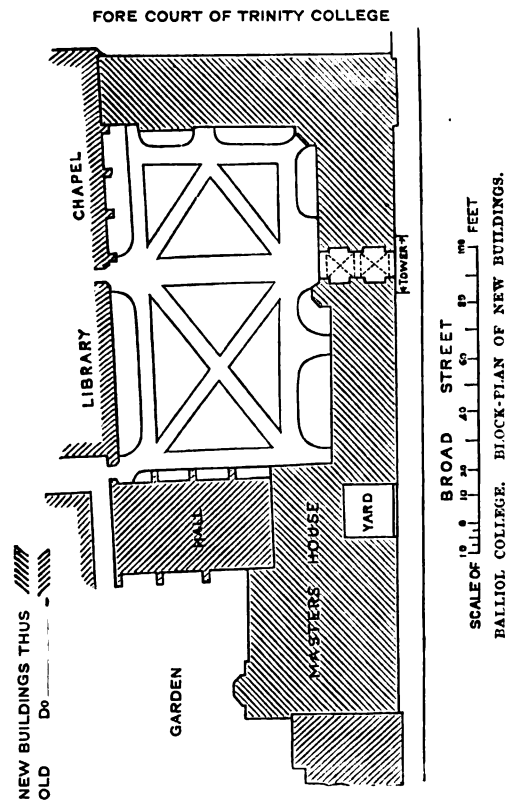
historically interesting College had been for many years in contemplation. Two designs had been prepared for the purpose, and, at a later period, Mr. A. W. Pugin filled a portfolio with beautiful studies for the same object, but was not enabled to carry any of his ideas into execution.

The munificence of a lady, Miss Brakenbury (the lineal descendant of John de Balliol, the founder of the College), who offered to rebuild that portion of the quadrangle facing Broad Street at her own expense, caused the work to be commenced in earnest, and the writer was requested by the College, in the early part of 1866, to prepare a new design embodying its present requirements. This being done, tenders were obtained, and that of Mr. William Brass, of London, amounting to about 20,000*l.*, accepted. The work of demolition began at the commencement of Easter Term last year, and the whole of the new buildings are now so far completed that, while the Master, the Rev. Dr. Scott, has been in possession of his house for some weeks past, the College-rooms will be in full occupation during the ensuing term.

The work consisted in the rebuilding of the south and east sides of the quadrangle, facing Broad Street and the fore court of Trinity College respectively, as well as of the Master's House, which looks into Broad Street on the south and into the College garden on the north, and is separated from the new College buildings proper by a small courtyard.

The old work which had to make way for the new was of little or no interest architecturally; its original character had been irretrievably destroyed by tasteless modifications during the last century, and the crumbling local stone of which it was put together made any attempt at restoration impossible; besides which, it was deemed of some importance to rectify an extremely crooked street line.

While thus two sides of the quadrangle are entirely new, the other two sides remain untouched, being all early work, with some slight exception in the way of restoration, and with the important exception of Mr. Butterfield's Chapel in the north-east corner. In the opposite, the south-west corner, the Oriel window of the dining-room in the Master's house has been, of course, religiously preserved; indeed, a feeling of the absolute necessity for its preservation has dictated the arrangement of much of the present plan, as, had it not been for the position of this Oriel, the hall would have been extended towards the south, and an urgent want thus adequately met.



The block-plan shows the general arrangement of the new buildings and their connection with those portions of the old which face the quadrangle on the one side and the garden on the other. The garden is shut in by the hall, the new residence of the Master, a long range of rooms built by Basevi, and a gateway and other buildings adjoining by Salvin; while, on the other side, the line of buildings formed by Mr. Salvin's picturesque kitchen and buttery, and the north fronts of the library and chapel, shut out the new buildings surrounding the quadrangle from view, except the summit of the new tower which rises above them.

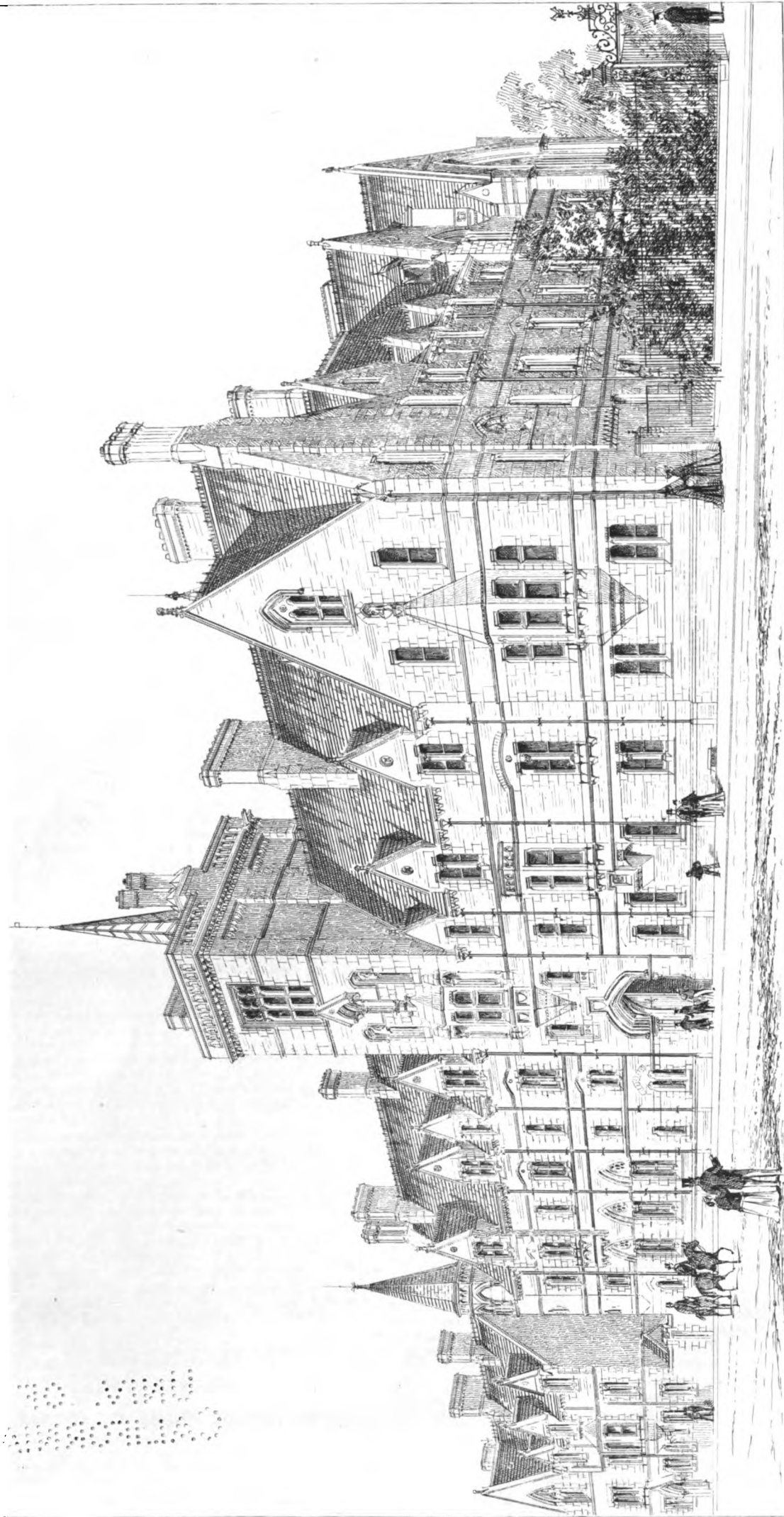
The perspective view shows the Broad Street front of the new buildings, which are built entirely of Bath stone and covered with Broseley tiles.

Further particulars will be given in a future number.

December 30, 1868.

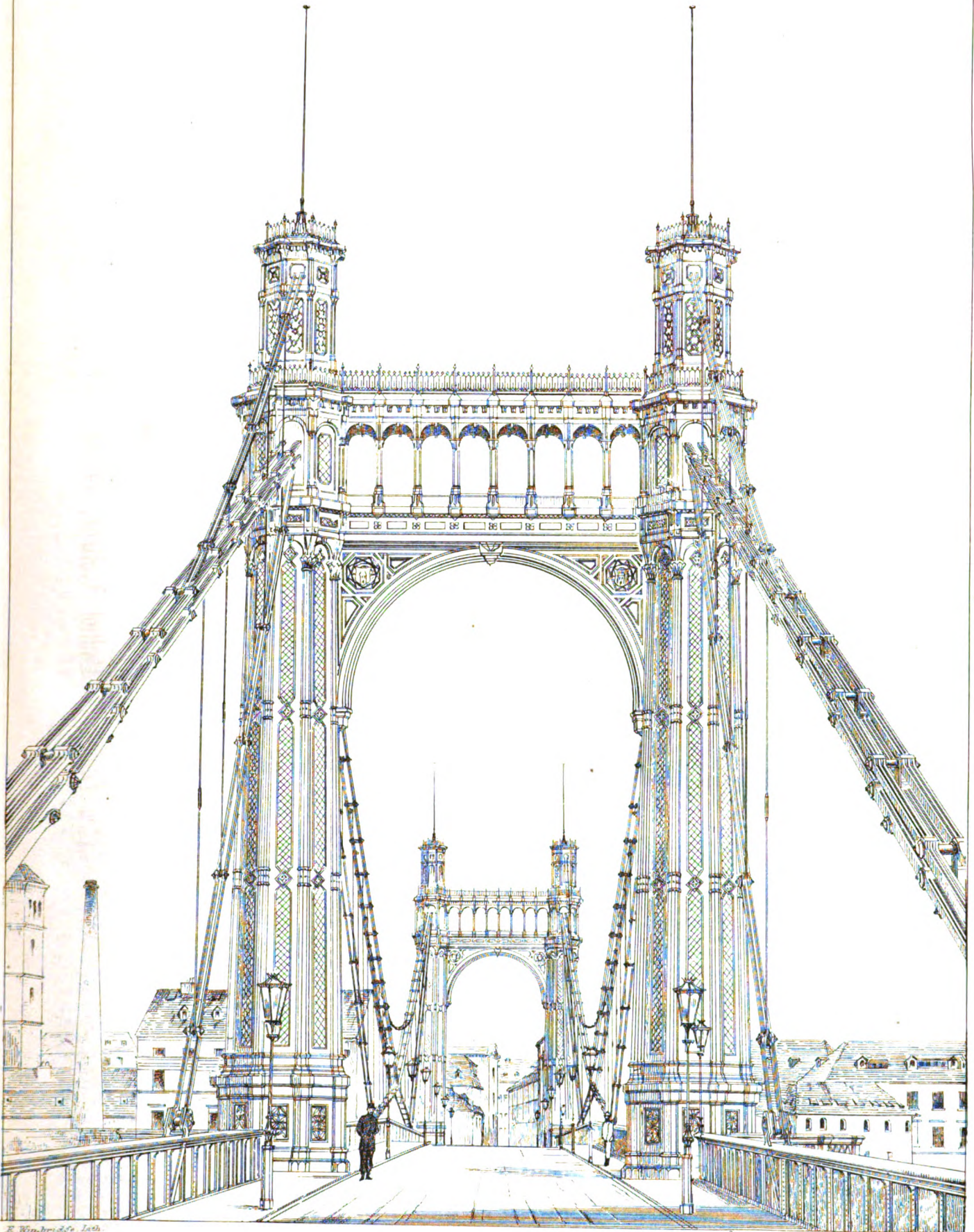
A. WATERHOUSE.

UNIV. OF  
CALIFORNIA



New Buildings Balliol College, Oxford.  
A. WATERHOUSE ARCHT.





The Francis Joseph Suspension Bridge Prague  
R. M. ORDISH, ENGINEER.

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(FRANZ JOSEPH BRÜCKE.)

**SUSPENSION BRIDGE OVER THE RIVER MOLDAU AT PRAGUE.**

THE work which forms the subject of our Engineering illustrations is the new Suspension Bridge over the river Moldau at Prague, which was opened by the Emperor of Austria, June 21, 1868.

This bridge is the embodiment of a new system of suspension as applied to bridges, which was patented by its engineer, Mr. Ordish, about ten years ago, more particularly with the view of adapting that principle to railway bridges of large span, as the acknowledged economy of the suspension bridge made the crossing of large rivers or chasms practicable for railways.

The total length of the bridge between faces of abutments is 820 feet, and the clear width between parapet girders is 31 feet, the distance between centres of towers is 492 feet, and the height from level of roadway to the crown of the arch in the towers is 50 feet. The parapet and cross girders are 'wrought-iron plate girders,' and are built and connected together on the ordinary system of railway bridge construction. The parapet girders are continuous between the piers and the piers and abutments, allowance for expansion and contraction being provided. They are supported, at distances of 82 feet apart, by means of straight chains, which in their turn are supported and retained in straight lines by means of a light curved chain (this curved chain being the main element in the improved system), thus enabling long compound ties of ordinary suspension bridge links to be retained in straight lines, and the deflection of bridges thus constructed being dependent only on the elasticity of the material, and not as is the case in an ordinary suspension bridge, dependent on the varying curve of equilibrium in the chains caused by unequal loads in addition to the elasticity of the material.

The carriage roadway is of an equal width on the whole length of the bridge, and is formed by 8" planking laid on the cross girders and wood block paving thereon. The footpaths are each 5 ft. 6 in. wide, and are formed by 4" planking, on which are laid 1½" oak wearing boards.

The whole of the suspension chains are of steel, and each link was proved by a tensile strain of twenty-two tons per sectional inch, without any permanent set, the specification for the links providing that each link should undergo such a test, and that the breaking strain per sectional inch should not be less than forty-eight tons.

The strength of the bridge is such that with a moving load of eighty pounds per superficial foot, in addition to the dead load of the bridge, there would be imposed a strain of six tons per sectional inch on the girder structure, and sixteen tons on the steel suspension structure of the bridge.

The bridge was tested on April 29 and 30, 1868, by placing sixty-five thousand bricks (weighing three hundred tons) on the foot-paths, from four to five courses deep, and with this load the deflection in the centre was 4½ inches; on the morning of April 30, sixty-four loaded vehicles of an estimated weight of 325 tons were driven over the bridge, the bricks still remaining on the footpaths; with the total load, equal to sixty-four pounds per superficial foot, the deflection in the centre was 7½, and on the removal of the load the permanent set was found to be 10".

As to the design of this important bridge, our readers will naturally judge of it for themselves, with the aid of the illustrations we present. We may, however, venture our own opinion that, as a civil engineering work, it shows more regard to recognised principles of architectural design than we have been accustomed to. Indeed, it aptly illustrates the conjunction of engineering and architectural skill which we have treated of in another column. The design of the piers has evidently been carefully studied, and carries a very elegant proportion. We ask our readers to note the treatment of the cast metal work, either in its ensemble or its details. The piers being constructed of castings, it is no small merit that they look so. As compared with other bridges of the same ambition as to design, it is also interesting, and—to the younger members of the profession—instructive, to notice that the metal work which performs the actual work of support and construction is also that which produces the external effect of the design. In a suspension bridge of this class, this is really almost a unique merit, for, as our engineering readers are aware, the real supporting piers which carry the chains in most bridges are made to look slightly only by casings of more or less elaborate design.

Messrs. Ruston & Co., of Prague and Vienna, were the general contractors for the bridge, and the whole of the ironwork was made in Austria. The steel suspension structure was made in Sheffield, and supplied and erected by Messrs. Howell & Co. The Emperor of Austria has awarded to Mr. Ordish the large Austrian gold medal of Arts and Sciences, and to Mr. Wessely, the resident engineer, the Austrian Gold Cross of Merit.

**OUR RAMBLER****AT THE NEW INDIA OFFICE.**

OUR Rambler—who, we hope, may become a very familiar acquaintance of our readers, and in whose company we trust they will enjoy many not uninteresting excursions—does not desire that we should say more in introducing him than this, that he is passionately fond of visiting places and scenes where works or buildings, drawings or paintings, men or things such as our readers may like to hear about, are to be found. What he sees he will plainly describe; where public interests call him, he will go; and where he thinks that public interests do not call him, no invitations will induce him to come. The papers which follow his name may possibly be so varied in subject and in treatment as to suggest that more pens and more pairs of eyes than one are at his disposal; but in this at least he will always be consistent—the visits he narrates will always be real ones; the things he describes will always be painted as he actually saw them, and not as he may be asked to suppose they might, under more favourable circumstances, be seen; and his accounts may be relied upon as *bona fide* narratives.

For several years past a large pile of buildings has been slowly rising in the neighbourhood of Whitehall and the Park, which most persons have described, not without truth, as 'the new Foreign Office,' by Mr. Gilbert Scott; but, like many statements that are loosely made and carelessly repeated, this is only part of the truth, the fact being that the new building contains not only the Foreign Office, but also the India Office, and that in fact these two buildings form but part of a greater block (obviously incomplete) of Government offices; the prosecution of which, it is understood, is about to be energetically proceeded with.

The buildings at present erected may be approximately described as forming nearly two sides and one end of a rather irregular oblong block. One end of this block is built, and is picturesquely broken at the north-west angle by the tower and semi-circular corner with which every one who occasionally walks in St. James's Park must be familiar. The opposite end remains to be completed, and the sides to be prolonged. In fact at the present moment the peep from King Street into the quadrangle is anything but striking; toothings, unfinished gables, and all the preparations for one day resuming work on an incomplete building which we familiarly see when a church has been carried up minus its towers, being from that side unpleasantly conspicuous. Towards the Park the building may be regarded as nearly if not quite brought to its final condition.

The India Office was confided by the Council of India to their architect, Mr. Matthew Digby Wyatt; and the problem he had to solve contained more conflicting and perplexing conditions than have often combined in a work of art.

The building was to be the seat of the administration of almost the wealthiest country on the globe, yet a mere office for transaction of business; palatial, without a single vast hall or state suite of rooms; business-like, yet not inferior to the dignity of our Indian Empire. Further to complicate the difficulty, the site was not too ample, and not lighted on all sides, and the opportunities for original architecture are all internal, as *the exterior was entirely the work of another architect*. That a failure, or at best a partial success, should have been the result, might well have been anticipated; and it is no ordinary praise, and marks Mr. Wyatt as no ordinary artist, to say the building is a brilliant success; that, having accepted this programme, he has so worked it out that it is a specimen of skilful disposition of plan and of structure, and an example of good Italian Renaissance, freely yet learnedly treated.



The India Office occupies the whole south frontage—that towards Charles Street—at present built. The plan of building may be very nearly represented by a capital P, only drawing the loop square instead of round. The stem of the letter will then represent the Charles Street block, the top of it the Park front, the open part of the P will stand exactly for the famous 'Sultan's' quadrangle.

Upon this simple outline the architect has proceeded with such a lavish expenditure of his skill in planning as to provoke a vast number of difficulties, of which, however, each one has been fairly met, and fully overcome.

Our Rambler, led by a guide whose means of obtaining information were the best possible, while his good nature in giving it was inexhaustible, entered the building from the quadrangle. The public entrance, at a lower level than that of the corridor of the ground floor, introduces the visitor at once to a vestibule nearly 40 feet square, the principal architectural features of which are four groups of marble columns (each group consisting of four shafts) supporting a coffered ceiling. The central panel of this ceiling is worked up into an octagonal groined vault, crowned with a lantern; and here, at the very outset, a specimen of the architect's method of giving apparent height by leading the eye upward meets us. Throughout the building the marble shafts, of which many are of British marbles, are surmounted by capitals in dark stone, avoiding the shock to the eye often felt where a white or very light-coloured cap is popped down upon a dark marble shaft. Here, as elsewhere, use has been rather fully made of naturally coloured materials, but polychromy has gone no further: the India Office must of all things look business-like; and arabesques, fresco, and mosaic are matters of luxury. Two charming marble *chêminées* decorate the sides of this vestibule.

Before mounting the short straight flight that leads up to the ground-floor, our Rambler was led down into the basement; a clean, airy, roomy construction, splendidly dry and solid, and with a great deal of sagacious contrivance in it. Here is the purveyor's department, with a large kitchen, scullery, cellars, larders, and other appurtenances; several rooms for resident servants and others; the heating, the printing department, the carpenter's shop; but, above all, the storage of records. Fireproof throughout; partly vaulted, and partly covered on the 'Fox and Barratt' system, which has been used on the upper floors; this basement, not lofty, but excellently suited to the purpose, is fitted up with what look like the iron skeletons of wine bins or book shelves, for records (books and papers). These require to be dry, admitting air all round the records, no higher than a man can reach, and to be accessible throughout. Mr. Wyatt's frames have stiff angle irons for posts: braced with flat iron, and fitted with shelves of corrugated iron, they are strong, simple, and workmanlike. The more sacred deposits of valuables have two or three doors, each with its own locks; the outer one solid, the next pierced with openings, and the innermost an iron grating.

From the basement a hydraulic hoist ascends to the top of the building for the purpose of supplying coal to every floor.

Returning to the entrance hall, we were taken over the ground and upper floors. The departments to which the public require immediate access are near the entrances, and on the ground floor. The principal one (accountant's office) is, in fact, no other than a large, well-arranged banking-office, with its own cellars and strong-room. In the most remote, instead of, as is more usual, the most accessible corner, is placed the elaborate state staircase. At the foot of this stands Flaxman's fine statue of Warren Hastings, brought, like other statues here displayed, from the old India House, and here well lighted and well framed in an architectural recess.

This staircase, which is in stone, exemplifies fully the principle that Mr. Wyatt has followed in all the staircases. The stairs and their balustrades are kept within and independent of the larger architectural features which support the vaults and ceiling. This staircase is covered at the sides by a singularly disposed and somewhat wide-spreading flat ceiling, its centre being occupied by an octagonal dome, pierced by lunettes and having a central light. This dome is lavishly decorated with slightly conventionalised figures and rich foliage, excellently modelled in plaster. The State staircase gives access, with all suitable preparation of ante-room and lobby, to the Secretary of State's Room, an elegant, well-designed, oval apartment, about 26 feet long. The public may like to know that the room where the destinies of so many of our swarthy fellow-subjects are controlled by the Duke of Argyll is marked externally by the semicircular angle we have more than once alluded to. A private staircase descending from this apartment to an external door gives the Minister means of ingress and egress without observation.

The next most remarkable room is also on this (the principal) floor. It is the Council Room, and is square in plan, measuring 30 feet each way. Here, as in several other apartments, the walls are quiet in treatment, almost to plainness, but the finely panelled ceiling is connected with them by a deep cove pierced on the outer side by three openings; and here the quadrangle, the great glory of the India Office, best presents itself. The Council Chamber offers a most beautiful series of architectural pictures of it through its window openings. Nowhere has an architect such complete command of effect as when he can arrange that an interior shall certainly be seen from one point, and this advantage Mr. Wyatt has grasped and made all his own. The quadrangle at its highest part equals in size that of the Royal

Exchange (measuring 62 feet by 113.6 very nearly); but, being subdivided into a greater number of parts, it appears far larger. At the level of the ground and main floors a loggia of five bays and two small bays runs across each end, the sides having seven full bays and two small ones each, and the dimensions within the loggia being 60 feet by 90. The architecture recalls the work of the best Italian masters—such as Bramante—and enough use of coloured materials has been made to please the eye in an open-air quadrangle—hardly enough, we think, for a quadrangle enclosed, as all the world knows this now is, by a glass and iron roof. The ceilings of the loggias are in coloured tiles, the shafts of the columns in polished granite, and a frieze, with slightly coloured decorations, not in relief, runs round below the principal course. The effect of this is somewhat marred by the weather stains upon the stone, which, now that the quadrangle is become a vast hall, ought to be removed.

The glass roof over this court-yard is startlingly original. It is a skeleton panelled ceiling, with only the ribs and the centres of each coffer marked, and the flat ceiling itself removed, displaying above it an iron roof, glazed throughout, and abundantly ventilated. The lines which thus give the idea or symbol, so to speak, of a ceiling, are in metal, and worked into the construction of the roof, which, it may be well to add, Mr. Wyatt worked out himself, and not by deputy, as many architects are forced to do.

And here we must draw our account to a close, though our ramble extended over the entire building, through many rooms designed for and devoted to many different purposes. Everywhere there was the same abundant evidence of painstaking care and skill. Not an inch of space is lost, not a chance of getting light is thrown away; the corridor next the Foreign Office, which has a glass ceiling decorated by ornamental iron gratings, being the most noteworthy instance. Warmth is well diffused throughout; and at every corner, just out of sight, but conspicuously within reach, is to be found something like a gigantic leathern Catherine wheel. This is the fire hose, coiled up snug in a neat recess provided for it, but ready for instant use.

The main points of the building are, in our opinion, these—the importance of the corridors, and internal spaces abutting on the corridors, the staircases, the quadrangle, and the principal entrance. Varied as they are, these features all have a common character, and they all bear marks of that freedom in subjection to strict rule which is the secret of spirited Renaissance architecture. In many places the work is elaborate to the last degree, and narrowly perhaps escapes the character of appearing laboured; but it does escape. In the plainer portions, which depend upon proportion and correctness mainly, the eye is charmed and satisfied. A remarkable number of 'points of view,' or little pictures, occur—arranged by the architect as such, and purposely studied. At very many points the eye escapes upward—now up a staircase, now into a charmingly groined vault, with a series of star-like openings admitting light—now into a recess. In walking through, the abundant and equable distribution of light is so satisfactory that it was not till the difficulties, structural and otherwise, in the way of obtaining it were pointed out, that we became aware of the great pains taken to secure light.

Our last visit was to the drawings of the building; and they are truly remarkable. Every portion of the work was drawn out most conscientiously: not a moulding but was drawn full size; not an enrichment (and enrichments occur profusely throughout) but was also drawn full size—not merely sketched, but *bonâ fide* drawn. Most of them were then modelled, and carved or worked from the model. It may serve to give the initiated some little idea of the labour, time, and pains expended, if we say that there are supposed to be about 1,500 sheets of general and working drawings; not a few of them manuscript drawings and studies of the architect. For the benefit of the uninitiated we may add that a usual average size of these sheets seems to be two feet by four, which mounts up to 12,000 superficial feet, or more than a quarter of an acre of fine paper covered with draughtsmanship! That there was practical sagacity, as well as prodigal devotion of time and labour, the whole building evinces thoroughly; and in nothing is this more shown than in the fact that, if we are rightly informed, the bill of extras was one of the smallest ever known for a work of such magnitude. Messrs. Smith and Taylor were the contractors, and their work is thoroughly well done.

In his walk home the Rambler, musing on what he had seen, was forced to admit that, though that small section of Gothic architects who pride themselves on being able to see no beauty in Renaissance would probably not have felt the gratification he had felt, the public generally would not share their feelings. The work is good Italian Renaissance in its essential elements, and yet so freely treated as to be thoroughly original, and eminently English in those points where English habits of building differ from the Italian. It is full of picturesque beauty, as well as of care and symmetry. It appears impossible to find a corner where everything that required to be provided for has not been foreseen and arranged. If the building errs, it is on the side of too great elaboration; it even seems fairly possible that here and there as good a result might have been obtained with a less expenditure of means. But with all this care, spirit, life, and grace are not lost or overlaid; the work is a work of genius most patiently and conscientiously worked out, and constitutes a large item in a long series of claims on public gratitude, which all will be happy to see appropriately recognised.

## SANITARY ENGINEERING.

A COURSE OF FIVE LECTURES ON MAIN SEWERAGE, DRAINAGE, AND WATER SUPPLY, delivered in the month of November, 1868, before the Royal Engineers, at their establishment, Chatham, by ROBERT RAWLINSON, C.B., Civil Engineer, F.G.S., &c. &c.

## I.—INTRODUCTORY LECTURE—METEOROLOGY.

In the construction of many important works, engineers frequently find that they have to contend with the hostile action of the elements. Consequently it is not desirable merely, but absolutely necessary, that the technical education of engineers should include a study of METEOROLOGY—the science which (in addition to other phenomena) treats of the evolution of heat and moisture, of evaporation and condensation, of wind and rain, of ocean waves, river currents, and land floods.

For the purposes of this lecture, it appears desirable to omit detailed notices of abstruse meteorological questions concerning the origin of storms and electric phenomena, such as the formation of cumulous clouds, hail, tornadoes, water-spouts, &c. Considerations such as these, which are powerfully affected both by general causes and by local influences, would, on the present occasion, have a tendency rather to bewilder than to give information. To certain specific facts, accordingly, connected with the science of Meteorology, this introductory lecture will be devoted; and these facts will be set forth in simple language, my purpose being to lead you onwards, from first principles and elementary facts, to those conclusions which eventually I shall place before you.

This earth consists, on its surface, of ocean and dry land, the relative areas of the two being about in the proportion of 7 to 3. Assuming, therefore, the entire surface of the earth to be 200 millions of square miles, then the ocean has an area of about 140 millions of square miles, leaving an area of about 60 millions of square miles to the dry land.

Thus constituted at its surface, the terrestrial globe is enveloped with an atmosphere composed of oxygen and nitrogen gases, nearly in the proportion of two atoms of the latter gas to one of the former; and in combination with these two gases there also exists a fractional percentage of carbonic acid gas. In this atmosphere water is present in the form of vapour.

The one main source of heat to the earth and atmosphere, and probably of electric action also, is the sun. By the action of the sun, consequently, is produced all those phenomena of Meteorology which we have to consider.

Again, that great reservoir of water, the salt ocean, contains the prime fountain head of all fresh water, wherever and however it may be present, either upon the surface of the land, or within the stratified crust of the globe. And it is through the process of evaporation that all 'sweet' or fresh-water is obtained from the salt-waters of the ocean.

If the heat emitted from the sun were, year by year, uniformly the same, there would, necessarily, also be an annual uniformity of evaporation; and this would imply a prevalence over the entire surface of the globe of a corresponding annual uniformity in precipitation of vapour in the form of dew, snow, hail, or rain. On the other hand, the reverse of these statements is equally true: that is to say, irregularity in the emission of heat from the sun must be attended with a corresponding irregularity in the volume of ocean-water evaporated, which last irregularity must also in the same degree affect the volume of fresh-water obtained by precipitation. Whether the heat of the sun be year by year uniform in its degree, or whether it is periodically subject to fluctuating variations, it may be assumed as certain that the heat-giving action only varies within certain limits, and so conforms to every other known operation of nature. For, taking the entire earth into our consideration, we observe the grand phenomena of the elements obeying a law which, out of apparent irregularity and inequality, brings forth practical equality and order—just as the pendulum ever beats true time in its swing, however great or however slight be its motion. Such is the variety that pervades nature's working; and such may be the variety in the transmission of solar heat to this earth; that so, in a series of years, an average temperature will be determined, to which may be referred all those complex and wonderful changes that are perpetually taking place on the surface of the globe.

The leading facts to be recognised by engineers are these: Evaporation from the ocean being caused by the heat of the sun, necessarily depends upon it; and in proportion to this heat is the volume of water that in each year is evaporated. The vapour, whatever its volume, that is carried up into the atmosphere, must again be precipitated in the form of fresh water. These grand evolutions of the elements can be brought under control by no human power; and, therefore, engineers should consider themselves bound to act under the guidance of a knowledge of their true character, and with a consciousness that their works must be subject to them.

While mindful of the existence and the operation of the law of compensation, engineers will feel that it rests with them to provide against the diversified variations and violences of natural incident that mark the course of time. Engineers, in other words, have to make provision to meet conflicting contingencies, such as droughts and floods. We will proceed to consider certain of these which a study of meteorology will press forcibly on their attention.

Experience has demonstrated that in different countries and climates the annual volume of rain which falls is subject to very considerable variations. In the equatorial regions, for example, where the sun's heat is greatest and most powerful, evaporation is necessarily most copious and the rainfall is heaviest; and, as we approach either pole, with decreasing solar heat evaporation decreases and the rainfall exists in a proportionately diminished volume. But in no region of the earth's surface does evaporation cease. Evaporation, vary as it may, is general and constant. It takes place incessantly, wherever the ocean extends. Even icebergs and the broad floes of the polar oceans evaporate. In tropical regions as well as in the colder zones of the earth's surface, vapour is constantly passing into the atmosphere, again to be condensed and to become fresh water. And at all temperatures (boiling or freezing) this act of evaporating water implies the absorption of latent heat, which heat is again given out, some-

times accompanied by lightning and thunder, when invisible vapour is condensed into water, whether as hail or rain.

Again, the fall of rain is not only determined by the amount of invisible vapour which is carried up into the atmosphere, but it also is materially affected by terrestrial causes, such as latitude, the relative position of land and water, plains, valleys, and mountains, which all act and react upon the process of precipitating vapour into rain. This may be illustrated simply by what takes place year by year in our own country. In England the annual average fall of rain is from 30 to 36 inches. The distribution of this rainfall, however, appears to be singularly arbitrary, as the average fall of rain in one portion of the Lake districts is not less than 150 inches in each year; and even 300 inches of rainfall has been experienced at Styhead. In contrast with this, on a portion of the eastern coast of England the average yearly fall of rain does not exceed 20 inches; and, in a dry season, it sinks down to 14 inches. In the Thames valley, the average yearly fall is from 25 to 30 inches. On the western coast of England, as also on the southern, the rain which regularly falls year by year, considerably exceeds in volume the rain fall on the eastern coast. This result is produced by a greater local prevalence of the south-west wind, which brings in the vapour-laden atmosphere from the Atlantic Ocean (influenced by the Gulf-stream), and the mountain ranges; so that much of this vapour, as it sweeps towards and over the backbone ridge of our island, becomes condensed, and precipitates heavy rains in the districts that lie towards the south and the west.

Again, during the actual descent of the heaviest rain over any area of fall, the process of evaporation is maintained in operation. Recent researches have led to the discovery that, in England, the amount of constant evaporation is greater than previously had been supposed. There do not appear to exist any certain data which may be accepted as determining accurately the comparative amount of constant evaporation in the tropics. But, if we take the valley of the Thames, which contains an area of about 5,000 square miles, and where the yearly average rainfall amounts to 25 or 30 inches, here we find something nearly approaching to two-thirds of the entire fall of rain evaporates and passes again, in the condition of invisible vapour, into the atmosphere. That is to say, in other words, about two-thirds of the entire volume of the rain that falls upon the area of the Thames valley, and is there measured in the rain-gauge, is not measurable in the river or in any of its numerous springs and feeders; nor could this large proportion of the whole yearly rainfall be admitted by an engineer into his calculations for any works to be constructed by him for water-supply in the valley of the Thames. He could really rely only upon one-third of the true rainfall, and of that third one-half would pass away in floods, and the other half by perennial river flow. Once more: take the valley of the Lee, a tributary of the Thames, having an area of 500 square miles. Here four-fifths of the rainfall is not measurable to the river—a fact which has been determined by accurate gaugings taken during the last twenty years. It has been demonstrated that four-fifths of this rainfall passes away through re-evaporation.

I now desire to direct your attention to some important considerations in connection with 'averages.' In questions of water-supply engineers have been in the habit of considering that they have to deal with averages. It is necessary that you should distinctly understand when and how averages are fallacious. An average is useful and valuable when an appeal is made to it to indicate the general difference that exists between one district and another district. But if averages of annual rainfalls in any particular locality, for however long a period taken, should be accepted and adopted as giving the true basis upon which either sewers or works for providing a water-supply should be projected, subsequent experimental test of use and supply would be certain to show that the engineering works had been designed and built upon misleading data. The engineer, in such a case, would find that the averages, to which he had trusted, had misled him. This arises from the fact, that his averages had made no provision for encountering and dealing with occasional excesses—excesses, probably, which may occur only at long intervals, but which, when they do occur, are both sudden in their appearance, and violent in their operation. Averages extending over a period of from fifty or more years would be required, in order to secure their including and accounting for occasional excess; and even then an average would fail to indicate the amount of precaution that would be required to meet and provide against the recurrence of a maximum excess.

The average fall of rain for the entire surface of the earth may be assumed at 150 inches; and if we apply the rule of  $\frac{1}{4}$  less for a dry season, and  $\frac{1}{2}$  more for a wet season, the dry season would give 100 inches, and the wet season 200 inches. If any such variation can be even approximately settled, we may then conclude that there is a corresponding annual variation in the heat and evaporating power of the sun.

Large districts of the earth's surface are rainless, and other districts are exceptionally wet. Some mountain ranges are so lofty as to prevent vapour passing over, whilst other ranges and groups of mountains act as condensers, attracting the moisture-laden atmosphere around to precipitate it in almost unceasing rain. Africa presents examples in the Great Desert for drought, and in the sources of the Nile for rain.

I must here advert to another fact that bears upon our inquiry at the present point. I constantly hear assertions to the effect that something has taken place in the course of events, which has caused an alteration in the character of the seasons. It is certainly true that cultivation modifies climate over tracts that have been cultivated; but it is asserted, further, that in various parts of the world, through cutting down forests, and in consequence of certain other operations, the works of man, climate has been so far modified as to have its character absolutely changed—'The Thames is not now frozen over as in times past,' &c. If by assertions such as this it should be intended to be implied that any works of human hands have actually altered the current course of nature, I must meet every such allegation with a positive denial. The most stupendous of human works can affect only the comparatively small and narrow space of the earth's surface upon which they may have been executed. Evaporation has only an indirect and incidental reference to the land—its real dependence is on the great ocean, and the infinitely greater sun. And so, while

man may exert an influence upon climate over the little area of his operations, his works can avail nothing to affect the grand features of nature, or to disturb the majestic scale on which she accomplishes her purposes. Meteorology is unaffected, and must continue to be unaffected, by human agency. The powers of man can never seriously modify sunshine, cloud, rainfall, or climate, as these have reference to the world at large. All statements, therefore, which would assign cosmical atmospheric effects to the cutting down of forests, to land drainage, cultivation, and such like agencies, must be treated with practical disregard. The climate of the world is not altered, cannot be altered by its human inhabitants. Floods will continue to occur in time to come, as they have occurred in time past; it will be precisely the same with droughts, and other natural phenomena. These are possible or probable incidents for which the engineer must make provision; or, rather, they are incidents certain to recur, the conditions of their recurrence, and the periods also, alone remaining uncertain; and, as such, the engineer must regard them. Indeed, he must learn to comprehend the elements when in their wildest moods, and to be prepared to encounter them when in such moods as at once his duty and his privilege. Hence, when an engineer finds himself placed in some new country where he is required to erect works, if it should be possible for him to ascertain that in that country, at certain periods of the past, the elements had exhibited strange and anomalous excesses, he may rest assured, unless some cosmical change has intervened, that no decided and permanent modification of climate has been produced by whatsoever cause, which has power to prevent the recurrence at some time or other of similar excesses. If there have been devastating floods, similar excesses must be prepared for; or engineering works built in disregard of such warnings may not be competent to withstand meteorological excesses, but will be liable to serious damage: such works may even be swept away before the eyes of their constructors. About two years ago this truth was exemplified under my own observation in a remarkable manner. At that time I was instituting official inquiries concerning the pollution of rivers in the West Riding of Yorkshire. Persons who appeared before me for the purpose of giving evidence connected with the inquiry, and who were questioned on these points, were unanimous in rejecting the idea of there occurring any such floods in those rivers as were well known to have occurred there forty or fifty years before. They were positive in their evidence that no such incidents could possibly ever take place again; and the reason for so decided a conviction they declared to rest on the changes that had (as they considered) unquestionably been wrought in their climate by drainage and cultivation. Before my inquiry had, however, been brought to its close, while I was sitting at Halifax a heavy rain commenced, which continued for two days, and it proved to be at least as serious in its effects as any of its predecessors. The whole range of the valleys of the Aire and Calder was flooded; streets in towns were laid deep under water, mills and houses were inundated, bridges were washed down, cattle were drowned in their pastures, and human lives were also sacrificed; and the losses inflicted upon property in the district, arising out of this two days' rain, were variously estimated to amount to from half a million to a million sterling. Here was a startling practical comment upon the popular theory, that climate and rainfall had been subjected to fresh conditions through the intervention of land draining and cultivation.

While thus the truth remains that, on a grand scale, man is powerless to affect the elements, observant care and forethought may accomplish much to protect property from such injuries as are occasioned by sudden but natural occurrences. Had the local authorities been careful not to obstruct and ill-use the streams, and had they as carefully avoided the erection of various structures by which the free course of flood-waters was necessarily impeded, the valleys of the Aire and Calder might have been saved from the most serious consequences of the sudden heavy rainfall to which I have just adverted. In one great establishment in the Calder valley, where the flood-waters had risen four feet above the mill-floors, and had submerged carding engines, looms, weft, warp and cloth, I was informed by the proprietor that this was the fourth occasion of the recurrence of a similar catastrophe. And yet nothing had been done, and apparently no effectual course of action was in contemplation, which might anticipate another flood, and prevent a fifth destruction of a similar character.

(This Lecture will be completed in our next number.)

## THE LATE REV. J. L. PETIT, M.A.

BY ALBERT HARTSHORNE.

THE literary and archaeological world has experienced a great loss in the lamented and unexpected death of the Rev. John Louis Petit. He was son of the Rev. John Hayes Petit, by Harriet, daughter of Mr. Astley, of Dukinfield Lodge in Lancashire, and was born at Ashton-under-Lyme in that county, May 31, 1801. The family is, as the name implies, of French extraction, and has its origin from the 'Petit des Etans,' of Caen in Normandy. The revocation of the Edict of Nantes was the cause of their removal to this country, where the immediate ancestor of the present family was a brigadier in the army of William III.

Mr. Petit was educated at Eton, where he acquired such distinction as to become a contributor to the *Edinburgh*, in conjunction with Præd, H. N. Coleridge, Moultrie, C. H. Townshend, and other men of high mark. From Eton he went to Trinity College, Cambridge, where he had a successful career, and took his B.A. degree in 1823, when he was twenty-fourth senior optime in the mathematical tripos, the same year that Airey, the Astronomer Royal, was senior wrangler, and the year before the classical tripos was established.

It may be almost said that he began sketching as soon as he was

able to hold a pencil. His early drawings in pencil and Indian ink are very delicate and correct, and the vast number of sketches which he made through a long series of years are evidences of his zeal and energy. It was with no selfish motive that he devoted his time and thoughts to art; his numerous and valuable publications show a masterly knowledge and appreciation of the subject, and are replete with illustrations from his own drawings, while his graceful language added to his facile pencil make the perusal of his works as much an intellectual as an architectural treat.

From the very first his favourite subjects were old churches, and he was well acquainted with, and had sketched, the best examples in England before travelling much on the Continent. His first extended tour was in 1830, and his first published work on Church Architecture, which appeared in 1841, amply testifies to his labour in France, Germany, and Italy, and his thorough acquaintance with the matter.

The foundation of the British Archæological Institute at Canterbury in 1844, at which he assisted, opened a wide field for his exertions, and the pages of the Institute Journal from that time are well stored with his valuable contributions to architecture, all profusely illustrated from his own drawings.

Among these may be mentioned an Architectural description of the beautiful church of Tong, published in 1845; in the following year appeared an account of the Cathedral of St. German's, in Peel Castle, in the Isle of Man; and 'Remarks on Beverly Minster.' In 1847, Architectural notes in the neighbourhood of Cheltenham, a valuable local contribution. In the same year 'Remarks on Wimborn Minster;' and in 1848, 'Remarks on Southwell Minster,' with copious illustration worthy of such a subject. In 1849, 'Architectural Notices relating to Churches in Gloucestershire and Somerset.' In 1850, 'Architectural Notices of the curious Church of Gillingham in Norfolk,' with complete illustrations; and in the same year appeared a learned account of Sherbourn Minster. In 1852, an Account of Brinkburn Priory; a paper upon Coloured Brickwork near Rouen, and careful notices of Ecclesiastical Architecture in France. In 1853, the 'Architectural History of Boxgrove Priory.' In 1858, 'Architectural Notices of Buildwas Abbey.' In 1860, on the Architecture of Shiffnal Church. In 1861, Notes on Circular Churches, besides Notes on Irish Abbeys, on Mediæval Architecture in the East, and many others. Mr. Petit's principal work, 'Architectural Studies in France,' which appeared in 1854, is a learned production, full of sound judgment, and embodies his extensive range of observation in that country. It is charmingly illustrated by woodcuts of the finest kind, and by fac-similes of his own anastatic drawings. His 'Account of Tewkesbury Church' is one of his best architectural works, and his lecture on 'Architectural Principles and Prejudices' is conspicuous from its beauty of thought and language.

But it was as an accomplished artist that Mr. Petit was best known. It is impossible to speak too highly of the beauty of the vast number of sketches from nature that he has left. With a correct eye for proportion and colour, and a rapid hand, he invariably finished his drawings on the spot, and the power and breadth that they display have been seldom equalled, for he represented a school that unfortunately has had but few followers.

In the presence of such a number it is indeed difficult to particularise any of them; but those of Lichfield, Tewkesbury, and St. Paul's may be mentioned as perhaps among the finest; and the sketches from Italy and Greece are from the hand of an acknowledged master; and some striking drawings—the result of a tour in the East and on the Nile in 1864-5 can hardly be passed over in silence. They each alike display an unusual vigour of handling and an intimate knowledge of colour and perspective. His numerous drawings of shipping are admirable productions; the etchings on copper which have appeared in most of his published works are from his own hand, and are full of delicacy and refinement; and his drawings in pen and ink are well known for their great boldness and effect. His paintings in oils are, comparatively speaking, few, and are not generally known; they partake much of the character of Turner, and have considerable grandeur of colouring.

Mr. Petit was a Fellow of the Society of Antiquaries, honorary member of the Institute of British Architects, a member of the Archæological Institute, and of many other learned and archæological societies; a member of the Athenæum, a Governor of Christ's Hospital, and a liberal supporter of very many charitable institutions. That he was a scholar of refined taste is evidenced by his writings; and his good deeds bear ample testimony to the benevolence and generosity of his disposition. Those who had the advantage and privilege of his intimacy mourn the loss of a genial companion, and of a kind and constant friend; and it will be long before the void can be filled which the sad event of his death has occasioned. He entered into his rest December 1, 1868.

## ROYAL ACADEMY PRIZES.

ON Thursday, December 10, the Royal Academy held its annual distribution of prizes, and considerable interest was excited by the circumstance that this was the last time that this ceremony would take place in the present building, and also by the competition for the travelling studentship, for which two out of the competing works—viz., 'The Last Song of the Girondins,' and 'The Day after the Funeral,' the former by Mr. Calthrop, and the latter by Mr. Holl, a son of the engraver—were works of mere

than average merit. The students and visitors having proceeded to the lecture-room, and the President and members having taken their seats, the various prizes were then distributed. The travelling studentship was awarded to Mr. Holl, and the announcement was received with much applause. The prize for the painting from the life went to Mr. Stocks, the clever son of Mr. Lumb Stocks, A.R.A. Mr. Britton received the prize for the best drawing from the antique; whilst a lady, Miss Aldham, carried off the copying medal.

This part of the ceremony being concluded, the President addressed a few remarks to the students. He informed them it was the last time they would meet in that room for such a purpose, and enlarged upon the advantages which would accrue to the students in their future home. He further urged them to prosecute their studies with ardour and attention, as they might expect in future a greater amount of competition, arising out of the establishment throughout the country of so many local schools of art. After a few other observations he closed his speech, and the proceedings terminated.

Later in the evening the members of the Academy assembled in Willis's Rooms, to sup together, in celebration of the centenary of the Academy's foundation. Several able and eloquent speeches were made during the course of the evening. The President, in proposing the toast of 'Success to the Royal Academy,' took occasion to express the hope that the members would endeavour to enter as good an appearance as possible at the first exhibition at Burlington House. The festivities were prolonged to a late hour.

On the same evening the students held their annual supper at Simpson's, and on this occasion over a hundred students, past and present, were assembled. There were also present several visitors, among whom we noticed Messrs. Marks, Prinsep, Wynfield, Montgomery, Rankine, &c. The usual loyal and complimentary toasts were duly proposed and acknowledged, amongst them being the toasts of the evening, the successful and the unsuccessful candidates, the former responded to by Mr. Brock, and the latter by Mr. Calthrop. The proceedings were enlivened by the delivery, by some of the students, of songs, humorous or sentimental. The company broke up shortly after one. The following is a full list of the awards of the evening:—

Restoration from the antique . . . . .	Mr. Brock.
Travelling studentship . . . . .	Mr. Holl.
Drawing from the life . . . . .	Mr. Haines.
Painting from the life . . . . .	Mr. A. Stocks.
Drawing from the antique . . . . .	Mr. W. Britton.
Model from the antique . . . . .	Mr. Brock.
Premium drawing . . . . .	Mr. Westlake.
Copying medal . . . . .	Miss Aldham.
Architectural travelling studentship . . . . .	Mr. H. Marshall.
Perspective and sciography . . . . .	Mr. Block.

ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

The Southern Thames Embankment.

Although the Embankment on the Surrey shore differs from that on the Middlesex, in not being one of the lions to which eminent personages and foreigners of distinction are introduced, it is an undertaking of great magnitude, a valuable public improvement, and a very interesting engineering work; and although it is not so elaborate and costly a structure as the Embankment of the northern side of the Thames, the fact of the new St. Thomas's Hospital being built on the land reclaimed by it from the foreshore, and opposite to the Houses of Parliament, gives an interest to this part of the river second to no other portion of its course.

The new roadway at the back of the hospital, from Stangate to Vauxhall, will be shorter by above 1,000 feet than the present tortuous route through narrow back streets, and will afford very great accommodation for the heavy traffic from Nine Elms to the City and Southwark, as well as the general light traffic, by supplying a good road, and reducing the distance so much.

As an engineering work the southern Thames Embankment does not offer so many examples of special construction (such as landing stairs, water gates, &c.) as the northern, but may be said to be an almost unbroken length of river wall from end to end, except that there is a landing stairs at Westminster Bridge for small boats, and the Lambeth steamboat pier, which will be modified to suit the new state of things. There are four openings in the new river wall above Lambeth Bridge, for entrances to private docks, &c., three of these having lock gates. The fourth is a public draw dock from Broad Street down to a barge bed on the foreshore in front of the wall. The road and footways are carried across these openings on cast iron girders and brick jack arches.

The special feature in which this Embankment differs from the northern is, that whereas the latter is continued for its whole length along the foreshore and in the river, the line of the southern Embankment runs along the foreshore from Westminster Bridge to Lambeth Bridge, beyond which it gradually cuts into the land opposite Millbank for a length of about 1,100 feet, the part outside the new wall being removed, and the foreshore dredged to low water mark, and the river consequently widened to the extent of 100 feet. The additional area given to the river will be nearly two acres. This space was formerly covered with rickety waterside premises and rotten dwellings, besides other abominations, such as bone and soap boilers' works, &c., which are now cleared away.

The wall itself may be said to be built of concrete faced with granite; for although it was designed to be a brickwork backing with counterforts at intervals, the spaces between which were to be filled in with concrete, these rick counterforts and backing were abandoned, and the whole constructed

in Portland cement concrete, in the proportion of six of ballast to one of cement by measure. By this system there will be a considerable saving in the cost of the whole work, amounting to several thousand pounds, and there is no doubt but that the concrete is as good if not better for the purpose required than the brickwork as originally intended. Some of the arches under the Westminster Bridge landing stairs, and also those under the boundary wall between the hospital and the river promenade, were constructed by M. Coignet in his *béton aggloméré*. The materials composing the *béton* are cheaper than the constituents of the Portland cement concrete (6 to 1), and when set, the *béton* is smoother on the face and looks better; but the labour necessary in mixing and moulding to the required form, by ramming, &c., over the centering caused the *béton* to be considerably more expensive than ordinary concrete, which was employed in the construction of the adjacent arches, and found to answer the purpose equally well, at about two-thirds of the cost.

Although it is intended to terminate this embankment at Gun House Alley, near the works of the London Gas-Light Company, we trust we may see it extended at some future day to Vauxhall Bridge.

Important Legal Decision.

A legal question of interest and importance to the architectural profession of Germany has recently been decided at Cologne. In illustrating a work describing the Cathedral of that town, the author, a Mr. Franz Schmitz, made use of and published certain drawings belonging to the 'Dombau Verwaltung' (or Executive Committee entrusted with the completion of the Cathedral), without authority or permission to do so. The consequence was that they brought an action against him for 'art piracy,' and judgment being given against Mr. Schmitz, all copies of his work which were found unsold at his publisher's have been seized and destroyed.

Opening of the Team Valley Railway.

The new line of railway from Newcastle to Durham has recently been opened for public traffic. In itself no very great undertaking, it becomes important when considered as part of the future main line from York to Edinburgh. This will not be the case till the further extension from Durham to Ferryhill is completed, which will probably take two or three years; but after that time the long and circuitous route by Leamside will be left principally for goods traffic, and the principal passenger trains will pass over the new line.

The portion already opened—known as the Team Valley—leaves the present main line immediately after crossing the far-famed High-level Bridge at Newcastle, and, turning sharply to the west, passes into a richly-wooded country, and at a short distance from Ravensworth, Lambton, and Lumley Castles, and from the fine old church of Chester-le-Street. From Newcastle to Chester-le-Street the line passes over level country; but, at the latter place, three deep valleys have necessitated viaducts of considerable dimensions—the largest consisting of eleven arches, each of 60 feet span and 20 feet rise. The extreme height of this viaduct is 90 feet. The arches in all three are semi-ellipses, the materials used being brickwork in lime for the piers, and in cement for the arches. The whole of the work is very plain, and without any particular architectural character; and, from the peculiar curve adopted in the arches, has by no means a pleasant effect—very different from the really grand viaduct on the old line at Durham. The stations are plain, but commodious, and, with the exception of the one at Gateshead, are of red brick. A new system of points and signals has been laid down at the junction with the main line at Gateshead, and was highly approved of by Captain Tyler, the Government inspector. The whole line has been constructed from the designs of the North-Eastern Company's engineer, Mr. Harrison Hodgson, Mr. Bailoy being resident engineer.

Poplar and Stepney Sick Asylum Competition.

The managers of this asylum district have now arrived at a decision on the designs which were received, on September 26, in response to their invitation. The competitors were Messrs. Giles & Bevan, Wilson, Bresssey, Hill & Fletcher, Worthington, G. G. Scott, jun., Blashill, Hammack & Lambert, Morris, Harstons, and Bracebridge. The estimates showed somewhat more than the usual diversity, ranging from 33,000*l.* to 72,000*l.*, no material difference in the amount or style of accommodation being apparent to account for so wide a difference. After having employed a surveyor to assist them in coming to a decision, the managers have accepted the design of Messrs. Harston as being the most suitable for their requirements, that of Mr. Wilson being placed second. The second competitor receives a premium of 60*l.* Those whose designs have not been selected will receive 40*l.* upon the condition that the drawings are to remain the property of the managers. There is, however, good reason for believing that this condition will not be insisted on.

As considerable interest has been expressed by the profession in the mode of payment proposed by the managers of the various poor law asylums now about to be established, it will be useful to note that the commission of 3½ per cent. upon the work, which is to be paid to the selected competitor in this case, added to the sum of 420*l.* which has been paid to the other competitors, will amount to near 4½ per cent. upon the anticipated cost of the work. This consideration, coupled with the fact that several pavilions would be all but exact copies of one model, doubtless influenced the architects invited in their acceptance of the terms proposed to them. The competition seems to have been conducted throughout with a creditable desire on the part of the managers to avoid unwise restrictions and to deal fairly with the competitors.

Rotherham Hospital and Dispensary Competition.

The particulars of this open competition have been issued. There are to be prizes of 75*l.*, 50*l.*, and 25*l.* for the three designs placed first, second, and third in order of merit. Amongst the thirty-three conditions of the competition (many of which are formed on the model of those generally adopted in the Metropolitan Asylum competition) the only clause referring to the payment of the selected architect stands as follows:—

'The successful competitor shall carry out the work for a percentage on the outlay, less 50*l.* of the prize sum.'



It will be obvious that this clause leaves it open to the hospital authorities to bargain with the architects for a rate of remuneration lower than that usually accepted by the profession, and that the result of this course would probably be to place the recipient of the first prize in a position which might be anything but successful. It is to be hoped that the authorities will, in their own interest, see the propriety of at once modifying this objectionable clause, so as to make it clear that they intend to pay the full usual commission of 5*l.* per cent. on the outlay, especially as the proposed cost of the building—4,000*l.* to 4,500*l.*—is so small that no repetition of parts can be anticipated. It remains to be seen whether any architects possessed of proper qualifications will notice this competition as it now stands.

#### Competition for the new Hôtel de Ville of Vienna.

The architects of all countries are invited to send in designs for a new Hôtel de Ville for the Austrian capital. The municipal council of the city offers twelve prizes, namely, four of 4,000 florins (about 400*l.*), four of 2,000 florins, and four of 1,000 florins. The jury is to be composed of five members of the council and five architects, Austrian and foreign, not taking part in the competition, under the presidency of the burgomaster or the sous-préfets; and, besides awarding the prizes, will draw up an approximate estimate of the cost of the best design and submit it to the municipal council.

When the council has accepted the plan to be executed, the author of it will be entrusted with the work on terms to be settled between him and the council, and he will be bound to make such modifications as the council may desire.

The prize plans will be exhibited publicly for three weeks, and remain the property of the municipality.

The conditions of the competition are as follows:—The plans are to be sent in to the municipal council of Vienna not later than twelve o'clock on the first day of September. The general plans are to be drawn to a scale of half an inch per *toise*; \* the views of the exterior façades and of the courts to a scale of  $\frac{3}{4}$  inch; and the chief details to the scale of two inches to the *toise*. The sections, details, dimensions, and descriptions are required to be very full and explicit. Full particulars, with plans of the site, are to be obtained by application to the Consulat Général d'Autriche, 21 Rue Laffitte, Paris.

The structure will be very large, consisting of four separate buildings, each containing four or five storeys. The following extracts from the programme will give an idea of the amount of accommodation required:—The number of halls and offices to be on the ground floor is more than forty, and amongst these are a public hall to hold at least 500 persons, with about 200 square yards of superficial area; a large office, with an area of 640 square yards; four other apartments of about the same size as the first-mentioned; and ten others, varying in area from 80 to 160 square yards. The plan includes, besides public halls, offices for all departments of municipal administration, residences for numerous officials and servants, stables, coach-houses, and offices of all kinds, nine apartments for libraries and record offices, a museum with an area of 1,000 square yards, a chapel, a suite of seven rooms for grand fêtes and receptions, covering, with the necessary offices, a space of 2,320 square yards, and a large hall for the municipal council.

## General.

The South Kensington Museum are now exhibiting daily, at the galleries overlooking the Horticultural Gardens, the Meyrick collection of armour, the Townshend bequest of British and foreign pictures, the collection of British arms and ordnance, naval models, and designs for fans, executed by female students in competition for prizes.

During the last twelvemonths, the number of houses erected in the parish of Chiswick has amounted to 52, an average of one per week. Building had been at a standstill in this parish for many years previous. For the forthcoming year, estimates for 500 houses are out.

It is reported that the Prince of Wales has taken Chiswick House, adjoining the Horticultural Society's Gardens, for his children.

According to a report recently read before the St. Nicholas Restoration Committee, Newcastle, it was stated that the Town Council had agreed to levy a voluntary rate of 3*d.* in the pound for the new works, in conformity with the plans and specifications of Mr. G. G. Scott.

Archbishop Manning has issued an appeal on behalf of the proposed new Roman Catholic Cathedral at Westminster. The site will cost 36,000*l.*, of which 15,000*l.* has been paid; the donations and promised subscriptions by the end of 1874 reach 14,000*l.*, and a deficit of 7,500*l.* remains. The style will be the Early English. Mr. Clutton is to be the architect.

The Company formed for building a bridge across the Straits of Dover, on the system of M. Boutet, being desirous of erecting a model bridge in or near London, have made an offer to the vestry of St. Pancras to build a bridge over the Regent's Canal near Gloucester Gate, at one-third less cost than any other system, and without interfering with the traffic.

The Building Fund for the new Infirmary at Kidderminster now reaches the sum of 5,400*l.* Nearly 7,000*l.* will be required.

The Society of Painters in Water Colours has resolved to cooperate in a scheme for the creation of a grand School of Fine Arts in the metropolis, and thus taking advantage of the legacy bequeathed by Mr. Slade for encouraging the study of the Fine Arts.

A Church Spire fell at Colchester on Monday last. The church is quite a new building, having been erected only about five years ago, at a cost of 5,000*l.*

A New Church has just been erected at Somers Town, London, from the designs of Messrs. Newman and Billings, architects. The entire cost of the church and schools adjacent is nearly 15,000*l.*

\* The *toise* of Austria is equal to six feet, and the Austrian foot is longer than the English in the proportion of 31,611 to 30,479.

The plan of imposing a sewer tax at Rotterdam, which lately gave rise to some disturbances, has been withdrawn by the municipality, and replaced by an increase in the port dues and trade licenses. The committee has, moreover, fixed ten years, instead of five, for the execution of the works connected with the junction in that town of the Moerdyk Railway with the Dutch and Rhenish lines.

Fall of a Bridge near Gateshead.—The bridge over the river Derwent has fallen. The accident has been caused by the strong and rapid flow of the river in consequence of the heavy rains.

Westbromwich Hospital.—The plans of Messrs. Martin and Chamberlain, of Birmingham, have been adopted. The site of the proposed building will be on the Lodge Estate, Westbromwich, in Edward Street, at right angles to Lombard Street, and the ground contains 6,000 square yards. It is hoped the excavations will be commenced in March. The building will cost between 5,000*l.* and 6,000*l.*

A New Gauge.—It is proposed, among the schemes for improving London traffic, to make an open railway, with a three-foot gauge, from Islington to the Moorgate Street Station of the Underground Railway.

Engineering Projects for Uniting Liverpool and Birkenhead.—Since the project of tunneling the Mersey, explained by Sir Charles Fox at a meeting held in Liverpool the other day, has been before the public, Mr. J. Patterson, the President of the Liverpool Chamber of Commerce, has received a communication from Mr. Grainger, proposing a scheme for increasing the dock accommodation and bridging the Mersey by utilising the existing sandbanks, forming, in fact, islands of docks and warehouses, and using the red sandstone, which forms indisputably the bed of the river, as foundations for the warehouses and for abutments of bridges.

We regret to hear that the restoration of St. Mary Redcliff is partially suspended for want of funds.

A new iron bridge, of light and elegant structure, has been erected at Sterne Mills. It springs from solid stone abutments, and is supported in the centre by two hollow iron columns.

The Contract for building the nave and aisles of the new church for St. Swithin's parish, Lincoln, was signed on Tuesday last, by Mr. Lovelee, the contractor, and the members of the Church Building Committee. The contract price for this part of the work is 4,295*l.*

The First Protestant Church on Spanish soil has lately been opened at Mahon, in the Island of Minorca. The municipality of Barcelona have offered the Protestant community the privilege of founding a church in that city.

Four Thousand Miles of Railway have been completed in Hindostan, and one thousand more are projected or commenced.

The restoration of the parish church at Kendall has been recently completed. The works have been carried out from the designs of J. S. Crowther, Esq., architect, of Manchester, at a total cost of upwards of 11,000*l.*

Fall of a Church Tower.—The new tower of the parish church of Moirans, France, has fallen to the ground, doing considerable damage to the roof and nave. The cause of the disaster was the elevation of the structure without means being taken to strengthen the base, which at last gave way beneath the additional weight.

New Baptist Chapel at Oakes, Lindley.—A new chapel has been erected at Lindley, near Huddersfield. The total cost of the building is 5,500*l.*

It is proposed to construct an iron promenade pier, similar to that at New Brighton, at Douglas, Isle of Man.

A Chapel Blown Down.—A new Wesleyan Chapel, at Littlemoor, Pudsey, has been blown down. The foundation stone was laid on May 2.

A beautifully-designed sarcophagus, of Greek style, designed by M. Baltard, architect, has been placed over the grave of Ingres in Père la Chaise. M. Broussieu's bust of the painter surmounts this work.

A Model Mortuary.—The Vestry of the parish of Marylebone erected a large public mortuary in the burial ground, Paddington. The building has been erected by Messrs. Temple and Forster, of London Street, Paddington, from drawings prepared by Mr. Browning, the Vestry Surveyor. In the interior, ventilation seems to have been a primary object, and decorous ornamentation also seems to have been well studied, as there is a row of four ornamental cast-iron columns down each side, which not only help to support the iron bearers fixed into the walls to hold shelves for the reception of a large number of dead bodies, but they also sustain the girders which uphold a very handsome roof, from the centre of which the room is lighted with gas on a new principle.

A Church in course of construction at Linière, in Luxembourg, fell to the ground a few days back, killing one workman and seriously injuring four others. The pillars had been made too weak for the superstructure.

The following particulars as to the works in progress at the Cathedral of Cologne have been recently given:—A steam-engine of 8-horse power will be used from the commencement of next spring to raise the stone for the tower instead of the crane hitherto employed. The calculation is that a block weighing 4½ tons can be raised to the height required by means of this machine in four minutes. The tower is expected to be terminated in seven years and a half. But an important question still remains to be solved as to how the spire, which is to complete the tower, should be arranged. Probably a hard stone will be employed, in which case the ornament will necessitate the construction of a scaffolding 625 feet in height.

A market and baths are about to be erected near the 'Royal Oak,' Paddington; at least, a bill to that effect has been filed.

The Monument to the memory of Ponsard has been designed by M. Viollet-le-Duc. It is to consist of a bronze statue, to be erected in front of the Hôtel de Ville, in the dramatist's birthplace, Vienne (Isère).

# The Architect.

## ARCHITECTURAL EDUCATION.



O great a cry for education is now making itself heard throughout the country that its influence seems towards be leading to the revival of the very important question chosen for the subject of this article. We say revival, because the absolute inadequacy of our present system has long been a source of reproach to the profession. Often has the subject been taken up, and as often allowed to drop, apparently from the great difficulty of either starting any new and well-defined scheme of education, or grafting on some existing scheme such modifications and improvements as would render it more decidedly effective. With whom the fault lies it is perhaps difficult to say. It is evident that, with a Government like ours, which allows perfect freedom of agency in the administration of all its institutions, any progressive movement must not only originate with those for whose benefit it would be specially intended; it must also be developed in all its details, tried, and pronounced fairly effective, before it can be expected that any recognition of its value could be made either by Government or by the public.

It has been remarked, with perhaps somewhat less of strict justice than of smartness of expression, 'that amateurs generally understand very little about painting, still less about sculpture, and nothing about architecture.' Whatever degree of truth there may be in the foregoing general remark—of the various qualifications that an architect should possess, and of the peculiar training necessary to give him those qualifications, the outside world and amateurs generally can unquestionably know nothing. The problem of architectural education rests, and must rest, entirely with the profession. Hitherto, with a few honourable exceptions, it is students alone who have taken any decided steps to supply the wants that have been felt by them so long and so severely. It must be evident, however, that students, while constrained to act by themselves, can effect but little for their own advancement and benefit; and, on the other hand, it is certain that no really great results can be fairly expected until the principals cordially accept and faithfully fulfil the duty of providing for architectural students a sound professional education. This implies, it must be added, that professional architects feel and admit that for their own benefit, as well as for the general benefit of the profession, in the matter of architectural education an essential and thorough reversal of all existing ideas is absolutely necessary. In fact, in this matter of architectural education the profession has to begin at the beginning.

The time, happily, has now at length arrived when movements in favour of primary and technical education have become both so general throughout the country and so decided in themselves that it will not long be possible for the leading members of any profession to maintain a quiescent attitude. Not to take a part in the prevailing advance will soon be shown to amount to a practical resistance to it. It has been affirmed that, at the present day, 'the architect may be called upon by the intelligent part of the public to show cause even for his existence.' This is, indeed, a strong expression; but it has a basis of truth. To the great detriment of the architect's profession, and even in a higher degree to the injury of the country, it has become the custom to entrust to engineers works in which architectural features constantly play no unimportant part. Thus, here in our own country, the architecture of engineering works is commonly placed in the hands of engineers; but in India the aspect of things is still more serious, since there the designing of architectural buildings is permitted to rest with engineers almost entirely. In America (as Mr. Ware informed the Institute some two years ago), in consequence of the absence of any architectural education whatever (for pupilage and premiums had been long discarded as unsuited to the temper of the time, and no other system had taken its place), the profession in many cases was at a far lower ebb; for the client there addressed himself to an agent, who upon receiving instructions as to the accommodation and style of the building required, together with the intended expenditure, made his arrangements with an architectural draughtsman on the one hand to make the design, and with a contractor on the other hand to carry it out; thus treating the whole affair as a mere speculation, and without any recognition whatever of the profession; 'and in many cases' (Mr. Ware added) 'this had been found to work well, there being less trouble and no extras.' Fortunately, however, this system is dying out; and the establishment of an Institute of Architects and the formation of a school with a regular academical education in architecture (ably aided by our new American contemporary) will, we believe, be the starting-point of the architectural history of America.

To return, however, to the main subject at issue—'architectural education in our own country.' Although it does not by any means follow that any system of education which might have been efficient thirty or forty years ago would be of any value at the present day, still it will be well to notice in the first place what kind of education was given at that time, and to compare with it the degenerate substitute that now exists in its stead. Thirty years

ago, a period of six years' pupilage was the strict rule, as it is now wholly the exception. With a course of six years, it was considered to be possible to acquire a sufficient knowledge of architectural design and drawing, and also of practical work, to become an efficient practitioner, the amount of knowledge then demanded being comparatively small. Drawing—and it was very good drawing—was taught during the first two years. By the working out of the first orders, and the copying of the drawings in the office, the pupil was first thoroughly grounded in the use of his instruments, and in the principles of what then was almost the only style recognised and practised. The style of drawings in those days was very different from what architectural drawings are now. Then they were carefully lined, with an exactitude excelled only by engineers' drawings of the present day, with the shadows traced, and with flat tints of Indian ink or colour laid on, and this careful delineation was found not only in the more artistic drawings, such as elevations or sections, but in all the details, constructional or otherwise; and the flashy coloured perspectives which now grace, or too often disgrace, the walls of our exhibitions, would then have been scouted by the profession as mere tricks and shams, having no other object than to deceive clients. The style of architecture then prevalent was one that had been gradually worked out and developed; and any tendency in it towards change was one which inclined to even greater refinement. This was the effect on the standard style produced by the publication of Stuart and Revett's 'Athens,' and of other works of the same class, and by the productions of the Dilettante Society. Practical details also ran in a well-defined and long-established groove; iron construction in architectural buildings was in its infancy; and the search for the 'truthful in art' had not yet troubled the minds of the students.

It is not our purpose here to discuss whether this state of affairs was healthy so far as art in architecture was concerned; it existed then, whereas now everything is changed. Numerous publications and photographs of the works of all nations and periods are at the disposal of every student. Science has made such rapid progress as to require the most constant attention to keep pace with it, even as connected with the profession of the architect. The employment of iron, again, as a building material has almost changed the fundamental principles of construction; and the various problems relating to the strength of materials have been reduced to the most exact formulae.

Thus, what the student of architecture has to learn has trebled in quantity; but the time set apart for learning it, as a pupil in an office, has been diminished to one-half of what it was formerly—the student now is articulated for three years instead of six. What has been the result? The idea of attempting to teach the pupil has been generally abandoned, and he must obtain his information where and how he can. One of the evil consequences of this change has been the introduction of a meretricious style of drawing injurious in its effect upon art. Connected with this is a carelessness which has to be remedied by elaborate specifications, and a complete absence of knowledge of design or proportion, coupled with a very superficial acquaintance with the numerous scientific and practical questions that have reference to building. What has just been said relates, of course, only to the general professional character of the students of the present day at the completion of their articles, when compared with their predecessors of thirty years ago. We are inclined, however, to suspect that in nine cases out of ten our account is not exaggerated, since now it is almost universally acknowledged that at the end of his pupilage the student finds he has everything to learn. He has had no training whatever in design, in the theory of construction, in a knowledge of materials, or even in drawing. If he has been working in the evening (which is the exception and not the rule) or attending classes, all such studies as these have been entirely works of supererogation on his part; and indeed it is well known that only a very trifling proportion of pupils ever do continue their studies during the evening hours. Having just left school, where they have studied only during the time allotted, the pupils of architects are but too generally disposed to regard the new course of their professional studies in precisely the same light; and they therefore pursue their new studies only during the seven or eight hours laid down as office hours. Accustomed also to a vacation of three or four months, the brief fortnight or three weeks given by the principal is barely sufficient to enable architectural students to recruit their strength; any possibility, therefore, of their seizing the occasion to learn true architecture by the careful measuring and delineation of old buildings is almost entirely out of the question.

If a true picture has here been given of what, at the present time, passes for architectural education, there can be but little doubt as to the justice of the assertion that in such an educational system as this a radical change is a matter of imperative necessity. Assuming, then, the necessity of such a change, hereafter we shall endeavour to show by what means it may be effected. The Report of the Delegates of the Architectural Alliance on the subject of 'Architectural Education,' which was read before the Architectural Association towards the close of last year, is a clear, outspoken, and significant document; and the manner in which that Report was received by an institution which numbers amongst its members the majority of the architectural students in London is conclusive both as to the prevailing sentiment among the students themselves, and as to the certainty that success would attend their earnest, hearty, and united efforts to improve the present educational system.

(To be continued.)

## BALLIOL COLLEGE, OXFORD.

THE edifices that happily have come down from the middle ages to our own times, and now take rank amongst the glories of our country, almost invariably, in a greater or a lesser degree, are characterised by palpable tokens of their having been reared at successive periods. The great architects who flourished in those days were content to build parts of cathedrals, leaving to those who should follow after them the gradual completion of their works; or they themselves either carried onward or completed structures that had been begun and advanced long before by their predecessors. Occasions also arose which required them in part to reconstruct, or possibly altogether to rebuild, edifices that had been shattered by accidental injuries, or even then had yielded to the destroying influences of time. Thus to a terrible conflagration we owe the noble works of the two Williams, one a Norman and the other an Englishman, at Canterbury. At Ely, it was the fall, for a while apparently so disastrous, of the great central tower that eventually led to the erection of the exquisitely beautiful western bays of the choir, and which also inspired Alan de Walsingham with the conception of his unrivalled octagon. And, again, in that venerable museum of mediæval architecture, the Abbey Church of St. Alban's, we see how the advancing development of the art of architecture constrained successive abbots to demolish the comparatively rude relics of earlier ages, in order that they might be enabled to build up portions of their grand church afresh in the greater magnificence of their own eras.

Of late years the work of architectural restoration for the most part has been applied in a different direction; and, but too frequently, in the very act of preserving ancient remains, it has defaced, or even obliterated, the original evidences of their antiquity. At the present day, however, a far more conservative spirit has distinguished the operations of restorers, so that in their hands the terms 'Restoration' and 'Destruction' have ceased to be convertible; and, indeed, really good service of late has repeatedly been done by works of restoration, which have faithfully preserved noble early buildings that were ready to fall into decay, without stamping upon them a modern impress. While thus it is a matter of constant occurrence that the application of a general restoring process to many of our old buildings either is found to be really necessary, or is considered to be so desirable that it is accepted as being necessary, our living architects, whose ability to design and erect works that are altogether new is displayed on every side, are rarely called upon to remove, and subsequently to rebuild from its foundations, some important integral part of a dignified early edifice. The two old Universities of Oxford and Cambridge form decided exceptions to this rule; since, besides the occasional addition of fresh buildings (as within a few years took place at Christ Church, Oxford), various circumstances frequently combine to require the rebuilding of a part or parts of some college. Not many years have passed, for example, since their Chapels were rebuilt at Exeter and Balliol Colleges, Oxford, the former by Mr. G. G. Scott, R.A., and the latter by Mr. Butterfield; and at St. John's College, Cambridge, Mr. Scott is now completing a new Chapel on a scale of no ordinary grandeur. In addition to these rebuildings of collegiate chapels, at the present time two Colleges, one in each University—Balliol at Oxford, and Caius at Cambridge—have important new buildings in different degrees of progress towards completion, both of them erected from the designs of the same able architect, Mr. A. Waterhouse.

At Balliol College, indeed, the new buildings may almost be considered to have been completed already, since only certain interior fittings yet remain to be fixed to render the edifice ready for habitation; and, in fact, one very important portion of these new buildings—the Residence of the Master—is actually occupied by the family of that gentleman, the Rev. Robert Scott, D.D. Balliol College consists of one fine quadrangle or rectangular court, of which the front faces towards Broad Street, together with an irregular range of other buildings of considerable extent, which on two sides complete the enclosure of the College itself, without forming any other enclosed quadrangle. With the exception of some few remains that are beneath the surface of the ground, to which probably an early date may be assigned, none of the existing buildings of this College can claim an age reaching back more than four centuries; and, indeed, it is only one beautiful relic, that well-known gem of Oxford, the oriel window in the dining-room of the Master's residence, with some portions of the adjoining walls, and the College Hall and Library, that are able to advance any pretensions to an existence extending over more than half that space of time.

The old buildings which formed and surrounded the quadrangle of the College for many years had been in so dilapidated a condition, that on several occasions the Master and Fellows had seriously reflected on the propriety, amounting almost to a positive duty, to rebuild them, before, at length, a final decision was adopted and carried into effect. Of that final decision the result is the new building that forms one of our illustrations, and which we presently proceed to describe. The engravings which appeared upon the Oxford University Almanacks for the years 1742 and 1810 gave views of two designs, that at those periods were proposed for the rebuilding of this portion of Balliol College; but, fortunately, considering what those designs are proved by the testimony of the almanack engravings to have been, the project as well of 1810 as of 1742 was abandoned. More recently, the authorities of the College were again induced to resume the consideration of this matter, when a plan was once more

formed, and a design prepared by an architect of a very different order of genius from his predecessor of 1810, the late Augustus Welby Pugin; but circumstances arose which denied to the new buildings proposed for Balliol by that eminent man any other existence than they enjoyed in his own elaborate and beautiful drawings. This was to be the last of these futile efforts. Two or three years ago the subject of the rebuilding was revived in a thoroughly earnest spirit. Mr. Waterhouse was appointed to be the architect. And the commencement of operations was rendered practicable without any delay by the munificence of a lady, Miss Brackenbury (herself a descendant from the original founder, John de Balliol), who provided the means for the rebuilding the Broad Street front of the College, including the tower with the entrance gateway. The remaining portions of the new buildings, which comprise the end of the Quadrangle adjoining Trinity College towards the east, and towards the west the residence of the Master, have been erected at the cost of the College.

The friable nature of the stone of which, in common with so many others of the colleges in the University of Oxford, the old buildings at Balliol had been constructed, irrespective of other considerations, would have required the complete demolition of the earlier fabric as a preliminary to the operations of Mr. Waterhouse. The old buildings, accordingly, with the exception only of parts of the Master's residence, were removed, and the new structure has been erected on the same site that had previously been occupied by them. The works consist of the rebuilding of the entire range of the front of the Quadrangle towards Broad Street, with a lofty tower near its centre, which surmounts the main entrance, and has been placed as nearly as possible opposite to the entrance to the Chapel. From Broad Street, at right angles to the front, runs a return wing, extending northwards till it abuts upon Mr. Butterfield's beautiful new chapel; externally this wing, which forms the eastern enclosure of the College Quadrangle, faces towards the fore-court of Trinity College. In the other direction towards the west, to the westward of the College Quadrangle, and partially detached from the main building by a court-yard, is the residence of the Master. This last building faces towards Broad Street on the one side, and towards the College gardens on the other, and is in the same line with the Broad Street front of the College Quadrangle. Thus at Balliol Mr. Waterhouse has rebuilt from their foundations very important portions of this distinguished College; and his works we regard with unqualified satisfaction, in the first place, because no historical associations were connected with the buildings that have been pulled down, nor did they possess a single feature of either architectural or archaeological interest; and secondly, because, after a careful personal examination and study, we are enabled to declare the buildings that have just been erected in their stead to be an honourable accession to the long array of noble edifices that adorn the face of our country, while at the same time they raise still higher the architectural renown of the famous University on the banks of the Isis.

The style that has been adopted is what may be distinguished as Collegiate Gothic; and this style, equally happy in its association with memories of the past and in its consistent applicability to every requirement of the present, the architect has handled with masterly ability. While yielding a becoming allegiance to early artistic traditions, in his thoroughly original design (original, and yet significantly suggestive of what had been characteristic features in the demolished buildings) Mr. Waterhouse has at once exemplified the plastic elasticity of Gothic art, and has vindicated both its intrinsic excellence and its present vitality. Architecture is seen in the new buildings at Balliol in its true character as a great Art. Also if there be suffused throughout this pile a feeling in harmony with the sentiments of the early Gothic masters, in its perfect adaptation to existing usages and requirements, and in its easy conformity with modern habits of thought and of life, this building evidently belongs to our own times. We are not able to refrain from dwelling upon this point. Whatever the style in which new edifices now may be erected, whether a style that grew up grandly in the middle ages or one that during a more remote antiquity flourished in severe magnificences—if any such style be adopted by living architects, and if in such a style, or in conformity with its practice, buildings be designed and erected for the use of the existing and of succeeding generations, we hold that Architects are bound to treat the style they are employing as a style of their own, and to use it with reference, not to ages long passed away, but to that one particular age which is in the act of leading from time present to time to come. We may take our architecture from whatever past era we please; but, when we have taken it, in our hands it must be assimilated to our own era. Building for use in our own day, we are to build what will be practically most useful. And the art of our architecture is to be governed by the same law which governs its utility—the two, indeed, are inseparable, and have a reciprocal dependence on one another. Circumstances may have deprived us of the faculty and also of the opportunity of originating an architectural style of our own, and of developing it at our pleasure from birth to maturity; yet we are left free to select from existing styles one or more of their numbers which, having become our own architecture by either adoption or inheritance, it is incumbent upon us to adapt to the existing condition of things through the agency of some compound process of modification and development. Too long have many of our architects treated their art as if excellence in it were attainable only by a retrogressive movement towards some

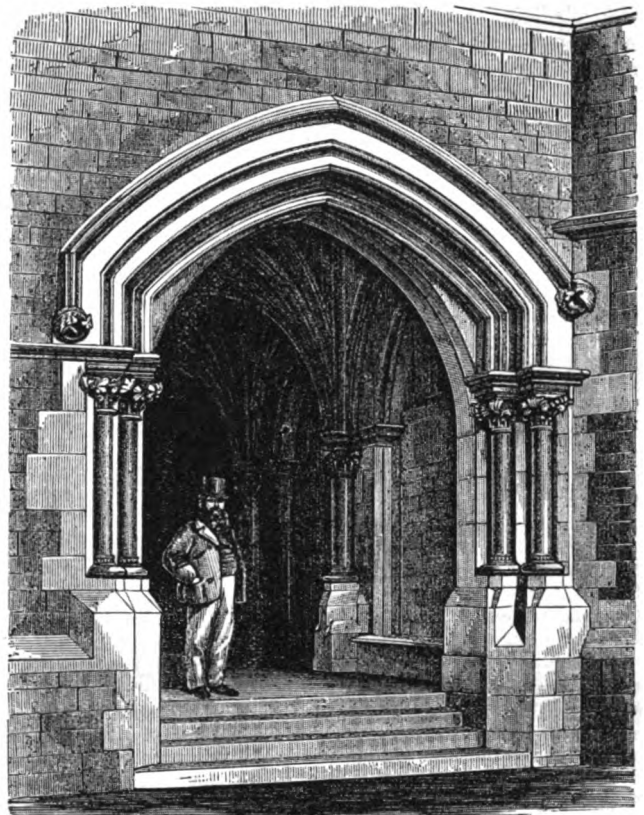
exalted eminence, far away in the distance of ages. Cherishing a remembrance of that eminence, it is full time for architects to look around them and before them, to deal with architecture in a well-disciplined independence, and to show that their reverence for true art in others has inspired them to become true artists themselves. For a while, in the middle of this nineteenth century, it may have been well, and indeed it may have been necessary, that our architects should have aspired to qualify themselves for a successful professional career, had their lot been cast five or six centuries further back in our own era, or about as many centuries before our own era had commenced. What our architects have now to do, is to keep in remembrance that while they are practising their art in their own era, their success will be determined and estimated by what they may accomplish for their own era. These are sentiments that are beginning to be recognised in a hearty manner by the profession; and it is to be hoped that a cordial recognition of them will soon become universal. In his New Buildings at Balliol College, and not by any means in them alone, Mr. Waterhouse has shown that to him architecture is a living art. When lately dealing with an ancient classic style in the interior of the new Foreign Office, Mr. Scott has been successful, in like manner, in infusing into the old style an energetic present vitality. For the Foreign Office, again, Mr. Skidmore has produced gas-fittings, that in their proper capacity of providing the means of illumination by gas are simply perfect; and, nevertheless, they are without fault as examples of modern metal-work, executed in strict conformity with both the spirit and the practice of pure Greek art. Mr. Hart's metal-work at Balliol College may be described in somewhat similar terms: it is thoroughly Gothic, and the style harmonises in it perfectly with its application to the uses of to-day.

What may be regarded as the most beautiful architectural feature of Balliol College is that oriel window of the master's dining-room, looking into the quadrangle, to which reference already has been made. The oriel has been preserved intact, and it still forms the east end of the room: some early heraldic glass, however, has been removed from it to the new south window of the same room. The preservation of this window has given the key to many of the arrangements of the New Buildings. It would have been comparatively easy to have lengthened the hall—an addition to that by no means unimportant part of a college which was almost a matter of pressing necessity. But the claims of the oriel were felt to be irresistible; and it was wisely determined that any plan, otherwise however advantageous, which would imply its destruction, would involve an act of architectural sacrilege. The oriel, therefore, which on its corbels has the arms of William Grey, Bishop of Ely (A.D. 1458), uncle to the first husband of Queen Elizabeth Widville, and may be assigned to about 1470, is safe; and, as of old, it looks into the quadrangle near its south-west angle, in the same line with the eastern windows of the hall; and thus the western side of the quadrangle is formed by the hall itself, with the master's dining-room abutting upon its south end. This dining-room, according to some College traditions, has sometimes been supposed at an earlier period to have been the chapel: this supposition, however, does not appear to rest on any substantial foundation; and, in fact, it may be confidently assumed that the room was originally designed for its present use, to which it appears invariably to have been applied. At some early time there existed communications (traces of which still remain) between the dining-room of the master's residence and the College hall and buttery. Many years ago these communications were closed up; and the buttery was transferred to its present position at the other—the northern—end of the hall.

The new master's residence, having a frontage of 82 feet, is an excellent first-class residence of a high order of architectural art, thoroughly convenient and comfortable, and in every particular qualified to fulfil with becoming dignity the purposes for which it has been constructed. It is both spacious and compact; and the most has been made of certain necessities of the site. For example, no ordinary skill has been called into play in order to accomplish what has been done with the space at the disposal of the architect for the entrance-hall and staircase. The latter, with its graceful iron gas-standard on the lower newel, is a master-piece of arrangement. The cornices and all the architectural fittings of the rooms throughout the building, which have been designed with special reference to their respective positions and uses, are constructively true to the style, yet always most happily adapted to existing sentiment and usage. The cornices and ceilings at present are awaiting colour. The wood-work of the doors, &c., is everywhere pine, which has been varnished in the most effective manner, the wood itself having been left to display its natural grain, with little or no staining. The fire-places demand special notice. Next to their innermost steel-work is a border of coloured tiles, set on a receding slope; beyond this is the marble of the chimney-piece; and, in its turn, this is enclosed within an outer framing of carved oak. The effect is admirable. It must be added that this arrangement has been modified in its details in conformity with the sizes and uses of the different rooms. In the rooms of the New Building of the College this same arrangement obtains, iron and stone-work taking the place of steel and marble. All the new doors and other wood-work, conforming in like manner to the plans prevalent in the master's residence, are of varnished pine.

The collegiate portion of the New Building, of which the front extends from east to west 130 feet, contains 28 sets of rooms, all of

them very complete and commodious. This number includes 3 sets of 4 rooms each, many of them spacious, for the Fellows. There is also a large lecture-room, and close to the entrance in the tower is placed the porter's house. In common with the master's house, the whole of this building displays a marked breadth and freedom of treatment, which are consistently carried out in a system of construction that is free from excessive refinement. The stone-work everywhere shows the traces, not of sandpaper, but of the chisel. The carving is particularly effective—on the whole sparingly introduced, but telling well wherever it appears. The foliage of the capitals, and all the capitals are foliated, is very happy—well studied, judiciously adapted to its appointed duties, and cut with a free, bold hand. The shields of arms and other devices of heraldry, which are introduced in sufficient numbers to give an heraldic tone to the edifice, have recorded their own proper chronicles after their own proper fashion; and the only thing connected with them that we noticed with any other feeling than approval, is the indication in them of the tinctures of the fields and charges by shading—a practice that seems inconsistent with blazoning by means of a chisel. We observed, too, the initial B (of Brakenbury or Balliol) thrice repeated on so many small shields, which would have been better in cusped panels, the shield of heraldry being to be reserved without exception for true armorial blazonry. We should have preferred to have seen the Brakenbury badge instead of the Brakenbury crest, or the device of the crest treated as a badge—a simple modification that would have been expressive, and in good keeping with the fact that the college from



first to last has been built through the munificence of a *Foundress*. The Tower, with its angle stair-turret, is a commanding feature in the Brakenbury front. As it appears in the architect's drawing, the masonry of this tower is finished above by an embattled parapet; but the actual structure, as we have represented it in our engraving, drawn from a photograph taken expressly for our use from the building itself, is crowned with a far better and more effective parapet, seventy-two feet above the ground, pierced with open arches under an unbroken line, and carried by a corbel-table, which enriches the building and looks quite strong enough for even something more than its work, without suggesting (as modern corbel-tables and cornices sometimes do) even the semblance of undue massiveness. The corbelling under the eaves of the whole pile, we may here observe, is simple, has a meaning in it, and is in perfect good taste. On either side of the oriel of the Tower on its exterior face is a canopied niche, and a third similar niche placed between them rises above this oriel: the three niches at present are unoccupied by statues. The quartered shield of Brakenbury has its proper place below the oriel, and immediately over the entrance. This same shield is also several times repeated in different parts of the Brakenbury portion of the New Buildings, under the crest, on the diapered splay below one of the oriels on the exterior, and in the interior, over the several entrances to the staircases, and in glass in the windows of the Lecture-room, thus emphatically declaring the range and also the limits of the works which are the result of the munificence of Miss Brakenbury. The face of the Tower next to the Quadrangle has another fine oriel window, without niches; but, on the corbeling of



its base between two shields, one charged with a *Catherine-wheel* and the other with a *bell*, the insignia of the patron Saint of the College, and of an early benefactor; a third shield displays the arms of the Bishop of Lincoln, who officially is visitor of Balliol College. The entrance-archway, leading through the Tower from Broad Street into the Quadrangle, is constructed in two vaulted bays with rich groining, the springing and the intersections of the ribs being marked by bosses sculptured with foliage. Our Initial Vignette shows this gateway as it is seen from within the Quadrangle: this wood-cut has been drawn from a photograph taken for that purpose.

On the east wing (which is 110 feet in length), at its extremity adjoining Mr. Butterfield's Chapel, in order to obtain additional space for the uppermost rooms, two small oriels set diagonally at the angles of the building, which did not form parts of the original design, have been thrown out with signal success. The Gothic, when properly handled, always permits that to be done with good effect which is required to be done for a good purpose.

We cannot pass over without notice and commendation the exterior metal-work, consisting of water-pipes, rails for the window-balconies, and finials of gables and turrets: all are good and strictly appropriate. The ridge-creating of the roofs, which in its details has been improved since the architect's drawing was made, is another feature to be mentioned with approval.

The contemplation of the chapel of Balliol College, which has taken the place of another building that had been erected upon the same site in 1529, and of the still more recent works that have formed the subject of our present consideration, necessarily leads to the hope that the rebuilding of this college may be completed at no distant period of time. Whatever remains, indeed, of the buildings that were erected early in the eighteenth century are still standing, adjoining Broad Street and to the westward of the Master's House, are impatiently awaiting the appearance of a third Devorgilla. Since they were built—the one during the reign of Henry VI., and the other a little later (for it may be held to be coeval with the original Master's Dining Room and its justly celebrated oriel)—both the library and the hall have undergone changes which have not tended to exalt their architectural character; the parapet of the hall, for instance, with its heavy embattling, has been raised, and the roof has been flattened. In addition to these earlier structures, the College possesses buildings that extend from the south-west angle of the Broad Street range in a northerly direction to St. John's College. These buildings were erected in part (and this part is altogether devoid of any architectural character or pretension) by Basevi, whose fatal accident in the great western tower of Ely Cathedral will always be remembered with regret; and in part, with his customary feeling for a castellated style, by Salvin. The Buttery was also erected by this last architect, and, like his other works, it has good and characteristic features. Thus—besides the builders of the library and the hall, and also of some part of the Broad Street front, and the accomplished artist to whom, did we but know who he may have been, we gladly and reverently would assign the Master's Oriel—the Balliol College of to-day has been built by Basevi, Salvin, Butterfield, and Waterhouse.

(To be completed in the next Number.)

## THE SWISS LAKE DWELLINGS.

AMONG the many subjects which claim the attention of the archæologist, a few are of greater interest than the discoveries of the last ten years or so on the shores of the lakes of Switzerland, and to which the explorations of Herculaneum and Pompeii are as the relics of but yesterday. We can understand how an awful calamity, such as that which befel those cities, served, from the very nature of that natural catastrophe, to preserve down to our own day not only the forms and outlines of the dwellings of a by-gone nation, but even the colour and detail of ornamentation in which the wealth and effeminate splendour of the Roman of the first century after Christ loved to delight. But in the strange remnants of stranger habitations which, after tens of centuries, are now made known to us—the medium which, as it were, hermetically sealed up the evidences of years to be counted by thousands was not a quick and sudden one, as a deluge of ashes, but slow and gradual; and hence the interest for the subject, upon which we propose to set down a few notes, is greater, involving as it does the contemplation of the gradual march of Nature upon the puny efforts of Man, whilst bringing us, as it were, into the daily life of a people whose very name has passed away unknown.

The idea of people living in houses built upon piles driven into swampy ground is familiar to us. Our geography books have taught us how Amsterdam, parts of Rotterdam, and parts of Hamburg are built upon such sub-structures, and the traveller upon the Mississippi boats has seen the huts of outlying settlers and hunters similarly constructed. We are told of an African tribe establishing itself upon a lagoon to seek shelter from the attacks of King Dahome; and Mr. A. R. Wallace, the naturalist, lived for days in one of the quaint villages of the Papuans in New Guinea. The floors of the huts are 'supported on piles carved into rude human figures, seeming to stand upon the water—rows of grotesque and somewhat disagreeable savage Caryatides.' Going back further still in the history of such dwellings, we find Christian fishermen living in huts on piles in the lakes formed by the Orontes in the thirteenth century; and, finally, we arrive at the earliest record of all in the pages of Herodotus, who mentions 'a certain people of Lake Prasias in Thrace (in the sixth century before Christ), living in houses built on boards fastened to piles driven into the lake, with a bridge to connect them with the shore.' To provide against overcrowding,

every man had to contribute towards the gradual extension of this settlement by driving three piles for every wife he married, 'they having many wives.'

Among the many Lacustral villages discovered in Switzerland of late years is *Robenhause*, situated on a peat moor not far from the small lake of Pfäffikon, between Zurich and Chur. The lake was once double its present size, and in it, about a mile from the shore, but connected by a pier on piles, stood a village of considerable extent. The intelligent owner of this property began by very carefully clearing downwards, and soon found that what at first sight appeared a hopeless confusion of matter was in reality a clearly defined chronicle of the history of this settlement. He found that the first settlers had driven piles of unbarked fir deep into the bottom of the lake, had covered them with planks, and upon these had constructed their wooden huts. But one night a fire broke out; a strong south wind (still the dread of the Swiss to this day, and known as the Föhn wind) blew at the time, sending the burning embers far into the lake to the northward, and soon reducing the village to a heap of ashes. But the inhabitants went diligently to work and rebuilt their huts, driving in fresh piles and greatly extending the place. Here they lived long enough to allow of a layer of peat to grow over the *débris* of the first conflagration, but again a fire broke out, and the village was again burnt down to the water's edge. In no way disheartened by these two calamities, the former of which certainly none then alive could remember, they rebuilt the settlement again, this time employing oak split into lengths instead of fir, but the rubbish and peat under them had by this time accumulated to such an extent that the new piles never reached the bed of the original lake at all. Here they continued to live, until the peat growing around them gradually converted the lake into a mere swamp, and the village was deserted and abandoned. One by one the huts fell, the materials disappeared beneath the advancing peat, and now, after perhaps two thousand years, the careful investigations of Dr. Keller and Herr Messikomer supply us with the facts here briefly told.

Nor is this settlement, now known as *Robenhause*, the only instance of such pile-built villages. On the lakes of Geneva, of Zurich, and of Neuchâtel, remains are still found, sometimes clearly visible at a depth of eight or ten feet below the surface, and some 500 feet from the shore, as at Morges; sometimes at a distance of 800 yards from the lake, and now on dry ground, as at Chamblon.

But there was a second less laborious, though less substantial mode of construction in vogue, and this was employed in situations where comparative security from storms upon the lakes could be expected, as in lagoons or in large bays. Artificial islands were constructed in such localities by means of faggots loaded and sunk by stones, sand, or gravel, as, for instance, was done at Niederwyl, near Frauenfeld. When the heaps of faggots had reached the surface, they were covered with rough flooring, upon which the huts were erected, a thick coating of earth being laid on the flooring to prevent the damp from rising. But this construction by means of faggots was not common, and was only employed in quiet and swampy situations.

Much ingenuity has been displayed in the endeavour to assign a *period* for these lake dwellings; and, whilst every test and every new fact cannot but add to the faint light which at present illumines this question, many more tests and still more facts must become our own before the date of these constructions can be even approximately fixed. Monsieur Troyon, of Lausanne, in his 'Habitations Lacustres des Temps Anciens et Modernes,' calculates the date of the settlement at Chamblon, near Yverdon. Yverdon was on the shores of the Lake of Neuchâtel in the time of the Romans, when it was called Eburodunum; it is now 2,500 feet away from the lake, and hence Mons. Troyon argues that, if the lake retreated at the same rate before the time of the Romans as it has done since, then the Lacustral village of Chamblon must be 3,300 years old. That some of these villages existed in the time of the Romans is probable, from the fact that a few coins have been found in them; and it is not at all unlikely but that the invasion of the civilised bands from the south side of the Alps induced the natives to abandon their water villages, and to seek a safer refuge in the mountains.

But though inferior to the Romans in point of civilisation, the inhabitants of the villages we have described were by no means savages. We learn, for instance, from the remains at Robenhause, that they were an agricultural people; the successive strata of the burnt *débris* are intermixed with wheat and barley, which they crushed with rude stones and baked into bread, some of which has also been found! They kept pigs, sheep, and goats upon their islands, probably driving them to the pastures on shore by day, but taking them home for safety at night. They also cultivated abundance of flax, as is testified by the hanks, cords, and nets found in the peat at Robenhause, and this they worked up into cloth by means of looms, one of which was actually found sufficiently preserved to enable a Zurich weaver to construct a probable restoration of the original. Professor Oswald Heer shows that these people lived in these water villages all the year round; he found cherrystones which would have been thrown away in June, then blackberries, and lastly hazel and beech-nuts which ripen in winter.

Returning to the question of the date which may reasonably be assigned to the Lacustral villages of Switzerland, there seems to be little doubt but that they existed in the latter part of the flint age, and that they survived the bronze age here and there. The implements found are chiefly of stone; spears of obsidian, stone hatchets and saws, flint arrow-heads and knives were common, whereas articles in bronze are found but comparatively seldom. Yet a few celts, crucibles and moulds have come to light, whilst a pair of bracelets of bronze, taken from among the piles in the Lake of Geneva, shows that the new art had made tolerable progress among the people before they relinquished their amphibious existence. Reverting, in conclusion, to the motive which could have induced this ancient people to live on such laboriously constructed islands as we have described, we naturally infer that it was for the sake of greater safety. Was it then fear of wild beasts or of enemies? We know that the mammoth, the hyæna, and the cave-tiger no longer existed, and the bear was hardly seriously dangerous to men armed with weapons such as we know they possessed. It was, therefore, the fear of man which prompted the construction of the

Lake Dwellings, and this opinion seems further supported by the fact that cattle and horses were not kept on shore, but on the island, where, in case of sudden attack, they were secure from being driven off.

Those interested in the subject which we have briefly touched upon above will find much to learn in the work by Mons. Troyon to which we have alluded, as also in a recent account of the Lake Dwellings, not of Switzerland only, but of those discovered in other parts of Europe, by Dr. F. Keller, President of the Antiquarian Society of Zurich.

### ROYAL INSTITUTE OF BRITISH ARCHITECTS.

**A**N Ordinary General Meeting of this Institute was held on Monday evening, the 4th inst., at 9 Conduit Street, Hanover Square, Mr. J. Edmeston in the chair. Mr. J. P. Seddon, the honorary secretary, made the usual formal announcements. He also informed the meeting that the Society had received news of the death of Mr. John Clarke (Fellow), of 2 Great James Street, Bedford Row, who expired at Hong Kong, on October 16 last. The donations announced included a Description of the New Metropolitan Meat-market, designed by Mr. Horace Jones, and copies of the plan and sections according to which it is proposed to build the new Law Courts, from Mr. Street. The first number of the new journal, *THE ARCHITECT*, was presented amidst some applause. Mr. Seddon then read a letter, received recently from Professor Donaldson, giving an interesting account of his travels in the Holy Land, of which we append an extract.

On the Archipelago, en route from Athens to Trieste, Dec. 21, 1868.

We took occasion to go down the Suez Canal about half its length, from Ishmaela to Port Said, which is completely executed, with the sea-water in it. The southern portion between Ishmaela and Suez is excavated to half its depth only, and the harbour at the mouth has to be completed. It is a marvellous realisation of a prodigious project, and does justice to the daring of its projectors. As you steam along its channel, 300 feet wide, with sufficient depth to receive the largest merchant vessel, you cannot but feel impressed with the extent of this great sea channel. But its maintenance will be the greatest difficulty of all; to preserve the depth from being choked up by the sands, whether along the canal itself or in the port, is even now a matter of anxiety and care. While we were on the spot a French vessel of war was expected, and they were employing many gigantic dredgers to secure a channel. In the basin of the harbour there were several vessels of considerable size. The piers to enclose the harbour of Port Said are constructed of enormous concrete blocks, a couple of metres or more in each direction, thrown over and left to take their place 'pêle-mêle;' but it has been found that this will not do, for the waves force themselves between the crevices and interstices with such force as to move them, and they are now considering how to produce more cohesion between the blocks than by their mere weight; and if they are obliged to adopt the regular combination of the masses by regular construction, as in our Dover Pier, it will cause an enormous expense, for the dykes or piers extend out miles into the Mediterranean. The town, if I may so call it, of Said is composed of rapidly-built stores, one or two storeys high, like all settlements in new colonies; and the inhabitants consist chiefly of Maltese, Greeks, the refuse of the Levant, with very few respectable French. One who held a not very high position in the public service there said it was quite as an exile, without any society.

From Port Said an Alexandrine steamer took us on to Jaffa. These Egyptian coasters are fine vessels, chiefly built in Scotland.

We reached Jerusalem in a day and a half, but were not able to see its walls till after sunset. The ride was through a hilly, wild country, Kirjath-Jearim alone presenting a fine old church of the time of the Crusades, with pointed arches, and paintings still traceable on the walls, though long since abandoned and unoccupied. There is a nave and side aisles, divided by three or four square pillars on each side, and apsidal recesses at the east end. Jerusalem itself caused me the greatest disappointment and pain. It is a vast store for religious traffic, occupied by religionists of every shade of Christian doctrine, scrambling and fighting for the pre-eminence, and as to which can offer the most numerous and attractive localities and objects for superstitious reverence.

Jerusalem is, as you know, situate on the rapid slope of hills which rise from the valley of Kedron up to Zion. Its sanitary condition is the worst possible, for it is without sewers, and is supplied from cisterns which receive the surface waters, and too often impregnated from cesspools and drains; the streets narrow, and one-fourth arched over to gain space; and with occasionally a malignant air, it is not surprising that European residents denounce it as very unhealthy. A great part of the city is occupied by the religious communities, which are numerous. Various new buildings have been erected of late years, as monasteries, churches, nunneries, hospitals, and schools. The ambitious Russians cover several acres outside the Jaffa Gate, upon a rising plateau which commands the city, with a large church not yet completed, residences for the clergy and others, 'hospices et hospitaux,' in detached masses, and surrounded by gardens. There is room to receive all the Christian population, if needs be, within the precinct. The structural part of the new Dome of the Holy Sepulchre is nearly completed, and the interior of it decorated with paintings, which, however, are of too pale a tone to be effective. The modern building that pleased me most was the Armenian Church, which, although evidently designed by an inferior mind, is effectively decorated in the interior with coloured tiles and fine iconostasis. But no edifice, old or new, equals in effect the Mosque of Omar. Simple in design, and treated in detail with majolica tiles, and a sombre effect truly impressive, so far does the Turk outdo the Christian. The Holy Sepulchre itself is a most dramatic as-

semblage of churches, chapels, oratories, and sanctuaries; some on the general level, others going up, several going down into the rocky caverns; and, what with the ceremonies of the various religionists carried on at the same time, with their processions and visits to every one of their twenty or thirty altars, with their chants and tapers and vestments, litanies on one side, chants on the other, the mind becomes bewildered, and one wonders whether this can be a true temple for the worship of the living God, or a very Babel or House of Baal for the sacrifices of superstition; and the silent, impassive Turk keeping order, smoking his pipe, and sipping his coffee.

The Valley of Jehoshaphat is the only spot containing remnants of the classic times, Greco-Roman, but I saw nothing of decorative detail that could be called Jewish. Some enthusiastic minds seem to connect with that period some walls of fine construction, and large blocks of stone between 12 and 20 feet long and 4 or 6 feet high; but what are these to the stupendous courses we have seen at Baalbec, 60 feet long, and upwards of 12 feet high and 10 or 12 feet thick, of the time of the Antonines? The Wailing Wall of the Jews is a noble specimen of construction, but cannot, I think, be referred to an earlier period than the Herodian epoch. A mistaken technical expression is used by Lieutenant Warren and other non-architectural writers in describing the blocks of some construction as with bevelled edges, whereas they are not bevelled or splayed at all, but have a slightly sunk margin 2 or 3 inches wide, and sunk  $\frac{1}{2}$  or  $\frac{3}{4}$  of an inch from the general face. As I was riding along with Lieutenant Warren, I observed about little more than half of a pure Greek Doric capital on the ground, reversed, and something like those of the tombs in the Valley of Jehoshaphat. He had not observed it before, and I called his attention to it, and he had it taken to his house. It is about 2 feet diameter, and I took the section, with the dimension, to ensure accuracy of the profile, and left the sketch with him. He has discovered a new channel some 1,200 feet long, about 5 feet high, and 2 feet 6 or 3 feet wide. It has several shafts, with steps leading down to it, about 20 or 30 feet underground; he cannot exactly explain its use, but thinks it served the purpose of a water conduit for the area of the Temple. It appeared to me that the ancients, having traced out the line of the conduit, sunk stairlike shafts, and then worked right and left till they met, and thus were able to have several sets of men at work at one and the same time.

Up above the ancient town of Caesarea Philippi, about two hours off, and perched upon the top of a rocky, precipitous spur, is a very grand mediæval castle of the Saracens. Two of our party went up to it, and describe it as of considerable extent, with large courts, keep, towers, and other suitable erections. Two days' ride from this brought us to Damascus, one of the world's paradises of the Turk and Moslem.

You may imagine the way-worn traveller or pilgrim coming from the Arabian deserts when Damascus, with its glittering spires and minarets, bursts on his view, surrounded by groves and gardens, extending a couple of leagues one way and a couple of miles the other, watered by the abundant stream of the Abana, backed by a fine range of rocky mountains, and snow-capped Hermon rising above all, as a mighty protecting genius. Can we not, then, sympathise with the ecstasy of the wanderer seeing Damascus *ab externo*? Seen within, it yields to Cairo, I think, as to the nobility of its mosques, its fountains and schools; but is superior in its bazaars, and khans, and street pavement—here of stone, there of mud. Some of the columns that lined the street which was stated in the New Testament to be called Straight, and ran from one end of the city to the other, still remain; and others of a transverse direction, 4 feet in diameter, of the time of the Constantines. We saw a very fine specimen of a Turk's house, with marble courts and fountains, orange and lemon trees, vines and fig trees, beautifully designed and carried out in all its Arab details, and I hope illustrated by Coste, who must have been here, surely. We also paid a visit to Abdel-Kader, who received us most kindly. He is sixty-one, but appears older, unwell, and full of care, though with a mild and winning expression of countenance.

We thence visited Baalbec, crossing Anti-Lebanus, at the foot of which it lies, in the plain which divides Lebanon and Anti-Lebanus. I shall never forget the impression produced on our minds by the examination of these gigantic, powerfully, and grandly conceived groups. The execution is at once Titanic and exquisite as to finish. The study of Roman architecture is incomplete without a visit to these temples.

Professor KERR said that, before proceeding to the other business, he thought it necessary to ask as to the new Building Act, what steps had been taken by the Council; and he hoped that before anything was done, the Council would report to the members of the Institute.

The CHAIRMAN assured the learned Professor that the subject had received due attention from the committee appointed on the Bill. The Council awaited the result of an interview with the President (Mr. Tite, M.P.), and there was now some hope of a modification of the objectionable clauses in the new Bill.

Professor KERR was glad to hear that action had been taken, remarking that this was a matter of vital importance to district surveyors, who relied upon this Institute to watch their interests.

The CHAIRMAN then called upon Mr. White, F.S.A. (Fellow), to read the paper of which notice had been given—'A Descriptive Sketch of the new House at Humewood, County Wicklow,' erected from Mr. White's plans, and under his superintendence, for Mr. W. Wentworth Fitzwilliam Dick, M.P. for the county of Wicklow. The paper was illustrated by a most complete series of plans and working drawings, which included nearly, if not quite, every detail of the building.

Mr. WHITE (who was received with applause) proceeded to describe, at some length, the new building, and explained that, having carefully studied the requirements of the locality, he had endeavoured to incorporate with the old Scotch baronial hall certain Irish peculiarities, combined with such modern improvements as might, in his judgment, be necessary. He had not lost sight of the position in society of the family for whom the mansion

was being erected, and the heraldic devices would be exhibited appropriately in various parts of the building. As regarded the work itself, it was at once simple and massive; but it had been made good of its kind; and looking at the work generally, he must say he had not seen a better piece of granite work or joinery. The granite work was executed under the supervision of a British foreman, and the joinery work had been sent over from England, it being exceedingly good. Mr. White referred to the sketches with which one of the walls of the hall was hung, and which had attracted great attention and admiration during an early part of the evening, explaining that in designing the house at Humewood he had endeavoured to make it both convenient and handsome, though he had not allowed anything to stand in the way of the former idea. The exterior of the house was entirely of granite, and great care had been taken in its construction. There were no pinnars, but the granite was packed piece by piece to fit each other, so as to avoid pinnars. The joints were indented so as to throw off the rain. The building was lined with brick, held together with iron clamps, and the general arrangement was one of great strength. The new house stood from 80 to 100 feet in advance of the old building, and commanded beautiful views of the Wicklow mountains. The offices, which were extensive, and the servants' rooms were on the basement; and this he considered desirable. It was necessary in the country in which this house was built to make a Mansion secure from possible attack, and he had carefully considered this point. The windows of the servants' rooms were protected with massive iron bars. The means of protection afforded to the principal entrance were also of an effective character, as would be seen by the plans exhibited. Beneath the carriage entrance there was a vaulted porch leading down to the basement, and having regard to the space, he considered that he had thus arranged the rooms satisfactorily. The stairs were furnished with a separate run for taking up the dinner. There was a lift, but he considered that a lift arranged for dinner was apt to let the steam of dinner over the house. In the still room was a small hatch for serving tea to parties on the lawn. The lift was near one of the entrances. It would take luggage and coals to the top of the house. In reference to the interior of the house, Mr. White showed drawings of the panelling, displaying the great care that had been taken in the intermixture of the wood, as would be seen by the drawings in the room. The chimney flues were so arranged that they might be swept from the basement, but probably they would require the use of a shuttle and cord, so that they might be swept from the top. The stables were 130 feet long and 100 feet wide, and they were approached by a covered way from the front, while there was a back entrance to the stable yard. The windows opened as casements, the larger ones inwards and the others outwards; the top lights of the windows, being hung to the head and opening outwards, were very available for ventilating purposes; and any ornamental glass in them still remained visible when open. The window-frames were of oak and the casements of mahogany, which had a very substantial and, at the same time, handsome effect. The gutters were of solid Staffordshire gutter bricks, and there was over them a snow-board, to prevent the gutters being clogged in bad weather. The down-pipes were of glazed Staffordshire tile built into the wall, and, to provide against any chance of stoppage, there was an overflow pipe at the top and at the bottom to carry off the water, and the roofs were covered with plain brown tiles. Along the mullions and jambs he had introduced a very slight moulding. He had relieved or softened down the edges of the granite work, not agreeing with those who preferred leaving the granite with the sharp edge. (For the information of the meeting, a series of reduced plans, showing the general arrangement of the rooms, was handed round. These drawings attracted a great deal of attention and were much admired, being executed in photo-lithography, reduced from an eighth-scale drawing. Mr. White said that they were printed in the first instance plain, and subsequently coloured in his office. Mr. Bessant, of Essex Street, Strand, was the printer, the ten or twelve copies costing 28*l.*)

In answer to questions addressed to him, Mr. WHITE explained by means of diagrams the construction of his tile gutters, which presented very unusual peculiarities difficult to describe without a drawing. He also explained the construction of an extensive flat, which was laid with slate and several thicknesses of tile, cemented, and carried on wooden joists, instead of the lead flats in ordinary use. He considered that lead flats were a very great nuisance, and led to constant annoyances; for when a lead flat got out of repair, there was frequent plundering on the part of the plumbers' servants and labourers, who either could not or would not withstand the temptation. He greatly preferred the tile flat, as it was permanent. The whole cost of the house was 15,000*l.*

Mr. SEDDON then proposed a vote of thanks to Mr. White for his able and interesting paper, for which he was sure the Institution was much obliged.

Mr. ROGER SMITH, in seconding the motion, spoke of the excellence of the drawings that had been exhibited. As regarded the treatment, he thought it was an advantage to an architect to work in granite, as he was compelled to be very simple, and avoid excessive ornament. The modern buildings in Dublin include good examples of the use of granite. At Mont St. Michel in Normandy he had been much struck with the simple beauty of some of the grand structures, executed in granite almost without mouldings. Referring to the offices being placed in a basement floor, he said there was a difference of opinion amongst professional men upon this point. For his own part he should like to know how the system worked, and to elicit some expression of opinion.

Professor KERR considered that the subject of the offices being placed in the basement was one open to much discussion. Some gentlemen objected to it, and others approved of it; but he did not like it at all—the objection to it being that it destroyed the privacy of what is called a garden front to have it overlooked by the windows of the offices. As to the window openings, in this climate he thought

it must be conceded that the sash window was the only known contrivance to keep out the weather. In his works he always introduced sash windows, even where there were mullions and transoms, and they never had an unpleasant appearance if the reveal were sufficiently deep. The construction of a tile and slate flat upon timber joists he regarded as very new and startling. He had an opinion that a tile and slate flat would not keep out the wet, but as Mr. White said it did, it must be taken for granted that such was the case. Mr. Kerr alluded generally to the ironwork and to the mouldings, which he did not altogether approve; but he considered that they were all indebted for the care with which Mr. White had brought the matter before the meeting, and for the beautiful drawings now exhibited. (Applause.)

Mr. C. F. HAYWARD did not attach much importance to the presence or absence of a basement. In his opinion all depended upon the site, and if the position warranted it, the offices could be placed in the basement. The whole matter of the arrangement of the basement was one of convenience. He had a belief in a tile flat in opposition to a lead flat, but that which made this particular flat remarkable was its apparently great size. [Mr. WHITE: It is 60 feet by 10 to 12 feet.] The difficulty in the way of using casement windows was the curtains and blinds, and the position of these ought always to be provided for in designing a window and its joinery.

The vote of thanks was put from the chair, and in acknowledging it,

Mr. WHITE said, in answer to some inquiries, that the basement was a necessity in this particular instance for various reasons. It was the most convenient place for the servants' offices, and therefore had been appropriated to that use. As regarded the overlooking, many of the windows of the offices did not overlook the grounds; and as to the others which did overlook the terrace garden, he admitted that he adopted the barbarous expedient of putting rough plate-glass to a sufficient height to prevent any overlooking. Upon the subject of sashes or casements he averred that he had seen and felt as much rain and bad weather drive through sashes as through casements, and he had seen casements that let in no wind or rain at all—that it was entirely a question of excellence of workmanship. He greatly preferred casements, for a casement once thrown open left the whole height of the window clear to look out at, which sashes do not. With reference to the down-pipe, his own was 6 inches in diameter, and built into the outer wall only, and this was free of the inner casing. As to mouldings, it was an artistic question. It was impossible to define exactly why one moulding pleased more than another, though an artist could feel the difference; and he had done what he felt suited the case. Mr. White concluded by thanking his friends for the attention with which they had listened to his descriptions.

The CHAIRMAN announced that the next meeting would be held on the 18th instant, when Professor KERR would read a paper on 'A Development of the Theory of the Architecture.'

### THE PRUSSIAN WAR-HARBOUR OF JADE.

SOME ten years ago, and before matters in North Germany had assumed the character which they eventually did, Prussia bought the bay known as the 'Jade Busen' with hard cash from the Duchy of Oldenburg, to which principally the bay with its surrounding territory belonged. This was in consequence of a want, long felt by the Government at Berlin, of some harbour on the German Ocean to which, in time of war as well as of peace, the Prussian fleet might repair without violating the laws of neutrality, and in order to obviate the tedious journey round into the Baltic. Since that time, works, which were begun soon after the transfer had been formally made, have been continued without interruption, in order to convert the open and defenceless bay into a very formidable stronghold, in the centre of which are large docks. These consist of a small outer dock 273 yards long and 137 yards wide, communicating at one end with a lock leading to the bay, and at the other end with the large inner dock, which is 410 yards long and 257 yards wide. The chamber of the lock above mentioned is 144 feet long by 70 feet wide, enclosed at either end by a pair of powerful sluice gates, each leaf measuring 35 feet in width. The walls of the lock are formed in solid masonry 20 ft. at foot, and rest on a bed of concrete 10 feet deep. The outer channel leading to this lock is also enclosed by embankment walls of solid stone, and is 240 yards long by a width of 69 yards. Here are the houses and sheds of the arsenal, in which much activity constantly prevails. And beyond this the bay opens out to a considerable width; the navigable channel is at first only some 656 yards wide by a depth (at high water) of 32 feet; but it soon enlarges to a width of about 1,400 yards, thus making it easy for the largest men-of-war to enter and leave the docks.

Chiswick House, Chiswick, is taken by the Prince of Wales. In our last we were only able to state that such was a report.

A prospectus has appeared of the General Accident and Guarantee Company (Limited), with a capital of 50,000*l.*, in shares of 5*l.* each. The Company is projected for the purpose of carrying on general accident and guarantee business, and among other advantages offered is the granting a policy, without profits, for 300*l.* in the event of death by accident, or 2*l.* per week in case of total disablement by accident, for the annual payment of 1*l.*, with reduced rates for architects, surveyors, and civil engineers.

## THE CO-OPERATION OF ARCHITECTS AND ENGINEERS.

(Continued from page 5.)

THERE is an obvious objection which will be raised to the line of remark we took up in the first article on this subject. It may be asked, pertinently enough, why so much importance should be attached to the conjunction of the professions of engineering and architecture; to the harmonious action of two *separate* branches of constructive science, when it is fair to assume that there may arise in either profession men who will possess the necessary talents and master the special processes of the other, and so combine the desirable results we have treated of in individual practice. It may therefore be objected that our argument so far tends directly to discourage all effort towards this dual excellence.

The answer to both objections is to be found in the almost impossible or impracticable nature of the prospect held out to us. It has already been admitted that there may occur individual instances of great excellence in architectural and engineering skill—just as it is possible enough to conceive that a man might construct a violin to rival the finest Cremona, and also be able to perform on it with the genius of a Paganini or a Joachim. But such an individual would be regarded as a prodigy, and prodigies are never plentiful. The fact remains that instances of constructive genius and high artistic instinct, combined in one mind, are not likely to be ever so numerous as to affect the argument we have been following up.

We may also ask whether it is at all likely that in the increasing magnitude and multiplication of the works to which our architects and engineers are for the future to devote themselves, the conjunction of the two specialties is more probable than it now seems. There are several weighty considerations which tell strongly against any such probability. The eager competition for works of design and construction is an admitted fact in our own time, and it is not likely to diminish if our public works expand in the same ratio which the last twenty years have witnessed. With the mere fact of this expansion, and the knowledge that the standard of professional study is proportionately rising, before us, does it not seem something like a mere truism to say that the actual working life of either architect or engineer must become practically briefer than it now is, and therefore that neither can be expected to achieve more than he now accomplishes?

The natural and obvious tendency arising out of these considerations is to create and multiply *specialists* among professional men in our day. We see this tendency illustrated in every class of professions. Medical men are divided into specialists; lawyers have their various and distinctly defined classes of legal practice; painters, sculptors, and authors have their favourite lines of study and work, in which lies their only chance, in this age of bustling intellectual activity and competition, of achieving eminence in any art. So it is with the architect and the engineer. We have the civil engineer and the mechanical engineer, each having a sharply defined province of action. One engineer is eminent in railway work, with which are associated some of the most remarkable building achievements of the age. Another is eminent for skill in bridge building, a special class of work which meets a pressing demand in these days of rapid communication and the growth of population. Others again there are who embank our rivers, construct the harbours which house our ships, and rear the lighthouses which avert the perils of our seamen.

So among our architects we have men of various repute in special phases of the art. One man by concentrated study becomes famous in ecclesiastical work; another in secular; and so, in all the different styles into which the history of the art divides itself, we have men who rise to high repute by their special devotion to one or other of them, according to their predilections.

It seems idle, therefore, to dream of ever reuniting the different phases of engineering and architectural work in individual practice. The whole tendency of our times is not only to separate them as distinct professions, but to subdivide each into various specialties.

It is not the least interesting peculiarity of all art and science, that the more they are pursued, so much further seems to recede the destination of absolute knowledge; the deeper we descend into them, the more profound do their depths become. So illimitable are the secrets and the phenomena of nature; so incomprehensible the capacities of mind!

The first step towards co-operation between the two professions of Architecture and Engineering is to recognise at once the essential distinction which now exists between them. The next is to discover for ourselves by actual observation of the works of each profession whether there is not in their quality as works of design and construction sufficient to justify a plea for more harmonious action between engineers and architects. This is the practical issue of our whole subject.

And such a subject, introduced in a journal which addresses itself largely to men practically acquainted with it, is best dealt with by leaving mere theories as soon as possible, and resorting to those everyday examples of architectural and engineering work in which not only professional but popular interest is concerned.

If, in pursuing such a course, we are led into criticism of any public work, it will be allowed to us that such strictures as may occur to one honestly and impartially considering his subject are not less required by public necessities than in the interest of the authors of such

works themselves. For, whether we be architects or engineers, we must be all aware that in social life we daily meet with intelligent and significant criticism of our public works, which it is as much the duty of the journalist to chronicle as it is for the professional reader to weigh and profit by.

For the last twenty years, during which the public interest has largely revived in the two great artistic and scientific branches of building science, much has been said and written as to the *rationale* of architectural and engineering work; and it is mainly under this head where the sins of omission and of commission in regard to such work are to be discovered. For every intelligent critic will readily admit that there is no lack of talent among us, both artistic and constructive, to which we owe many noble works of great interest and attraction. But it is just the knowledge and consciousness of that fact which incites one to criticism of the many things done which ought not to be done, and the things left undone which might have been done.

To come to actual examples, let us take the case of a building now in progress of erection, and likely to prove very popular in the metropolis ere long—one of the gigantic and ambitious projects adverted to in our former article: The Albert Hall of Art and Science at South Kensington. If we are rightly informed as to the features of its design and construction, there is much to be deprecated in it. We regret this all the more after what is to be seen of similar work already accomplished at South Kensington. The Museum buildings, in their permanent shape, are such as the country may well be proud of. As far as we are able to discover, they seem to be no less honest in the spirit of their construction than they are effective and (to our modern London notions) original in their design. If the colossal Hall now being erected in immediate proximity is to fall short of that character, the deficiency will be matter of more than merely local regret. It emanates from a source at which the soundest modern principles of art and engineering might naturally be expected to find their fullest realisation. And yet, in close proximity to the future home of our art collections, there is some reason to apprehend that this new building may sin grievously against the very canons of sound artistic and constructive design which South Kensington has for years been promulgating. In a work of such magnitude, the agency of the engineer must naturally have been called in, particularly for its main feature—the roof. It is no easy task to cover an elliptical space measuring something like 240 feet by 180 feet; and hence we believe an iron roof, forming the real covering of the Hall, is designed for it. But what can be said as to 'true principles' of design and construction when it is known that this iron construction is neither a ceiling inside, nor a roof outside the building? It seems to be a mere go-between, in real earnest meant to do the work both of ceiling and roof, and yet is not visible as either!

We entertain a sufficiently high respect for the authorities—professional and other—by whom this extensive and interesting work is being conducted, to believe that an honest criticism on any of its parts will be respected and not resented by them. It is in this spirit they may turn on us the natural inquiry, what other method is feasible by which to cover a space so capacious as this Albert Hall, which would be at once slightly and effective, internally and externally? And if our criticism on works as they are is to possess any practical value at all, we frankly admit that we are bound to meet such questions in intelligible and practicable forms. Accordingly we do not hesitate to assert that a roof, even for such an area as the Albert Hall, might have been constructed, not only in material which would have been capable of the highest artistic treatment, but would have been, in its design and construction, at once a ceiling to the hall internally, and the shell for the external covering. It will not surprise any engineer who may be acquainted with the capabilities of the material when we say that in a roof, constructed almost entirely of pottery, and treated in the majolica or the Lucca della Robbia manner, a system of simple arched construction could have been adopted. This would only be following the wonderfully vaulted roofs of our Perpendicular Gothic style, such as we see in King's College Chapel, Cambridge, Henry VII.'s Chapel at Westminster, or St. George's Chapel, Windsor. These, at least, will be recognised as respectable precedents to follow.

Assume the radiating or vaulting ribs to be formed in metal, a material of our own time for all such constructive purposes, and nothing can more naturally follow than to 'fill in' the gores with hollow cubes in the pottery material, modelled and coloured (though probably *not* glazed) on the under side or ceiling surface, and filled in the hollow or outward surface with a cement largely impregnated with sand, whereby a ground work for tile or slate would be formed, and security be gained for proper acoustic effects in the hall internally.

Such a treatment would not only be illustrating that conjunction of the two branches of building science which we are treating of, but would be thoroughly in accord with the use and treatment of ceramic material, which forms one of the most striking and interesting features in the general design of the building.

Many works of public interest and importance offer opportunities for strictures of this nature; and if we hereafter refer to them, it will be less for the mere purposes of criticism than to deduce from them practical and every-day illustrations of that divorced action between the artistic and constructive professions which we earnestly desire to see annulled.

(To be concluded in our next.)



## ILLUSTRATIONS.

## THE CATHEDRAL OF TOURNAI.

THE Cathedral of Tournai, the largest Romanesque building in Belgium, is one of the most complete and remarkable examples of this style in Europe, and is also peculiarly interesting as affording a comparison with the Abbaye-aux-Hommes at Caen, both being in course of erection at the same period. The Cathedral consists of a nave and aisles, which were dedicated in 1066 A.D.; of a transept, with apsidal ends, dating from 1146 A.D.; and of the choir, aisles, and chapels, which were added a century later. The apsidal ends of the transepts are the finest features of the church, and are, with the single exception of the church of Sta. Maria in Capitulo at Cologne, unique examples of this form of apsidal termination, with aisles running round. The architecture of their interior consists of a series of arches of two orders, circular headed and stilted, which, carried on lofty circular piers, divide the aisles from the nave; and a triforium gallery above, with similar arches to those below, the piers being smaller and of half the height only; both aisle and triforium gallery are of the same width, and lighted by circular-headed windows. Above this second row of arches comes the real triforium, which consists of an architrave, or 'plate-bande,' supported by small stunted columns and piers. The vaulting is carried by plain ribs converging to a point, and is penetrated by circular-headed clerestory windows. The architecture of the exterior of this apse is seen in the illustration which we have chosen, taken from the north-west end of the Market-place adjoining the Cathedral. It is extremely simple, and the decoration is confined to the capitals of the small columns on each side of the windows. This Cathedral is the only church in Belgium which has five towers; they are all most picturesquely grouped in the centre of the building; the central tower, which is somewhat low, being situated in the intersection of the nave and transept. Of the other four, the south-east tower is pure Romanesque; the other three seen in the illustration belong to the Transition period.

R. PHÉNÉ SPIERS.

## MANSION AT POSSINGWORTH, SUSSEX.

THE Mansion which forms the subject of our illustration has been recently completed from the designs of M. Digby Wyatt, and is carried out with unusual care and completeness in every detail. We shall have another opportunity of illustrating this work, and defer till then a descriptive account of it. The proprietor is Mr. Louis Huth.

## OUR RAMBLER

## AT SOUTH KENSINGTON.

A BRAVE place for a ramble!—none better. Most attractive to those who go most often, and full of the work of the artist and the craftsman, is the South Kensington Museum. The library is no doubt already the best art library in the kingdom, and daily additions of books are raising its value from week to week. The collection of the Commissioners of Patents includes the germs from which all our manufacturing greatness has sprung. The loan collections throw open from time to time the best ornaments of private galleries to the inspection of all comers. The building materials and educational gallery, and even a museum of articles used for food, are laid out to attract the sober and the practical; while the Vernon and Sheepshanks pictures; the water colours; the photographs; and the matchless and priceless cartoons of Raffaele, are open to delight the lover of pictures.

For the moment let us put all this aside, and glance at that which, to the practical eye of THE ARCHITECT, may be supposed almost more attractive than any one of them—the buildings in progress. Few persons seem fully aware how much building is being carried on at the present hour on the South Kensington sites, or how extensive those schemes are which are now in course of execution. Fewer still are fully aware that novelties are being here introduced, especially in the decorative treatment of the new buildings, such as no architect or even builder who desires to keep up with the times can afford to neglect or ignore.

A ramble round the works in progress, and through the completed portions, does not afford so good an opportunity of explaining what the whole is to be as may occur hereafter. Perhaps, too, it would be almost unfair to make such a visit the occasion of any attempt to examine critically the architectural style and treatment of the portions already done. At any rate, this will not be attempted now, and we shall simply ask to be conducted over what is being done that is new or striking.

Of a recently naturalised branch of manufacture—that of terra-cotta—very remarkable specimens are abundantly used here. The works in progress in the Exhibition Road, the portions already completed of the great Quadrangle, and the works of the Albert Hall, all display excellently well the capabilities of terra cotta as a material for external decoration. Mr. E. M. Barry has used terra-cotta in the Charing Cross Hotel, and that at Cannon Street, for the decorative parts of his work; and here it may be said to serve as a substitute for stone, or a material intermediate between stone and Portland cement. Mr. Charles Barry, at Dulwich College, has largely em-

ployed very carefully made terra-cotta dressings, and he has in his building made use of the general forms of Lombard architecture. His terra cotta is, however, finished by hand before burning, and in this process receives treatment which straightens its arrisses, supplies undercutting to the enrichment, and altogether assimilates the material rather to artificial stone than to enriched brick. At South Kensington, on the other hand, we found a much less carefully prepared material in use, the arrisses have not been corrected, nor the enrichments touched by hand after moulding, so that the blocks, which are not of large size, have been burnt since they left the mould, and are built into the work as received from the kiln.

The most remarkable specimens of this terra-cotta work here to be seen are the columns designed by the late Godfrey Sykes (and almost his last work). These were intended for, and are used in, a large internal quadrangle, of which a portion only has been yet built.

These columns have enriched shafts divided into lengths by bands encircling them, and in this way a column of large size has been built up from pieces of really manageable dimensions. The enrichments on these shafts are very cleverly contrived in such a manner as to break the outline at many points, and thus, while adding beauty (for they are most artistically modelled), they conceal the irregularity of line which always occurs to a greater or less degree with terra-cotta, burnt as moulded—a circumstance which renders the material less suited for a plain shaft than for any other description of work.

Of the works in progress, one of the first to challenge attention is a new staircase. This staircase is of almost the simplest known form, the rise from one floor to the next being obtained by two parallel flights of broad stairs, with a spacious square landing on the half-space. The stairs are enclosed by side walls; a raking barrel-vault, or soffit, forms the ceiling of the flight, and a little domical vault covers the landing. A window is pierced through the wall at the half-space. When fully completed, this simple staircase will have its walls profusely decorated with panels of glazed majolica, set in mouldings of Parian or some similar cement. The richly-moulded panels of the ceilings will be decorated with mosaic pictures, and the window filled with stained glass.

The mosaic is, at present, for the most part represented by paintings of the subjects, and may not all be fixed for some time; but of the majolica decorations, a sufficient number are in place to show the adaptability of this durable material for the purposes of the wall-decorator. Panels of considerable relief, sparklingly bright in effect, and introducing colour, are here provided, which will wash, can hardly be destroyed, and can be produced in great variety. This appears an appropriate and very valuable application of a manufacture eminently English, and perhaps one which fortunately received from its early founders the most artistic impulse that England has yet seen given to any branch of her industry.

In our rambles—while endeavouring to form some idea of the general scheme of the Museum as it is to be among marks of change and alteration, temporary buildings, and expedients of all sorts, mixed up in apparent confusion with portions of the completed structure—our Rambler came upon a collection of sundry slaty greyish slabs, looking not unlike very large thin paving stones that had been washed in Portland cement, and learned, not without surprise, that they were mosaics (only lying face downward) for the decoration of the Royal Albert Hall. This building is to be of an elliptical outline, and round it, at a height sufficiently great to demand bold treatment, will run a frieze, boasting the magnificent dimension of 800 feet long by 6 feet 6 inches high, enriched throughout by figure subjects. This continuous girde is to be executed in mosaic, and as it has been determined to obtain designs of a high order of merit, several of our best artists have been employed to furnish them.

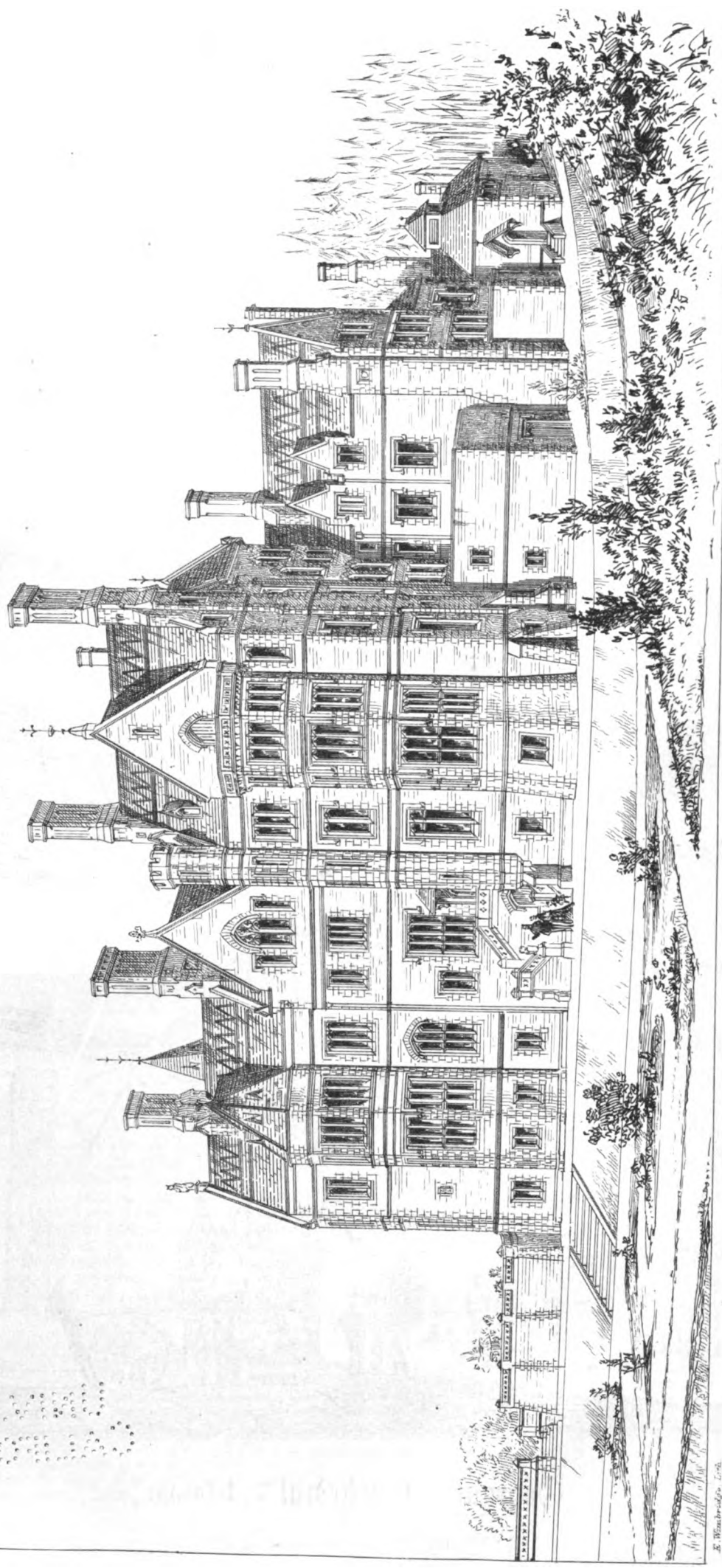
The process followed is this. The drawing is made with a bold black outline, one tint of buff and one of chocolate being the only colours, except black, employed. By an enlarging apparatus somewhat akin to a magic lantern, the image of a magnified copy of this outline is thrown on to a sheet of continuous cartridge, and there traced. The full-sized outline so obtained is then corrected by the artist whose work it represents; and from this the separate outlines of portions (of a convenient size for working) are obtained and distributed among the mosaic workers, into whose room we will follow them, pausing only for a moment to admire the great beauty of a vigorous outline by Mr. Marks, which at the time of our visit was in process of reproduction in this manner.

The mosaic is almost entirely worked by young women, and it is no small advantage that a new field for the labour of women seems in a fair way to be opened by their employment on this work. The room we visited, a bright and tidy *atelier*, contained a considerable number of mosaicists. Each has the paper on which is drawn an outline of the portion she is to execute on her table, and before her lie small trays of tesserae of the three colours named. The tesserae are little hard lumps of baked earthenware made by Minton, and closely resembling his paving tiles in quality. A hammer and chisel for chipping them where small pieces are required seem the only tools needed, and thus furnished, the mosaicists proceed to arrange the pattern; the back of their work being seen by themselves, while the face, which remains covered with the paper, is unseen. This work is light, and seems pleasant, and is rapidly done.

This *atelier* was not, however, confined entirely to mosaics of this simple character; some of the figures for the decoration of the south court (the part of the building best known to general visitors) were

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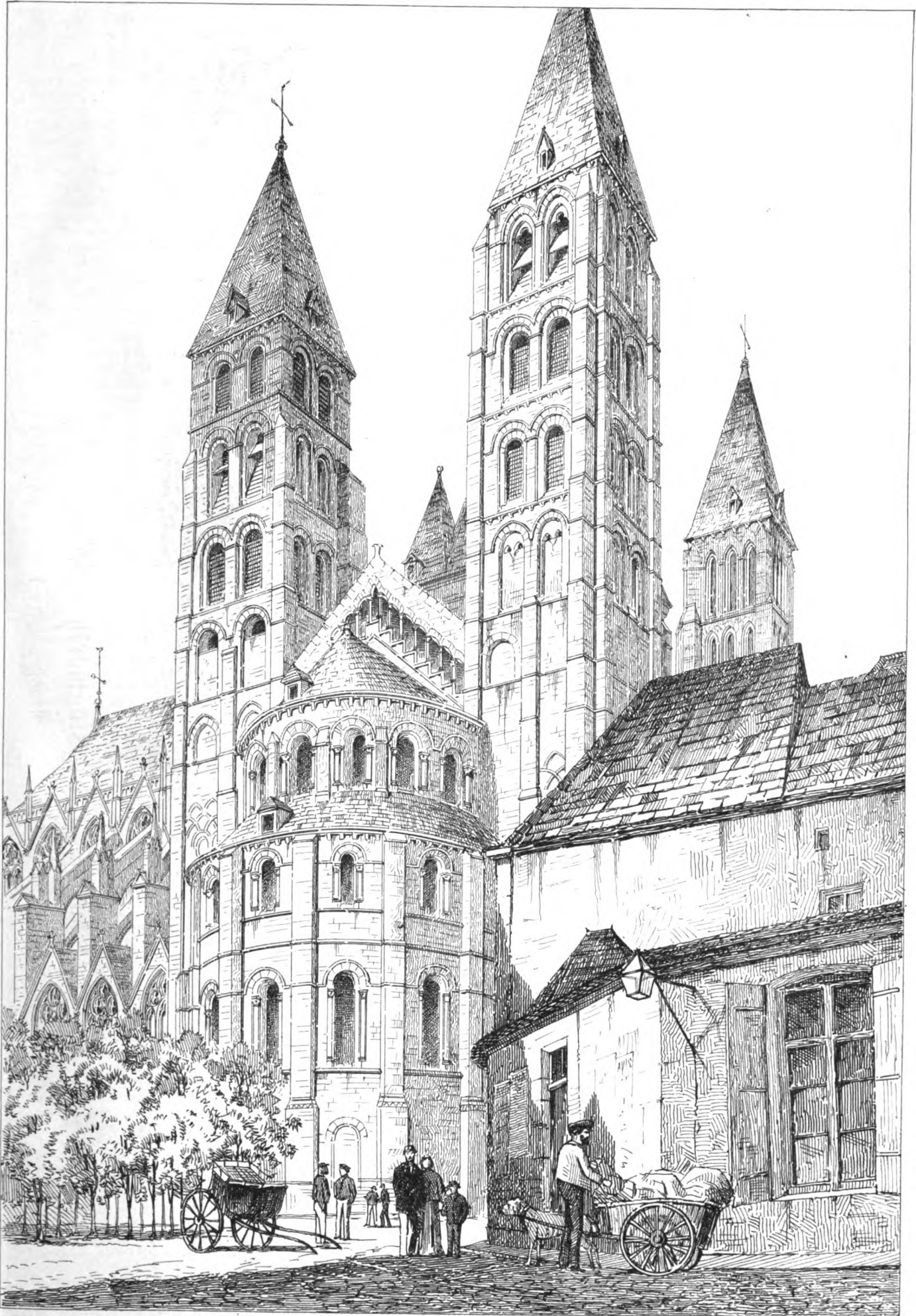
The Architect, Jun<sup>r</sup> 9<sup>th</sup> 1869



Mansion at Passingworth · Sussex :  
THE SEAT OF M<sup>S</sup>. LOUIS MUTH M. D. WYATT, ARCHT.

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in progress there, and two uncommonly clever heads, one of Mulready, the other of Michael Angelo, were shown us. These are after paintings by Mr. Barwell and the late Mr. Godfrey Sykes. Even though seen at the disadvantage that the roughly executed back, and not the face of the work could be inspected, these heads, like much of the mosaic work actually fixed in place in the south court, showed great mastery over the material.

To return, however, to the mosaic for the long frize of figures. The portions when completed in sizes sufficient to be suitable for transport and framing, are consolidated by simply adding Portland cement at the back of them, into the slabs which we saw at entering, and to which a slight curve is given to enable them to fit the work accurately. In that condition they will be fixed in the building, and it may be fairly expected that they will prove as imperishable as they undoubtedly ought to be charming.

The mosaics in the south court, the painted lunettes, and other art-work of the structure, must, like the whole of the contents of the Museum, be passed by here. We will conclude our ramble by passing across Cromwell Road, up under the incomplete arcades of the Horticultural Gardens, and taking just a glimpse at the works of the Albert Hall.

Among important works in progress in this country, the Albert Hall must appear in the first rank, alike on account of its great size and of the very long time that has elapsed since any important building has been erected in Europe in the category to which it belongs. It is startling to find rising in our fashionable quarter a building which, however it may differ in details, is in the main a Roman amphitheatre,—not, indeed, equal in size to the best known of such examples, but at any rate approaching them sufficiently near for comparison. The width of the Albert Hall within the walls of the highest gallery may be roughly stated at fully two-thirds the width of the well-known amphitheatres at Nîmes and at Arles, its length being something more than half that of either of these examples.

Such a building cannot fail to exercise a remarkable influence whenever it comes to be seen by the public. At present it is not completed in carcase, though much of the brick and terra-cotta work has been fixed. The vast sweep of its lines—the spacious interior occupied by a perfect forest of scaffolding—the large surfaces decorated with terra cotta of the sort already described, surprise and astonish the spectator who visits the works for the first time; and a glimpse at the plans and models of that large part of the work yet remaining to be done is fully as interesting as a peep at the accomplished work. To this building our Rambler hopes to return at a future day; but it is not necessary to put off till then the statement that the general outline of the design was by the late Colonel Fowke, and the building is being built from the plans of Lieutenant-Colonel Scott, R.E., and is being carried out by Messrs. Lucas under the superintendence of Colonel Scott, assisted by Mr. Gilbert Redgrave.

## SANITARY ENGINEERING.

By ROBERT RAWLINSON, C.B., CIVIL ENGINEER, F.G.S., &c. &c.

(Continued from page 10.)

It is not my intention to introduce into these lectures many tables because books of tables—such, for example, as Beardmore's—are ready at hand for reference; but, instead of tables, I shall state the results of my own observation and experience. Records of rainfall are obtainable by engineers, for Great Britain, the Continent of Europe generally, parts of India, China, Africa, and Australia; for New Zealand, North and South America, and many islands. In all these documents annual variations will be found to have been recorded; and in all there are dry seasons, and there are wet seasons. Parts of India have been deluged with rain, while other parts have been burnt up with dry heat. America has been wet when Europe was dry; and so, in like manner, it has been in other places and in other countries. There is no such thing as any general return of a season being either wet or dry over the whole surface of the globe.

The annual variation in falls of rain generally prevalent appears to be about as 1 to 2. That is, in different parts of Great Britain in one year the rainfall may be 20 inches or 40 inches, and in the next year it may amount to 40 inches or 80 inches; hence averages of 30 inches and of 60 inches result. Now, in any new district which may claim your attention (unless local facts establish any other conclusions), when you have obtained tables of the recorded averages of rainfall extending over a certain series of years, if you deduct one-third from these averages, it will give the driest year, and if one-third be added, it will give the wettest year. Thus in the Thames valley, with an average rainfall of 30 inches, the fall in any very dry year may be estimated at 20 inches, and in any very wet year at 40 inches. This calculation gives an average of approximate, but not of exact, accuracy; still, this may be accepted as a rough workable average. At the same time, it is most important always to take into consideration probable excesses, in either direction, above or below this average. In the construction of waterworks, when the engineer has to rely on water which he has to gather from the earth's surface, he must ascertain both the maximum and the minimum volume of such supply; for the elements will assuredly bring him to the test of that minimum as well as of that maximum. Nature does not give wet and dry seasons either alternately or in accordance with any fixed law. It may be now as in the days of Pharaoh, seven dry years may follow in uninterrupted succession. In India, where the professional services of the Royal Engineers are called into action, excessive variations of rainfall are but too well known. There also, where human life is so prolific, the means of sustaining that life (if there are no stores of water and means to use it) depend directly

upon the amount of rain that falls, and also in some degree upon the regularity of its falling. Hence has arisen the imperative necessity for devising works of irrigation based on strictly correct principles, of which some have been carried out on a grand scale, while others of equal magnitude have been projected. Since dry seasons invalidate averages, engineers who may work in India must keep in view the facts; and I desire to direct your particular attention to two other circumstances arising out of diminished rainfall, which will seriously affect the volume of water that the engineer might have at his disposal. These are, first, an increase of heat, the result of a diminished rainfall; and, secondly, in consequence of this increased heat, a greater proportionate amount of evaporation from the heated surface of the earth. Thus a diminished rainfall in such a country as India acts directly in causing an increased diminution of water, and engineers, consequently, must be prepared to experience droughts reduced in a much greater degree than two-thirds of any average fall of rain.

In England, from 2 to 5 inches of rain is the ordinary month's fall; and, as a general rule, such falls are sufficient to feed our rivers, streams, and springs; but in the course of last summer (that of 1868) a fall of 2 inches in seven days descended at such intervals upon the heated ground, that the whole volume of water was forthwith again evaporated, without having left any flow whatever to touch any waterworks. Similar causes would produce similar results, but under a far graver aspect, in India.

When about to form plans for waterworks, engineers will consider that they have to take into their calculations the elements, the physical aspect of the country, the substrata and the surface-area with which they have to deal, and the amount of reservoir storage that must be provided. And here I must add another word of caution, lest any engineer should be deceived by averages. The minimum supply is the one only true and reliable authority. This determines what volume of water may be regarded as certain even in very dry seasons. Such a guide as this, therefore, unlike ordinary averages, will send the engineer further afield than otherwise he would have gone, will cause him to enlarge the scale of his works, and induce him to store up more abundant supplies.

The aqueous vapour which forms rain, itself depending upon evaporation caused by the sun, is accumulated in clouds. These clouds drift away with the different currents of the atmosphere; and in their course they discharge a portion only of their rain upon the land, much of it falling from them back again into the ocean. Now, rain that falls from the clouds does not represent the area of the ocean's surface from which the water has been evaporated; consequently, in particular seasons, in accordance with the nature of atmospheric currents by which the clouds are carried away, a great accession of wet must take place in some one district and some one country, coincident with a great drought in other districts and other countries. This is what took place under our own immediate observation in the last summer, which certainly will long be remembered by meteorologists as a summer of extreme contrasts. In England, as also throughout the greater part of Europe, the spring and summer seasons have been exceptionally hot and dry; but in other parts of Europe, in many parts of India also, and of America, this same spring and summer was cold, cloudy, and exceptionally stormy and wet. These phenomena may be traced to a tendency which exists in nature to repeat excesses through a certain cycle. For example, if, from any special cause, the wind and clouds set in over any particular region where condensation and precipitation commence, these operations have a tendency to attract vapour from all sides to the same spot, and to repeat the condensation there until a change is brought about either through a process of exhaustion, or in consequence of the more powerful antagonistic action of some other natural agency.

The average volume of rainfall in England I have already stated to be about 36 inches. In some parts of India the average is as high as 300 inches; and this heavy fall takes place during the monsoons, which occupy about three months in each year. The actual full weight of the entire volume of the rain, however, falls within a single month. During the last year, in some parts of Bengal 135 inches of rain fell in twenty-four days. This was in the month of June, on the 21st day of which month 16.4 inches of rain fell. In Bombay the lower parts of the town were flooded to the depth of 4 or 5 feet; so that, even if there had existed main sewers as large as railway tunnels, they would have been filled for a time without materially lessening the surface water. Such sudden and violent excesses of rainfall, it must be observed, are not exclusively restricted to the tropics. They occur also in our own country, notwithstanding the comparative smallness of our yearly average. We have just seen how in Bengal on the 21st of June last there was a rainfall of 16.4 inches. This fall occurred within the space of the twenty-four hours of a single day; but in England, during a thunderstorm, as much as 2, 3, or even 4 inches of rain have been known to fall in a single hour. In the consideration of this question of rainfall for all practical purposes of engineering, there exists the truly terrible contingency of a sweeping destruction being brought about by a sudden storm, unless engineers extend their calculations beyond averages to maximum excesses. And, from the neglect of such calculations, most serious mistakes have been made in modern engineering, in our own country, in Europe generally, and in the East. In the wet season in Yorkshire, to which I have already referred (November 1866), two days and nights' rain swept away a large masonry viaduct, belonging to the Midland Railway, which could not have been erected at a cost of much less than 200,000*l.* or 300,000*l.* When this viaduct was constructed, the engineer had not contemplated, as a possible contingency, that the small river which flowed through a wide valley might swell into a devastating torrent; and, consequently, when the great storm came his foundations were carried away, and the whole viaduct became a heap of ruins. In other parts of the world, and particularly within the tropics, engineers have to contend with floods of a much heavier and more destructive character than the worst that have been known to occur in England.\* In England, some of

\* Inundations have taken place during the past autumn (that of 1868) of the most terribly destructive character, in Switzerland, and especially in the cantons of St. Gall, Grisons, Tesin, Valais, and Uri. Upwards of seventy human lives are known to have been lost; 25,000 acres of cultivated land have been covered beneath heaps of debris; more than 100 bridges have been swept away, and a still larger number of houses

our rivers—as the Eden at Carlisle, the Ouse at York, and the Thames in its upper branches—rise, from their dry water-bed to their flood-water height, 20 feet vertical; but in South Africa the rise of rivers is not less than 60 or 70 feet. In Australia, some rivers have actually risen 120 feet; in Italy, and in Spain, roaring torrents rush furiously along where, in the previous year, there existed only dry ravines. We have all lately learned that similar excessive changes from dry valleys to the beds of sweeping torrents occur in Abyssinia. If engineers desire to construct works that will prove safe and enduring, these excesses must be taken into their calculations. Meteorology, indeed, is to engineers a study not only of infinite value and importance, but one that is absolutely necessary.

Whether local written records of heavy and exceptional floods be or be not obtainable by engineers for their instruction and guidance in new countries or districts in which they may have to construct works, or to direct military or other operations, it is always an important part of an engineer's duty to examine and study with care the physical aspect of the scene of his future action, with a view to ascertain what Nature herself may have recorded, after an expressive and significant fashion peculiar to herself, concerning her own operations. Nature rarely fails to write her own story, either of uninterrupted quietude, or of occasional floods, on the sides of mountains and hills, and along the course of valleys and ravines; so that watchful and intelligent observers may derive from the visible memorials of the past the most valuable suggestions for their own present guidance. I remember well a painful illustration of what has just been said, which took place before my own eyes in the Crimea. At Balaklava, the Sardinian army took up a position in a valley where some of our own works of a temporary character were also constructed. On one of the Sundays in the month of May, 1855, a sudden flood swept through this valley, carrying with its waters the ruins of the works that impeded its progress, and causing both the sacrifice of many lives, and the destruction of property of very considerable value. Now, the possible occurrence of such an event ought to have been foreseen, by the aspect of the locality itself, and the occupation of that valley ought to have been prevented. The bare mountain sides, and vast masses of disintegrated soil and rock so palpably had been washed down during storms of rain from higher ground, that they told significantly, not only of floods that had taken place there, but of the unquestionable probability of future repetitions of similar destructive incidents.

When I come to treat of the construction of waterworks, I shall have to revert to what has been said on the subject of excesses above averages, and it will be my duty to impress upon your minds the absolute necessity of forming a correct estimate both of the area that is to be brought under control, and of the maximum volume of water with which you will have to deal. It is well for the engineer to make himself master of all details connected with rainfall; but, at the same time, he must remember that he has not to apply his knowledge of such matters upon a uniform principle on every occasion—he is not to make a rule-of-three proposition of area, rainfall, and flow of water from the ground, and then act systematically upon the result, be the circumstances and requirements what they may. The engineering treatment of water differs essentially, when the object in view has reference to sewers and drains, from what may be necessary in connection with waterworks. In countries where there may be a rainfall of 16 inches in twenty-four hours, it would be mere folly to contemplate the construction of sewers which would be capable of carrying away, beneath the surface of the ground, such vast volumes of water. In cases of this kind engineers have to provide means for safely conveying away, over the surface of the ground, whatever flood waters may have fallen. Sewerage and drainage, while in some degree affected by rainfall, are of a different character from waterworks. Main sewers must be projected and constructed on principles that have a direct bearing upon their own offices. It will be understood, therefore, that I now am strongly pressing the necessity of studying and acquiring a sound knowledge of the excesses that are committed by nature, in order more especially to introduce the consideration of one of the two great practical questions that will be discussed in the following lectures—the question, that is, of waterworks, both for impounding rainfall waters so as to provide for water supply, and also for controlling flood waters and preventing their destructive operation. In subsequent lectures I shall be able to apply, and I hope with advantage, the elementary information contained in the present lecture.

The conclusions to be drawn from the foregoing remarks may be summed up as follows:—

1. Civil and military engineers ought to study meteorology, as liable to affect sanitary engineering works.
2. Main sewers, drains, and waterworks are affected by rain, both in drought and when in excess.
3. Evaporation from the salt ocean produces fresh-water, which forms springs, streams, rivers, and lakes.
4. The volume of rain which falls in any one year may be described as due to the evaporation and condensation of that year.
5. The fall of rain is influenced by terrestrial and other causes, and man only interferes with such causes in a fractional degree.
6. An engineer, before commencing works, should study the geology, aspect, contour, and other peculiarities of a country, and learn, as far as may be practicable, the extent of meteorological excesses to be expected in that section to be dealt with.
7. Rainfall varies from an average of 300 inches annually at the tropics, to twenty inches annually, as on the east coast of England. Averages must not, however, be relied upon. A tabulated list of excesses, both of drought and of flood, will be of more value to engineers, civil and military, than ordinary records and averages deduced from them.

destroyed, or seriously injured; many miles of road also have been broken up, and the railway of the Rhine Valley has not been in working order for more than thirty days. This wild outburst of the elements, while it declares that the powers of nature are not less terrible now than in past ages, warns engineers not to rest content with calculations based on ordinary averages. It must be added, that at the time of these fearful inundations in Switzerland, the waters of Lago Maggiore rose 18 feet above their customary level. As another instance, bridges recently erected in the colony of Natal, at a cost of some 40,000*l.*, have been swept down this autumn (1868) because the engineers had failed to provide for such a flood.

8. Although the annual fall of rain is so wide apart as 300 inches at the tropics, and twenty inches in England, a thunderstorm in England may, for a short period, be as violent as in the tropics, and comparatively as destructive.

9. Seasons are very little modified in their meteorological character by any works of man. The rays from the sun acting on the ocean, and causing the great ocean and aerial currents which generate and move vapour and cloud, can only be affected and modified by cosmical changes.

N.B.—The permanent gases of the atmosphere are nitrogen, oxygen, and carbonic acid. The first two are always found in nearly unvarying proportion of 80 per cent. of nitrogen and 20 per cent. of oxygen, with carbonic acid in a fractional proportion—from 3·7 to 6·2 in 10,000 parts.

## NEW CANAL AT AMSTERDAM.

THIS work is intended to ensure a direct communication between the narrow part of the Zuider-See, called the 'Y,' opposite the harbour of Amsterdam, and the German Ocean. It is expected that by this means the journey by water will be shortened by at least twenty-four hours, and the undertaking is looked upon by the Dutch as one of no small advantage to their chief commercial city, inasmuch as the Zuider-See by no means affords either sufficient safety or depth of channel enough for large ships. The works undertaken as yet consist in the erection of enormous sluice gates both in the 'Y' and at the other end of the future canal, in the embankment of the sea of Wijk, in the cutting of the canal itself through the low-lying districts of Velzen and Beverwijk, as also in the construction of a harbour at the junction of the canal with the German Ocean. The total length of the canal will be 23,000 metres (or rather less than 8½ miles), by a width of 197 feet at the level of the surface of the water, and a depth of 24 feet (the latter equal to that in our East India Docks). The sides of the canal are being very carefully built in large blocks of a sort of coarse granite, the earth forming the backing being carried to the site by a narrow-way railway, specially constructed for the purpose. The total cost of harbour, canal, embankment, and sluices is estimated at 27 millions of Dutch guilders (85,000*l.*), of which the Government pays down 2½ millions, and guarantees an interest of 4½ per cent. per annum on 2½ millions more. But the chief portion is capital subscribed in England by a company, who will become the proprietors of all lands reclaimed by the works we have described. The entire distance, forming, as we have shown, a short cut from Amsterdam to the sea, will probably be ready for traffic in 1875.

## THE HANDY-BOOK OF HOUSE-BUILDING.

### CHAPTER I.

*Continued from Page 6.*

#### LIVING ROOMS.

THE situation of the Billiard Room is often a little remote from the main house, partly because it is often smoked in, and the smell of smoke is unwelcome among family rooms; partly because the players may prefer their game to be to a certain extent undisturbed; but chiefly because no ingenuity can easily convert a room encumbered with so large a piece of furniture as a billiard table in the centre of its floor into a useful reception room, as one of a suite. This room ought, if possible, to be on the ground floor, in order to secure a solid support for the legs of the billiard table. If it is on an upper storey, an extra strong floor must be provided. A top light, free from shadows, and interfered with by no other window, is required. A recess, with a bench in it for spectators, is useful in this room, and it will be advantageous for the floor of this recess to be one or two steps above the general floor-level. 18 feet by 24 feet is the smallest room in which a full-sized table can stand with perfectly sufficient space round it for the players. A dressing room ought to be appended to the billiard room, unless a cloak room adjoins it, and is provided with convenience for washing, &c.

A Smoking Room should be cosy and snug, warm and well ventilated. It is best to detach it well from the other parts of the house, but not so as to oblige those who resort to it, to go out actually into the open air. Sometimes, if a good view is obtainable from some rather secluded room on an upper storey, the necessity for going up stairs will be tolerated by the smokers; but such a situation is not to be preferred for the smoking room.

The Gun Room is required only in country houses; it should be close to one of the secondary entrances to the house, and requires to be fitted up with an abundance of racks and cupboards for guns, fishing-rods, &c., and washing apparatus, and conveniences for cleaning guns. It forms a kind of link between living rooms and rooms for service, and is best placed when between those two portions of the house.

The Odd Room has claims which ought perhaps to have earlier procured it notice, for it rarely can be spared, even by families who can readily dispense with several of the other rooms in our list. In fact, it often replaces one or even more of them. The uses for such a room vary with the favourite amusements or occupations of different families; in one case it is required for a workshop, with a turning lathe or a bench; in another for a museum; in a third it is a children's play-room. Often it serves all these purposes in turn, and in addition, discharges occasionally the functions of business room, or gun room, or both. A smallish apartment will ordinarily suffice; and when there is a second, or luggage, entrance, the odd room should be approachable from thence.

It is not proposed here, while treating of ordinary living rooms, to notice those which rise out of exceptional circumstances or wants, or those which are solely devoted to state receptions. The list of these rooms includes the private chapel, ball room, orangery, sculpture gallery, picture gallery, music room, private theatre, state, and drawing and dining rooms. For whatever has to be said about any of them, an appropriate opportunity shall be found hereafter.

The Conservatory is closely connected with the series of living rooms, and is an appendage which adds ornament and pleasure to the smallest as well as the largest house. It is more pleasant to enter the conservatory direct from one of the living rooms than from a corridor, or even from the hall; and when it opens out of the drawing-room, it is more ornamental and useful than it can well be in any other position. It is very unfortunate for this appendage to be so placed that it cannot be entered from any part of the house without going into the open air. In cases where plants grow in the conservatory and are brought forward there, a sunshiny aspect and much light are indispensable. In establishments where there are other green and hot-houses a constant supply is kept up of plants in pots or tubs, grown elsewhere and brought here when at their best, and only retained so long as they retain their full beauty. For such purposes the receptacle ought not to have too much sunshine, need not even have a southern aspect, and may be only partly of glass. In either case shelter from the prevailing wind, protection against snow, plentiful ventilation, sufficient heat well under control, good stands for displaying plants, and, what is very often neglected, sufficient space of path to walk among the flowers without inconvenience, are the requisites of a good conservatory.

The Hall is the link between the living rooms of the house and the corridors and communications. In a large country house it is often a room as spacious and almost as comfortable as the dining room or library. In a small town house it is nothing but a short and not very roomy corridor. In a house of formal disposition of plan it may be appropriately termed the saloon. In some Elizabethan mansions it is either replaced or supplemented by an ample corridor known as the gallery.

Following the course laid down, and considering first the case of a country house without limitation of site, we usually find the hall of such a house spacious and comfortable, giving access to most of the principal living rooms, and ordinarily used as a kind of lounge, while on grand occasions it does duty as a banqueting room or ball room. The hall is always best when roomy in proportion to the size of the house. To a town house nothing gives a greater air of dignity than a spacious entrance hall, and in a country house this is often expanded to become—as it was in the Gothic and Elizabethan mansions, which have to a great extent formed our models—one of the most important apartments of the house, and is used to some extent as a lounge as well as for access. As soon as the hall begins to take anything like the character of a room, it ought to have an open fireplace, and to be in some way screened from the entrance door by a lobby.

The principal staircase, to which we shall recur presently, is sometimes placed actually in the hall, sometimes opening out of it. A billiard table is also sometimes placed there, but can seldom be well enough lighted in such a position.

Close to the hall in large houses there ought to be a cloak-room, with fittings for washing, and adjoining conveniences; this ought to be directly accessible from the outer lobby if there is one.

The hall may almost be regarded as the lungs of a house. It is usually essential both to the comfort of a dwelling-house of any size and to the preservation of it from injury through damp, that an efficient warming apparatus be provided. This will best fulfil its purpose if it be caused to heat the air in the hall, staircase, and adjacent corridors, an office very inadequately performed by an open fire; for though nothing can replace the cheerfulness and direct glow which such a fire imparts, to the great comfort of those actually using or passing through the room, it does little towards spreading an atmosphere of warm air throughout the whole house. An apparatus in which water at low pressure circulates through iron pipes will best heat the air if properly constructed. The high-pressure systems, in which the pipes at times attain an extraordinary degree of heat, are highly objectionable for this purpose, as they injure the quality of the air; and on the same ground a hot-air apparatus, though on some accounts superior to the high-pressure hot water, is generally found decidedly less pleasant than the low-pressure hot-water systems.

The putting of living rooms together so as to secure good access to each, and suitable aspects for all, often taxes the ingenuity of the architect to the utmost. In a house of considerable size, and where the choice of aspects is tolerably unfettered, a satisfactory arrangement is to secure a south-eastern frontage for the dining room, with the drawing room on the adjoining or 'return' front, namely, the front which looks south-west. The living rooms will then form an L-shaped block, and may come in this order:—at eastern end of south-east front, morning room; at centre of same, dining room; at angle, drawing room, with one side south-east and the other south-west, and windows in both; beyond that, library, with windows to the south-west, and also north-west. An example of this plan, omitting all the remainder of the house, will be given hereafter; and—though often much modified by circumstances, and of course out of the question in ordinary town houses—the arrangement of rooms here shown may be regarded as the normal modern English arrangement, access being given from a central hall. For each principal living room there is a suitable aspect, or, as the Scotch call it, *exposure*, which secures sunshine at the right time of day.

In ordinary situations an eastern or south-eastern aspect is best for the windows of a morning or breakfast room, which then catch the earliest sun; a south-eastern or southern aspect suits a dining room, which ought to be sunshiny in the morning and at lunch-time, but in shade at the ordinary hour of late dinners. The drawing room requires the afternoon sun most, but is benefited by the morning sun as well, and is therefore best suited by a south-western or a southerly aspect. For a library a good north light is desirable in case painting or drawing be practised, or a microscope much studied in it; but such a room ought to have, in addition, light from a sunshiny quarter.

No living room, except a billiard room, and sometimes a hall, ought to be so situated that the direct sunshine does not at some time of the day enter it.

Before discussing the modifications in living rooms, and their arrangement, which a town site necessitates, it remains still to notice sundry considerations relating to comfort, and to consider the general question of *treatment*—that is to say, of all that relates to the appearance of each room as an architectural feature. (To be continued.)



'OUR RAMBLER' AT THE NEW INDIA OFFICE.

SIR,—In your 'Rambler's' description of the New India Office, there are, I cannot help thinking, several points on which he bestows somewhat indiscriminate praise.

I therefore venture to make the subjoined remarks, in a spirit, I hope, of the most fair criticism, feeling that amongst so very much that is admirable, the features of the building to which I would call your attention are really open to question. I refer, more particularly, to the principal staircases.

I cannot but think that the staircase is one of the chief architectural features of a good interior, as it is there that the greatest heights and open spaces are generally to be found, and a successful treatment and combination of the raking and horizontal lines is one of the proofs of artistic and architectural skill. But in the India Office every difficulty of this sort has been evaded by simply building a well, with arcades, &c. round it, and then, on a huge frame of iron girders, carrying the steps, cutting the architecture in all directions, and producing the most discordant lines.

Entering with 'The Rambler' from the great quadrangle, let us notice the first staircase we come to. The first landing is carried on girders, supported by a wonderful pile of stone-work, and the upper flight cuts the arches, from which it is not distant more than a few inches, in a most unpleasant manner.

Exception may also fairly be taken to the balustrade, which is anything but pure in style, far more like plaster than stone work.

There is a smaller staircase at the south-west angle of the Sultan's quadrangle, running up without the least connection with the walls, and treated in this apparently temporary manner.

But it is in the great staircase that this peculiar treatment is the most prominent.

Everything here seems built up within the staircase walls, and not designed *with* them. The octagonal dome does not appear to be in the centre, as there is, at a great height, a sort of gallery running across, cutting off a part of the ceiling; and, of course, the effects should all be studied from the ground and first floors, as very few persons would mount to the top floor to find out whether the dome might really be in the centre or not.

The iron girders are here most unpleasantly prominent, and carried on all sorts of little heaps, some of them decidedly pretty designs in themselves, but slightly suggestive of cenotaphs.

There is one girder running right across, a little above the level of the first floor, which has the most unpleasant effect of hitting the heads of persons coming upstairs, and in no case do any of these girders, so far as I remember, show themselves to be girders. They are all cased or plastered.

The balusters of this staircase also struck me as being so far apart as to give one a sensation of insecurity.

There is one thing more to which I should like to refer, and that is the imitation granite pilasters in the corridors round the interior quadrangle. One would think a great public building could do without this, and what has been so lavishly expended in carving would have well paid for real granite.

If your 'Rambler's' wanderings should take him into the Foreign Office, I trust he will compare the very coarse panels carved on the piers of the grand staircase in that building with the beauty and delicacy of the Raffaelesque panels in the India Office.

I am, Sir, yours obediently,  
LONDON, W. SCRUTATOR.

FALL OF A SPIRE AT COLCHESTER.

DEAR MR. EDITOR,—It is currently reported that the spire, which you state in your last number was blown down at Colchester, was that of the Congregational Chapel in the Lion Walk, and not that of a church. It would be interesting to have some particulars of this occurrence, and of the causes, if the architect could discover, and would favour you with them.

It is to be hoped that this is not one of those occurrences due to the insane desire for cheap magnificence, which led Pugin to the indignant remark of—'Say 50*l.* more, and have a tower and spire.' If this be so, it is a lesson important to be learnt by chapel-building committees.

I am, &c., COLCHESTER.

THE APPROACHES TO WESTMINSTER BRIDGE.

SIR,—I am anxious to direct your attention to the present condition of the gradients of the road and footways that form the approaches to Westminster Bridge, in the immediate neighbourhood of which, as you are well aware, I happen to have been for some time established.

I should have continued to suppose that these approaches still were, as they so long appeared to have been, in an unfinished state, had not the intention to leave them as they now are been suggested to me by the erection of the new railings on the south side of the Middlesex approach, and between it and New Palace Yard. These railings have evidently been adjusted to the footway at its existing level; but, at the same time, their position suggests that the important question as to whether the surface of the footway is or is not at a right height with reference to the bridge, of which (being a part of one of its approaches) it forms a part, has not been taken into consideration.

Westminster Bridge, as seen from its own roadway, is undoubtedly one of the finest structures of its class in existence; but, to make the approach on the Middlesex side worthy both of the bridge itself and of the position which it occupies, it appears to me that it will be absolutely necessary to carry the roadway at one uniform slope from the abutment of the bridge down to the crossing at Parliament Street. Now, in order to accomplish this, the new railings would have to be taken down, as a preliminary to making arrangements for their being fixed again at a different level; for, if the approach to the bridge were to be made on the plan that I have pro-

posed at the end of the roadway nearest to the clock-tower, the masonry upon which the railings now rest would either be buried altogether or very nearly so, while at the Parliament Street end this same masonry would stand disclosed to its full height. My suspicion that it is the intention to leave matters in their present condition has been strengthened by the circumstance that the northern footway, which had been taken up in consequence of the works of the Underground Railway, has been replaced, and again thrown open to the public in a state which shows even a greater disregard to levels than is the case with the southern footway. For what reason, real or apparent, the northern footway was not raised to its proper level before it was given back to the public, I am altogether unable to surmise. The carriage-way of this approach partakes of the faults of both the footways, and, accordingly, in addition to imperfections of its own, it has one side higher than the other to suit the several footways. I may give a more clear explanation of the state of this approach to Westminster Bridge as follows:—If longitudinal sections were taken along the carriage-way and each of the footways, the parts of these sections on the bridge would show slightly convex profiles; then, when abreast of the clock tower, all three sections would exhibit a sudden dip; and, finally, from thence to the crossing at Parliament Street, each one of the sections would be found to give a different irregular concave profile.

Whilst in the neighbourhood of the clock tower, I may as well point out to you (assuming that you have not already observed it) the peculiar arrangement of the steps which, immediately at the foot of the tower, lead down from the bridge-approach towards the Houses of Parliament. These steps are generally shut off from the footway by two iron gates which, in the act of opening (for they are intended at times to be opened), roll on wheels into recesses, one on each side of the gateway-space. The wheels which thus carry the gates traverse a raised iron rail placed directly across the opening, and at a few inches from the edge of the uppermost step, and consequently in the best position possible for expediting the descent of the steps by tripping up unwary passengers and sending them down headlong. How far the use of these steps, with the attendant privilege of descending them after the fashion I have just described, may be available by the general public, I am not certain; but I presume that the iron gates will always open at the bidding of any member of either House of the Legislature, and I hope that by inserting in your columns what I am now writing, you will enable me to give to noble lords and honourable gentlemen a warning which may save at least some of them at the commencement of a new Session from taking a false step that might lead to very serious consequences.

I am, Sir, faithfully yours,

Westminster.

A CIVIL ENGINEER.

#### CONCRETE BRIDGES.

SIR,—I have seen in a late newspaper article some account of the extraordinary Concrete Bridge, of 75 feet span and 7 feet 6 inches rise, lately erected for the Metropolitan District Railway over the cutting between Gloucester Road Station and Earl's Court Road.

I observe that the writer of the article in question remarks that a similar bridge of inferior material, erected on the same site, after a short time proved its utter worthlessness by yielding under its own load when the centres were struck, while the existing bridge has borne a strain of 15 tons 2 cwt. per foot.

Having lately had occasion to experiment upon the materials and proportions of concrete for some sea defences, which I am now superintending at Margate, I should be glad to know whose cement has been used in these remarkable concrete bridges, and the nature and source of the ballast employed.

W. LANE SEAR, Architect.

Ramsgate, January 6, 1869.

#### REVIEWS.

LES ARTS DÉCORATIFS À TOUTES LES ÉPOQUES. Par Édouard Lièvre. Folio. Paris: A. Morel.

The first series of a work which is to form, when complete, two volumes, each containing sixty plates, to be published in ten quarterly parts. The plates are mostly printed in colours, and are all executed in the best manner by the well-known firm of Mercier et Cie., of Paris. The following list of the principal plates in this first series will indicate the general scope of the work:—Pattern of Genoa velvet, 16th century; book, with pierced metal mounting, German work of the 16th century; an exquisite little enamelled casket, of the same period; a curious faience plate, of the same century; a Sicilian vase, 4th century B.C.; a carved door, with case complete, 16th century; a square tray, of Rouen ware, 17th century; an Urbino tazza; and some beautiful patterns of French and Venetian textile fabrics of the 16th and 17th centuries. The work, if completed as well as it is commenced, will form a rich portfolio of ornament.

LES FRISES DU PARTHÉNON. Par PHIDIAS. Twenty-two plates reproduced by the Phototype process of MM. Tessie du Motay and Maréchal, by G. Aroza & Co. Folio. Paris: A. Morel.

A charming portfolio, prefaced by a short notice of Phidias and his works by M. Charles Yriarte. The portions of the frieze represented are those which were detached by Count Choiseul-Gouffier, when ambassador of France at Constantinople, from the Eastern façade of the Parthenon, and are now to be seen in the original, or in the form of casts in the Antique gallery of the Louvre.

The plates are admirably executed, the colour being of a neutral tint or warm grey, and the tone excellent, the shadows being generally dark enough for effect and no more. The portfolio presents the best collection that we have seen of artistic reproductions by the phototype process.

The figures are about eight inches in height, large enough to give the smallest details with effect. The originals have suffered considerable damage from the effect of time, but they are less injured than the majority

of the specimens in the British Museum, while some few are almost as perfect as they were left by the marvellous sculpture twenty-two centuries ago. Amongst the least injured are several groups of two or three horsemen, in which the injuries are confined to one or two spots, the whole of the heads and limbs, both of men and horses, being intact; a group of two men on foot, an old man supporting himself by means of a crutch, which presents the peculiarity of being placed beneath the left arm while the lower part is held by the right hand, and a fine figure of a youth half naked; an exquisite group of two virgins and two young men, in which the heads have not suffered the slightest injury, and present types of great beauty, the other parts of the work, even to the beautiful taper fingers of the young women, being all but perfect; and lastly, a group of four vestals, whose heads are in a complete state of preservation, but, unfortunately, the shadows in our copy are somewhat too dark about the faces, a fault that only exists in a few instances. The beauty of the modelling, whether of the human figure or of the drapery, in these two last-mentioned examples can scarcely be surpassed, and artists and connoisseurs will certainly hail these charming reproductions with delight.

#### ART EXHIBITIONS.

THE French authorities have just issued the regulations for the Paris Salon—the Annual Exhibition of Works of Art for 1869. There are but few changes made in the conditions, and these are certainly improvements. The first of these changes is the exclusion of paintings on enamel, china, or faience, whether original or copies, serving as decorations for usual objects, such as cups, tazzas, vases, and plates, these being considered as belonging to industrial art. The second is the confirmation of a change made last year, on the suggestion of the editor of the *Moniteur des Arts*, namely, that artists absent from Paris may vote by letter for the members of the jury. The principle of popular election has now been thoroughly tested, and, in spite of the anticipations of many persons, has been found to work admirably. Two-thirds of the members of the juries are elected by the votes of artists who have already received medals or honours, whose works have been admitted to previous exhibitions, and even those who have sent in works for the coming exhibition; but each artist votes only in his own section of painting, sculpture, architecture, or engraving. The juries thus elected decide not only on the admission or rejection of the works sent in, but on the award of all the medals, with the exception of the two great medals of honour for painting and sculpture. The administration nominates the remaining third of the jurors.

The effect of this artistic suffrage has been to place the very best men in France on the juries, and to put an end to complaints which under the old system of nomination were numerous, if not always well founded. It is to be remarked, however, that the principle is one of very questionable application in the case of international exhibitions. It was tried at Havre the other day with this result, that although, to our knowledge, the names of several eminent Englishmen were sent in for election at the request of the Commission, only one, we believe, was elected! In at least two sections of that exhibition—those of Naval Construction and Chronometers—England was pre-eminent, yet her proposed jurors were rejected. This was, to say the least of it, not right, and furnishes a warning for the future.

Another and very liberal rule introduced for the first time this year is that not only every exhibitor will receive his card of admission, but also all those who have obtained prizes at former salons, although not contributing to the coming one; the works of such artists are always admitted without examination, and it has been complained that some of these were evidently sent with no other object but to obtain free admission. The last point to be noted is, that the administration binds itself to expend in the purchase of works exhibited a sum equal to the gross total received for admission.

The *Union Centrale des Beaux-Arts appliqués à l'Industrie*, an active private Society, patronised by the Government, which has its library, museum, and lectures, and has already organised one splendid exhibition of art manufactures ancient and modern, announces another to be held in the Palais de l'Industrie in August, and to remain open for three months. The scheme includes not only industrial art in every form of the present and past times, but also works of art intended for reproduction, models and designs for artistic productions, and the works of all the drawing-schools of Paris and the departments. The collection of porcelain, faience, enamels, carvings, and other productions of past ages at the last exhibition of this kind was magnificent, the finest probably ever brought together in one place, and there is little doubt that the coming exhibition will be equally remarkable. The directors desire, in their own words, to bring together examples of all decorative arts of past epochs with a view to the instruction of artists and students of the present time; and with the same view they invite contributions of original models for objects of art, decoration, &c., left by the old industrial artists. The Society possesses in its library and museum, in the fine old square known as the Place Royale, an excellent collection of old designs for decorated fabrics and other ornamental productions. Lastly, the exhibition is to include a gallery of old portraits, to illustrate the history of costume. The Society has published a long programme of its views and intentions, to which, probably, we shall have occasion to refer at a future time.

#### Architectural Drawings.

The very excellent exhibition of 'Sketches and Studies' by members of the Society of Painters in Water Colours, that for several weeks has been open to the public in the gallery of that Society in Pall Mall East, contains a small group of four of the views that Joseph Nash, now a veteran in his art, delights to paint of the fine old mansions of England as we may consider them to have appeared with all the appliances and associations of their own olden times. We notice these four excellent drawings, to record with cordial satisfaction their presence in the exhibition which they adorn.



**PRACTICAL COMPENSATION.**

AS there is no subject upon which professional men are so apt to differ as that relating to the effects of compulsory removal upon house or landed property, it may be thought that we have adopted a somewhat premature title for this article; but we are led to follow out an idea under this heading in consequence of more than one significant and important compensation case heard in the Lord Mayor's Court during the past week. We need hardly premise that at all events our London readers are perfectly *au fait* as to Holborn Valley improvements that have been made by the Corporation, and we will suppose that gentlemen afar know by report of the vast alterations that have attended the City scheme, while the great contests that have been held over the profits of compensation are too notorious to need either notice or comment at our hands on the present occasion. It will be sufficient for our purpose then to state shortly that on Monday was commenced the hearing of the first of a series of claims for compensation against the Corporation of the City of London for compulsory removal and consequent loss of trade, all the cases arising from one house. In the first case, Mr. Abrahams, the claimant, was a glass cutter and paper hanger, of 88 Skinner Street and 1 Farringdon Road, and he held a twenty-one years' lease of these premises, dating from 1857; the annual rental being 150*l.* He had let off a portion of the house to Mr. Sydney Butcher, a tobacconist, a second claimant, who had sold his business to Mr. Coombs, a third claimant; and there was yet a fourth in the person of Mr. George Butcher, who carried on the business of a coal merchant. Now it is not our intention to go through the evidence called in these cases, inasmuch as it must be patent that Mr. Abrahams, as the holder of a lease that would not expire until 1879, was entitled to compensation for being turned out of his premises. We shall simply state that Mr. Lloyd asked the jury to give his client something very much like 10,000*l.*; and in support of his proposition he called Mr. Samuel Green (the well-known surveyor), who valued the lease alone at 5,803*l.*; Mr. E. Fox, who put it at 5,530*l.*; and Mr. J. Young, who considered it to be 5,622*l.* Of course this was upon an improved rental, based on the increased value of property, and the supposition of a great influx of business had the Corporation left the Ho'bourn valley in its original condition, but of greater consequence to tradesmen by reason of adjacent alterations and new traffics. To the evidence of the professional witnesses we have only to add that of Mr. Cape, the accountant, who gave details of the sales and stock in trade for five years, carrying out the net profit at 97*l.* per annum. In short, the net claim was, as we have stated, as near 10,000*l.* as possible, and it was this sum that was left by Mr. Lloyd to be picked to pieces by Mr. Hawkins, Q.C., who, declining to call any technical evidence on the part of the City of London, proceeded to demolish the figures so imposingly set up in column by his adversary, and the practical result was that the jury found that the claimant was only entitled to 4,593*l.*—not so much as he was offered by the Corporation—at least, so we were informed; and here we leave the first case. The second claim was that of Mr. George Butcher, the coal merchant, who asked for 3,514*l.*; and in support of his demand he called Mr. Booth, who valued the lease at 2,042*l.*, Mr. Rowley and Mr. S. Green reducing it to 1,164*l.* 10*s.*; but to these figures must be added trade compensation; and yet the jury only awarded 702*l.* 3*s.* 6*d.* In the third case Mr. Sydney Butcher asked about 2,000*l.*, Mr. S. Green and Mr. Booth assessing the lease at 1,127*l.*, Mr. Farmer giving 1,161*l.* Here the defendants departed from the beaten track, and called Mr. Pownall and Mr. Trist to show that the claim was out of all reason, the result being a verdict for *nothing*. The fourth case was that of Mr. Coombs, who had bought Mr. Sydney Butcher's tobacco business, who gravely told the jury that he intended to pay for it out of the proceeds of this claim, and who admitted that his expenses were in excess of his income. Mr. Coombs claimed 1,400*l.*, and the jury awarded 15*l.*

It will thus be clearly perceived that theoretical compensation, amounting in all to 16,914*l.*, was reduced by a practical jury to 5,450*l.*; and this one glaring fact is far more important than all the 'large-briefed' forensic eloquence of the compensation bar of England. We confess that we totally disagree with a great deal of the system now prevailing; and in the first instance we would urge that the idea of sending the jury in cabs to view property, so that a correct judgment of value may be formed, is the acme of idle and useless ceremony. If the jurymen find the property surrounded by dismantled walls, huge beams of timber, half-finished arches, or deserted 'shells,' they will come to one of two conclusions—the first, that the property is valueless; or the second, that those who have caused such a temporary destruction of trade should pay for the damage handsomely. Very few men can so, as it were, localise their ideas as to be able to look through a mental vista, and recall the exact position of a certain object that has been altogether removed from the reality of the situation; and we think that most of us, if suddenly placed in the middle of the great confusion now governing the works at the Holborn Valley, would find it extremely difficult to recall with any idea of accuracy the particular situation or value of any house or shop; and thus we hold to the argument that sending a jury to view is both waste of time and waste of money, especially when the whole secret of compensation is an appeal to the sympathies of the arbitrators. Passing from this, and coming to compensation of a practical and equitable character, may we not ask if a great deal of this assumed increased value of property is not utterly out of place? Surely the value of a house, of land, of shops, offices, of any holding in fact, may be best gathered from the assessment of the owner himself; and mere speculation as to how much property will bring in the event of certain improvements taking effect is calculated to hamper periodical beneficial alterations in the arrangements of our great thoroughfares, to render them more suitable to the requirements of the public and of the growing traffic. We are aware that occasionally great wrong is done by the compulsory removal of old established firms; but we also know that when schemes are advanced, there is too frequently a system of speculative adventure in house and landed property, which does at times—and we are glad to believe it—recoil upon the promoters. Nothing can be fairer than to award a tradesman, who is making a comfortable living, substantial compensation when he is removed by the strength of the law;

but when a holding is shown to be a loss, it is the very height of impropriety to put upon it a fictitious value, based upon the hypothesis of something neither tangible nor reasonably positive. We can advance little beyond this, for the road has been well beaten during the past few years, and yet it is painful to see how exaggerated claims destroy the value of real losses, and recoil with irresistible force upon those who build upon such uncertain foundations.

**LAW.**

**Compensation.**—In the case of Messrs. Thorn & Co., contractors, against the Metropolitan Board of Works, heard at the Guildhall Police Court before Mr. Alderman Finnis on Monday, the claim was made under the Lands Clauses Consolidation Act, for compensation for compulsory removal from offices which the claimants rented, and which were required for the Thames Embankment and the new street to the Mansion House. Mr. Murphy, instructed by Messrs. Brandon, appeared for the claimants, and Mr. Philbrick, instructed by Mr. Ward, for the Metropolitan Board of Works. The claim put in was 1,500*l.* for the loss on the men's time by want of supervision, 40*l.* for increased rent, 20*l.* for fixtures, 20*l.* for reinstatement, 16*l.* for the loss of clerks' wages during removal, and 5*l.* expenses of removal, making a total of 1,601*l.* Mr. Alexander Thorn was examined at great length, and maintained that the fact of not being able to see his men at work from the window both by night and by day had such an effect upon them that they idled their time away. From the evidence of Mr. Alden, an extensive builder; Mr. Bryant, the resident engineer to the claimants; Mr. Watson, engineer to Peto and Betts; and the reports of Mr. Lumley, of Chancery Lane, and Mr. Spillman, of Bell Yard, surveyors, it appeared that if men had not a proper supervision over them, half of them would idle their time away to the extent of 9*d.* or 1*s.* per day per man, and that from 5 to 7½ per cent. was a reasonable charge for loss so sustained. Since the removal the supervision had not been so efficient as before, but the claimants had put on no extra foreman, although they estimated their loss at 25*l.* per week. For the defence, Mr. E. N. Clifton, architect and builder, said he had constructed buildings such as Gresham House and East India Avenue, and paid about 3,000*l.* a fortnight for wages. Supervision from a window such as that spoken of was not supervision at all, and the want of it could make no appreciable difference in the profits of a contract. There was no value in Mr. Thorn's interest in No. 13, for he paid a rack rent; but where a tenant was compelled to move it was customary to give him a year's rent. Mr. Trist, of the firm of Norton, Trist, and Watney, thought that 150*l.* would cover every expense and liability of the Board of Works, and be a liberal allowance.—Benjamin Cook, foreman to Mr. Webster, the contractor for the Thames Embankment, said that no supervision could be of any value unless the master went on the works amongst the men. He did not agree with Mr. Alden that the men would idle their time away.—Mr. Boag, clerk of the works to the Board of Works' corroborated the previous witnesses; and Mr. E. Chadwick, a surveyor, valued the fixtures, including removal, reinstatement, loss of time, &c., at 20*l.*—Mr. Philbrick and Mr. Murphy then severally addressed the Court, and the latter gentleman accepted the 150*l.* as valued by Mr. Trist, and left the other question of loss by want of supervision to be settled by the magistrate. Mr. Philbrick contended that the claimants were not entitled to more than 150*l.*—Mr. Alderman Finnis retired with Mr. Martin, the chief clerk, to consult on the matter, and on returning into Court awarded Messrs. Thorn 400*l.* compensation, and 50*l.* costs.

**NEW BUILDINGS AND RESTORATIONS.**

**St. Luke's New Schools, Gloucester.**—The building, which is proposed to be erected in and facing the Stroud Road, will consist—the ground floor of boys' school room 70 feet by 20 feet; girls' school room, 60 feet by 20 feet; and infants' school room, 65 feet by 20 feet, with class rooms attached to each, and separate entrances, affording accommodation for over 450 children. A conveniently-arranged house for the master is attached to the school, with offices, parlour, and kitchen on the ground floor, and three bed rooms on the first floor. This portion of the building (though entirely separate from the schools as far as communication is concerned) has been, by careful and judicious arrangement, made to form a somewhat important feature in the group, and tends very materially to the general effect of the whole. Open and spacious playgrounds are provided. The schools and class rooms will be 12 feet high to the wall-plate from the floor, and the timbers of the roof, which are to be exposed to view, are to be stained and varnished. The building is intended to be constructed of red brick, with bands of ornamental coloured bricks. The design was prepared by Mr. Alfred William Maberly, architect, Gloucester. The estimated cost is 2,000*l.*

**Preston New Workhouse.**—These buildings, which were recently opened, are designed in the Italian style of architecture, and are erected of the best brickwork, with Longridge stone dressings. The ground and basement floors of all the buildings are partly flagged and partly boarded. The staircases are of stone, and all the corridors of the ground floors are of brick and flagged. The building is designed to accommodate 956 inmates, and the cost, estimated by the architect was 30,000*l.*, exclusive of the purchase of the land.

**Laying the Foundation-stone of a New Church at Gatesgill.**—The foundation-stone of a new church at Gatesgill has been laid. The new church will be built in the Early English style of architecture, and will consist of a nave 45 feet by 24 feet, with centre aisle, and a chancel 21 feet by 14 feet, adjacent to which will be a side chapel, vestry, and organ chamber. The principal entrance will be by a porch on the south elevation. The north and side elevations will be adorned with coupled lancet windows, with projecting buttresses, relieved with gables to vestry and organ chamber. The west gable will be pierced with large circular and lancet windows. The belfry will be erected at the south-west angle of the west gable, with gilt terminal 42 feet high. All the gables will have moulded

stone copings terminating with enriched crosses and gilt terminals. The roof will be of high-pitch, with open framed principals, and covered with slates of varied tints, and ornamented with enriched ridge cresting. The chancel will be raised four steps above the nave, and paved with encaustic tiles. The aisles will be flagged. The church will be heated and ventilated by means of the apparatus of Messrs. Haden and Co., of Tunbridge. Mr. John Lowe, architect, of Manchester, has supplied the design for the building. The contractors for the building are Messrs. Bragg, Wilson, and Baty, of Gatesgill. The church will be built of stone from quarries in the neighbourhood.

**Proposed New Church at Bowling.**—It is proposed to erect a new church at Bowling, near Bradford, to the memory of the late Mr. Charles Hardy, of Low Moor, who was one of the most steadfast friends of the movement to erect new churches in the town and vicinity.

**The Church of St. Mary, Saxlingham,** has been considerably enlarged, and has also undergone restoration. The old building consisted of nave, chancel, west tower, and south porch. An aisle of the same size as the nave has been added to the north side, and a commodious vestry has been built to the north of the chancel. A lofty arcade of four arches divides the nave and aisle. The nave roof has been raised and re-modelled, as much as possible of the old wood-work being retained; the principals of the nave and aisle roofs are framed with tracery work in the spandrels, and spring from carved bosses. The unsightly old pews and gallery have been cleared away, and the seating is of low oak benches, with moulded ends and carved poppy heads, and traceried backs in the aisles. The pulpit, reading desk, and altar rail are of carved oak; the pulpit standing on a carved stone base. The tower arch has been raised so as to admit of the new west window being visible over a carved oak screen, which divides the ringing chamber from the nave. One of the windows of the new aisle has been filled with stained glass. The whole of the church is paved with black and white encaustic tiles. The style throughout is rich Perpendicular Gothic, and has been carried out at a cost of about 1,400*l.* The architect was Mr. J. S. Benest, of Norwich, from whose designs the works have been executed in the most excellent manner by the contractors.

**Brierley.—The New Church.**—The new church in course of erection at Brierley is making rapid progress towards completion. It is now partly roofed, progress is being made with the spire, and it is expected that it will be opened early in the spring.

**An Extraordinary Number of Competitors.**—A new chapel is about to be erected at Melbourne, Derbyshire, from the designs of Messrs. Wilson and Willcox, architects, Exeter. The committee had no fewer than eighty designs sent them for competition.

**Frankfort Cathedral.**—The Town Council has just decreed the restoration of the Cathedral, which was partially destroyed by fire on August 15, 1867. The delay has arisen chiefly from a wish to effect a restoration which should do honour alike to the artistic feeling of the age and to the associations connected with this venerable pile, in which many, nay most, of the German emperors were crowned. The fire broke out in a building adjoining the 'Close,' and a strong east wind blowing at the time, extended the conflagration to the cathedral, the roof of which was soon in flames; the roofs of the nave, chancel, and transepts were destroyed in an incredibly short space of time, when the fire was seen to have reached the tower also. This was at length completely gutted; the heavy old bells fell with a crash upon the vaulting of the first floor; nothing could be done beyond restricting the fire to the church, and next morning all was a complete ruin. Since then the Frankforters have not been idle; professional advice was called in from all parts of Germany, whilst architectural, archæological, and other learned societies proffered such substantial aid as they were able to collect in their several cities, for it was felt that this was a national question, and no doubt more than one florin was subscribed in the hope that the old 'Dom' might yet witness the coronation of another German Kaiser. The Cathedral and adjoining college were insured for about 98,000*l.*, and this sum is to be devoted to the proposed restoration. Besides this, the council accepts the donations offered from sundry quarters, and has decreed an annual sum of 1,000*l.* for the salaries of the architect and a competent staff of assistants. With such funds at command, we may hope to see a satisfactory restoration; let us add also the hope that all the *Rococo* and other incongruous Vandalisms may be swept away; a better opportunity will never occur again.

## ITEMS OF NEWS

FROM OUR  
SPECIAL CORRESPONDENTS AND OTHERS.

### The Student's Corner.

A *Faculty of Fine Arts* is proposed to be created at University College, London, and the draft of the Act of Parliament by which it is proposed so to alter the constitution of the college as to embrace, along with other changes, the introduction of this novel and most important field of study, lies before us. The portions of the Act which refer to this subject run as follows. In the preamble occurs this passage: 'And whereas it is expedient that the objects of the college should be extended to the advancement and promotion of the fine arts as well as of literature and science.' In the re-incorporating clause the institution is described as now to be 'for the purpose of affording at a moderate expense the means of education in literature, science, and the fine arts, &c.:' and in the clause prescribing who may be life governors one of the qualifications runs thus: 'Persons distinguished in science, literature, or art.' Here we have the desirability of extending the education given in this college to fine arts—the enactment that it shall be so extended—and the provision for including among those who direct the proceedings persons eminent in art sufficiently, though briefly, provided for. There can be little doubt of this Act becoming law; and when it does so become law it is difficult to exaggerate the importance of the step, for it is well known that the means exist of efficiently carrying out the

proposed change. That is to say, the necessary money, the mainstay of art as it is the sinews of war, is provided by the munificent bequest of the late Felix Slade. This gentleman left a sum of forty-five thousand pounds to be employed in founding 'Slade professorships of Fine Arts' at Oxford, Cambridge, and London; and of founding six scholarships of 50*l.* each, the latter to be in connection with the University of London.

It can hardly be doubted that the college—which for so long has provided a school of drawing and civil engineering, and has furnished in the lectures, first of Professor Donaldson and later of Professor Hayter Lewis, excellent systematic instruction in architecture as 'an art and science'—will embrace eagerly this opportunity of advancing in this direction. It is understood that a programme of the most extended, not to say ambitious, proportions has been at least sketched, and privately circulated. The nature of the intended scheme shall be laid before our readers as soon as it can be with propriety made public property. Meantime we heartily welcome the prospect of a centrally situated well endowed Art School; and we do so the more readily because we believe that the ultimate relation between literature and fine art—not enough recognised perhaps among ourselves in the present day—may be better illustrated in an art school grafted into a literary foundation than in any other way.

The *Classes of the Architectural Association* are to receive an accession to their number—at least, at the next meeting of the Association a proposal to that effect will be made by a sub-committee appointed to consider the question. This proposal will no doubt be adopted, and therefore we may fairly expect the immediate opening of a Class of Elementary Design and a Class of Elementary Drawing. The Drawing Class is to be under an experienced teacher: the Class of Elementary Design is to be superintended by a committee of five visitors. The names of the gentlemen who are understood to have provisionally accepted these positions are a guarantee for the efficient conduct of both the classes. We are informed that it will be proposed to appoint as visitors Messrs. Phené Spiers, Lonsdale, Watson, Edgar, and Perry, and Mr. Michael will be proposed to instruct the Class of Elementary Drawing. We can hardly imagine any step more likely to extend the usefulness of the Architectural Association or to benefit students, and we heartily wish success to the new Classes.

### Rotherham Hospital and Dispensary Competition.

We remarked in our last issue on the unsatisfactory clause as to the ultimate payment of the successful competitor, who (say the printed Instructions) 'shall carry out the work for a percentage on the outlay;' and this week we learn from a correspondent who has inquired whether or no this percentage will be the 5*l.* per centum recognised by the profession, that, in the opinion of the Secretary, the Building Committee are likely to select an architect who will offer to do the work for 4 per cent., in preference to another who, with only an equally good design, may ask a commission of 5. This is just what we had anticipated. We do not blame the non-professional public, who make up our competition committees. Doubtless, if 3 per cent. were the established commission, they would see no harm in setting architects to reduce it by a scramble to 2 per cent., and so on *ad infinitum—essimum*. But where, we will ask, is this kind of thing to end? Few architects are found rolling in carriages—nay, gigs—with even 5 per cent. How then is it that the outside public have lately (as recent hospital cases indicate) discovered that the usual 5 per cent. is too much to pay? It is well known to be too little in all buildings under 2,000*l.* in cost; and yet architects rarely, if ever, demur to it in such cases. The public are the real gainers by the system of charging by commission on cost; and truly, recent events would seem to be fast bringing the entire system into desuetude. Perhaps it may one day occur that the eminent and the *mediocre* among architects will not always, as they now are, be had at one uniform price. The subject deserves very serious consideration. Let architects either receive their usual commission, or let them abandon payment by percentage altogether.

### India.

**Engineering.**—The principal point of interest in connection with railways in India is the opening of the Punjab and Delhi line, between Meerut and Umballah, on November 13, by the Viceroy in person. The surveys for the extension of the Bombay, Baroda, and Central India Railway, from Guzerat, through Rajpootana, to Delhi and Agra, have been completed, and the results submitted to Government. The long vexed question of how to carry the East India Railway across the Hooghly into Calcutta has at last been settled. Instead of taking the railway to the traffic, it has been determined to carry the traffic across to the railway by means of an ordinary road bridge.

The municipality of Madras have applied to Government for a loan to enable them to carry out a project for the supply of water to that city. The chairman of the Bombay Commissioners has forwarded to that Government, with his recommendation, a scheme by Captain Tulloch, R.E., for the drainage of the city, and utilisation of the sewage for agricultural purposes.

The utilisation of the old bed of the Sutlej, which is being rapidly accomplished under the exertions of Major Minchin, is an undertaking of inestimable value to Bhawalpore. The works at the mouth of the channel were completed in June 1867, and the sterile waste of Bhawalpore was leased for Rs. 4,840. As the course of the river was exceedingly tortuous, it has been necessary to dig a new canal, using the Sutlej bed where possible. The works are being pushed on as fast as funds can be provided.

**Architecture.**—Measures have recently been taken by the Government of India for the preservation and photographing of ancient architectural remains, and a competent staff has been appointed for this purpose. This same desire has also, we learn, communicated itself to Ceylon, where a committee has been appointed for inquiring into the history of the ruins or the cities, palaces, and temples which are scattered over the island, with a view not only of ascertaining their past history, but of preserving those remains from destruction.

On October 30 last, the foundation stone was laid for a new church at Galle, to be called 'All Saints.'

**Statistics of Railways in North America.**

According to *Morgan's British Trade Journal*, the total length of all railways in North America did not exceed 1,098 miles thirty-three years ago. Now they amount to no less than 39,244 miles, laid at a cost of 390 millions sterling, or an average of about 9,750*l.* per mile. The shortest length opened in one year was 169 miles, in 1843; the longest was 3,643 miles, in 1856. In the first year of the late war, 621 miles were opened for traffic. From the commencement of the railway system in 1830 to the annexation of California in 1848, the average length of line opened annually was 316 miles, the total length up to that period being 5,996 miles. From that time to the commencement of the late war, being a period of twelve years, 24,639 miles of railway were constructed, giving an average of 2,051 per annum. From the year 1860 down to the present time, 8,587 miles more have been constructed, showing a decrease in the average of almost 50 per cent., namely, 1,227 miles per annum. Twenty-eight years ago there were 7,415 inhabitants to every mile of railway throughout the United States; the proportion at this day is only 905 to every mile.

**Transformation and Embellishment of the City of Cairo.**

The Viceroy of Egypt has taken a lesson from Louis Napoleon, and is occupied with the transformation and embellishment of the famous and interesting city of Grand Cairo. The vacant ground is being converted into vast squares and public gardens, and broad streets are being pierced across masses of houses only intercepted at present by tortuous streets, or rather lanes, which are totally unfit for modern carriage traffic, and, which is much worse, quite insufficient for the ventilation of a city which, like Cairo, is subject to terrible visitations of fever and other afflictions.

The Viceroy, happily, is not about to destroy the characteristics of the fine old city. The old mosques and monuments, which are being restored, will form the chief ornaments of what will be the Grand Square of Roumalia; and although great changes will be made in the mass of buildings which formed the old residence of the Mamelukes, the bazaars which have for ages formed one of the chief attractions of Grand Cairo are to be preserved in their entirety, so that artists and travellers will not be deprived of one of the most thoroughly Oriental sights which present themselves on the line of one of the great thoroughfares of the world. The new structures will be of the type so well illustrated in the *Parc* of the International Exhibition in the Champ de Mars in the summer of 1867, so that the artistic eye will not be shocked, as it often is elsewhere, with a heterogeneous mixture of Eastern and Western architecture—Greek, Roman, Gothic, Saracenic, and Renaissance, presenting no more harmony than the costumes at a fancy ball.

**General.**

**The New Foreign Office** is now accessible to strangers every Thursday between the hours of twelve and three, until further notice, on delivering their cards to the porter at the principal entrance, on the north side of the quadrangle.

**The Town Council of Brighton** have advertised for the loan of 20,000*l.* for the drainage works, and received several offers. The Finance Committee recommended at the meeting on Wednesday that the offer of the Atlas Assurance Company be accepted. The rate of interest is 4½ per cent. per annum, and the principal is repayable in 30 equal annual instalments.

**Manchester.**—A circular calling attention to the relative position of builders, brickmakers, and bricklayers has been issued. The persons and firms by whom it is signed include some of the most influential in Manchester. Their complaint is:

The arbitrary laws of the unionists unwisely shorten the hours of labour; limit the quantity of work to be performed in a given time; advance the rate of wages; increase the cost of all building without improving the workmanship; keep down the skill and condition of the workman; augment the difficulty of his becoming a master; and injure most the very class supposed to be benefited. To remedy this evil they suggest the employment of non-unionist workpeople and members of the Free Labour Registration Society; and that they themselves be encouraged to take apprentices from the unemployed youth of our large towns; by which means they would have an opportunity of adding considerably to their weekly wages, and thus a constant and well-regulated supply of labour would always be available, and contribute much to the general good of the public as well as to all parties connected with the building trade.

The persons appending their signature add:—“We hold the opinion that with a free exchange of labour there would be abundance of employment for every class of workpeople, and that it cannot be right for trades unionists to prevent the labouring population bringing up their children to the trade they like best. We therefore respectfully request that you will give a preference of employment to non-unionist workpeople or members of the Free Labour Registration Society, and we on our part undertake to give a preference to those master builders who offer the greatest encouragement to free labour.”

It is intended to lengthen the Elgin Gallery in the British Museum, in order to obtain room for the public exhibition of the remaining portion of the sculpture from Halicarnassus.

**Signs** have at last appeared of the lighting of Highgate. About a fortnight ago spots were marked out for lamp-posts, but up to the present time no lights have appeared. Where are the authorities?

**The Church of St. Mary, Illingworth, near Halifax,** has just been enriched by the insertion of a beautiful stained glass window, the gift of the Ramsden family, of Jumbles House. The artists are Messrs. Ward and Hughes, of London; and the subject is the raising of Lazarus.

**Mr. Layard** is to be the Commissioner of Public Works and Buildings. If we do not mistake Mr. Layard's leanings, the Liberal Government will be identified with the Italian school of architecture: the Conservative certainly was with the Gothic.

**A drill shed** is in course of construction in Becket Street, Derby; it will be a very handsome and commodious building, and will allow room for the drilling of a battalion 1,000 strong. There will also be an armoury, orderly-rooms, adjutant's room, reading-room, companies' meeting room, quarters for two sergeants, stables and outhouses, and good yard. The total cost, including the site, will be 5,000*l.*

**The First Stone** of the New Harbour works at Carnarvon has been recently laid. Mr. Frederick Jackson, C.E., supplied the plans. The contractors are Messrs. Bugbird & Jones. Estimated cost, 50,000*l.*

**Active preparations** are being made for the erection of a new tower at the western extremity of the Castle facing Broad Street, Cardiff. The tower will be considerably taller than the one at the eastern end.

**One of the Results** of the recent storm in the North has been the partial destruction of the new harbour works at Wick. No less than 260 feet of sea-wall have been destroyed. It is calculated that the amount of damage cannot be less than 10,000*l.*

**The Parish Church, Orichowell.**—The extensive alterations and repairs to this church are now being rapidly carried on by the contractors, Messrs. H. P. Bolt and Co., of Newport, who are carrying out the designs of Mr. West, the architect.

**Further Fall of the Bridge over the Derwent.**—The temporary erection in the place of the bridge over the Derwent, which fell a short time ago, has given way, bringing with it half of the central pillar and many tons of masonry work, which were cast into the water.

**Greet Church, Tenbury Wells.—Memorial Window.**—A memorial window has been erected in commemoration of the late Captain Edwardes. It consists of three lights. In the centre is our Saviour, and on the side lights are St. Matthew and St. Mark. The whole is nicely coloured, and in keeping with the ancient character of the church. The work was executed by Mr. John Robinson, of St. Alkmund's Square, Shrewsbury.

**Opening of a New School at Todwick.**—The school is a substantial and handsome building, and has been erected by the exertions of the rector, aided by many friends, both in the parish and at a distance. His Grace the Duke of Leeds gave the ground, as well as a handsome donation and other valuable assistance.

**Restoration of St. Nicholas Parish Church, Grosmont, Monmouthshire.**—It is proposed to commence the restoration of this noble Early English church with the first favourable turn of the season, as sufficient funds have now been raised to secure a beginning. This church is of great extent and elaborate character. It is a cruciform structure consisting of a spacious nave, side aisles, chancel, transepts with parallel aisles, side chapel, and central octagonal tower on massive piers supporting an elegant octagonal spire. The entire building after a lapse of six centuries has fallen into a deplorable and dangerous state of decay, which threatens at no distant period to become a ruin. It has been carefully surveyed by Mr. Seddon, architect, London, and its substantial restoration has been estimated to cost 3,000*l.*

**St. James's Church, Thornton.**—A new church is to be erected after plans supplied by Messrs. Hedley & Co. The building is estimated to cost 4,000*l.* The style will be French Gothic. The interior will be fitted with plain oak pews.

**An interesting sale of pictures** is announced at the Hôtel Drouot of the celebrated gallery of M. Gabriel Delessert. Most of the paintings are of the Dutch school, but the great attraction of the sale will be an authentic Raphael.

**Fine Art Exhibition at Bordeaux.**—The exhibition of works of fine art is announced by the Bordeaux Society of the Friends of Art to take place early in March next.

**Electrotype Ornaments.**—The galleries of Greek and Roman sculpture in the Louvre have been largely increased and embellished of late by the introduction of a number of bas-reliefs, round bosses and allegorical figures, covered with a coating of metal, the work of M. Cossinus. The effect of these electrotype bronzes is extremely rich, while the cost is trivial compared with real bronzes.

**We are informed** that the splendid collection of engineering models, belonging to the late Professor Gillespie, of Union College, Schenectady, United States, has been purchased by that institution. It is probably the finest collection of engineering models and instruments in the United States.

**A Report from America** states that the Czar of Russia has sent two engineers to inspect the Pacific Railroad, with a view to utilising whatever information they may obtain in the construction of a road from St. Petersburg to Chinese Tartary.

**A grand Wesleyan church** is to be opened at Washington on the Sunday preceding the inauguration of General Grant as President. The preachers on the occasion are to be Bishop Simpson and the Rev. W. M. Punshon. This magnificent building is to cost 45,000*l.*, by far the greatest part of which has already been secured.

**MEETINGS OF LEARNED SOCIETIES.**

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Monday, January 18, at 8 P.M. Prof. Kerr on some Developments of the Architecturesque.

THE INSTITUTION OF CIVIL ENGINEERS.—Tuesday, January 12, at 8.

INSTITUTION OF SURVEYORS.—“Arterial and Agricultural District Drainage, and the Laws connected therewith,” by R. B. Grantham, C.E., F.G.S. Monday, January 11, at 8.

ROYAL SOCIETY.—January 14, at 8.30 P.M.

ROYAL GEOGRAPHICAL SOCIETY.—Monday, January 11, at 8.30 P.M., at Royal Institution, Albemarle Street. Sir R. I. Murchison, Bart., in the chair. Paper to be read by Douglas W. Freshfield, Esq.:—“Journey in the Caucasus, and Ascent of Kasbek and Elbruz.”

ROYAL INSTITUTION.—Meetings for the ensuing week: Tuesday, at 8, Fine Art, Mr. Westmacott; Thursday, at 8, Protozoa, Mr. Rupert Jones; Friday, at 8, Chemical Rays and Molecules, Professor Tyndall; Saturday, at 8, Hydrogen and its Analogues, Prof. Odling.

LINNEAN SOCIETY.—January 21, at 8 P.M.

SOCIETY OF ARTS.—Wednesday, January 13, at 8.

ASSOCIATED ARTS INSTITUTE.—January 9. Paper by H. Ellis Wooldridge, Esq., on “The Cultivation of Artistic Feeling.”

LONDON INSTITUTION.—On Modern Artillery, Iron Fortifications, and the recent Experiments at Shoeburyness, by Dr. William Pole, F.R.S. Monday, January 11, at 6.

EDITORIAL NOTICE.

No communication can be inserted unless authenticated by the name and address of the writer, not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

Our readers are invited to address us on subjects of interest to themselves or the public. We shall be always ready to insert letters asking for a solution of any suitable questions of a professional or practical nature, and to receive replies to such enquiries.

PUBLISHER'S ANNOUNCEMENT.

Advertisements cannot be received for insertion later than 2 P.M. on Thursdays.

Temporary Office, 4, Monument Yard, London.—GILBERT WOOD, Publisher.

THE GAZETTE.

PARTNERSHIPS DISSOLVED.

James Bass and John Grainger, Saint George's, Wrockwardine, Shropshire, builders—William Cargey and Benjamin Ward, Elswick, Newcastle-upon-Tyne, fire brick manufacturers—Frederick Dowler and James Gradwell, Bold Street, Liverpool, cabinet makers—Samuel Waterhouse, James Ramsden Brooke, John Padgett, and Alexander Kerr, Stanningley, near Leeds, Yorkshire, engineers—Thomas Lowe and Henry Lowe, Woodford Green, Woodford, Essex, builders—August Ludwig Roosen Runge and Nicolaus Friedrich Jacob Cornelissen, Manchester, civil engineers—Herbert Charles Mandalay, Joshua Field, Thomas Henry Mandalay, Tilford Field, and Walter Henry Mandalay, East Greenwich, engineers; so far as regards Herbert Charles Mandalay—William Birdseye and William Edward Stoner, Cheapside, City, surveyors—John Maitland Smith and John Smith, jun., Chippenham, Wiltshire, builders.

DECLARATION OF DIVIDEND.

Llewellyn Lloyd, Beckbury, Salop, timber merchant—first dividend of 8d. any Thursday, at Mr. Kinnear's, 17 Waterloo Street, Birmingham.

BANKRUPTS.

William Heatley, late of Wilmar Cottages, Holloway Road, Leytonstone, Essex, builder, Jan. 18, at 12—Henry Baxter, Great Wild Street, Lincoln's Inn Fields, builder, Jan. 18, at 11—James Brown, late of Nelson Villas, Wandsworth Road, builder, Jan. 15, at 11—Charles Edward Pender, late of Barnsbury Road, Islington, lithographic draughtsman, Jan. 18, at 1—Thomas Sherwood Young, Frampton Park Road, Well Street, South Hackney, late builder, Jan. 18, at 11.

TO SURRENDER IN THE COUNTRY.—Henry Brunger, Park Road, Faversham, Kent, wood dealer, Jan. 12, Faversham—Philip Pritchard, Cwmrfof Lower, Monmouthshire, builder, Jan. 16, Abergavenny—Zachariah Hugh Thomas, Portrack Lane, Stockton, Durham, builder, Jan. 18, Stockton-on-Tees.

SCOTCH SEQUESTRATION.

James Wilkie, London Row, Leith, builder.

TENDERS.

BOLNEY, SUSSEX.—For Stable, Coach-house, and Coachman's residence, for Mr. H. Huth. Mr. Holloway, architect. Quantities not supplied:—

Table with 2 columns: Name, Amount. Norman £2,350 0 0, Deacon (accepted) 1,200 0 0.

Villa at Putney. Accepted tenders. Mr. G. H. Page, architect:—

Table with 2 columns: Name, Amount. Caston Brothers £1,387, Lathey Brothers 1,330, Arles 1,264, Mirrett & Ashby 1,231, Baes 1,190.

LONDON.—For alterations and repairs to No. 15 King Street, Cheapside, for Mr. Gabriel. Quantities by Messrs. Pain & Clark:—

Table with 2 columns: Name, Amount. Webb & Sons £1,591 0 0, Simpson 1,486 0 0, Hornshaw 1,451 0 0, Ebbs 1,287 0 0, Conder 1,279 0 0, Bracher 1,229 0 0.

LONDON.—For the erection of a Model Lodging House, Stables, and Vanits beneath, in Catherine Wheel Alley, Bishopsgate Street, E.C., for G. Barker, Esq. Messrs. Tolley & Dale, architects:—

Table with 2 columns: Name, Amount. Henshaw £3,454 0 0, Smith 3,430 0 0, Johnstone 3,252 0 0, Tully 2,210 0 0, Rivett 3,192 0 0, Fawcett 3,178 0 0, Newmann & Mann 3,165 0 0, Hearle 3,054 0 0, Langmead 2,967 0 0, William & Son 2,938 0 0, Ramsey 2,973 0 0, Manley & Rogers 2,970 0 0, Watts 2,967 0 0, Ashby & Son 2,967 0 0, Howard 2,947 0 0, Ennor (accepted) 2,898 0 0, Piper & Co. 2,850 0 0, Wright (too late) 3,185 0 0.

LONDON.—For the erection of a Shop and Dwelling, and alterations to the Ten Bells, Spitalfields. Mr. W. E. Williams, architect:—

Table with 2 columns: Name, Amount. Langmead £645 0 0, Scrivener & White 634 0 0, Hyde 626 0 0, Maris 524 0 0.

LONDON.—For alterations, Nos. 49 and 50, Houndsditch. Messrs. John Young & Son, architects:—

Table with 3 columns: Name, No. 49, No. 50. Cohen £586 0 0, £610 0 0, Heaps 487 0 0, 520 0 0, Ashby & Merritt 419 0 0, 457 0 0, Hart 408 0 0, 454 0 0, Read & Soa 400 0 0, 450 0 0, Chessum 385 0 0, 430 0 0.

HIGHGATE.—For alterations and additions to Whittlebury House, for Mr. C. H. Frewen, Messrs. W. G. Habershon & Pite, architects:—

Table with 2 columns: Name, Amount. Hemmings £1,600 0 0, Cubitt & Sons (too late) 1,640 0 0, Bayes 1,550 0 0, Fincher & Martin 1,450 0 0, Salter 1,450 0 0, Carter 1,440 0 0, Crockett 1,400 0 0, Davies 1,400 0 0, Jackson 1,359 0 0, Blackmore & Morley 1,285 0 0, Kendall 1,290 0 0, Brown & Sons 1,249 0 0, Bennett 1,210 0 0, Pethick 1,170 0 0, Turner 1,170 0 0, Baker & Constable 1,075 0 0.

LOUGHBOROUGH.—For Village Roads and Sewers. Mr. A. B. Pite, architect:—

Table with 2 columns: Name, Amount. Wigmore £4,999 10 0, Harris 4,999 0 0, Johnstone 4,800 0 0, Potter 4,450 0 0, Strickson 4,344 10 0, Turner & Cole 4,239 0 0, Cowland 4,167 0 0, King 4,148 0 0, Crockett 4,090 0 0, Kell 3,920 0 0, Reid 3,744 0 0, Crofts 3,740 0 0, Gardiner 3,679 0 0.

DERBY.—For the erection of New Buildings in the Iron Gate, for Mr. John Smith. Quantities supplied. Mr. Benjamin Wilson, architect:—

Table with 2 columns: Name, Amount. Humphreys £3,140 0 0, Gadsby 3,100 0 0, Wood 3,000 0 0, Thompson (accepted) 3,000 0 0.

HULL.—For Painters' Works to be erected by the Corporation. Mr. R. G. Smith, architect:—

Table with 2 columns: Name, Amount. Murgave £278 0 0, Hutchinson & Son 850 0 0, Siminson & Frorr 815 0 0, Stanley 906 0 0, Habershaw 738 0 0, Hockney & Liggins 684 0 0, Jackson (accepted) 680 0 0, Lowest of the separate tenders 730 0 0.

APPOINTMENTS VACANT.

INDIA OFFICE.—Trained Young Men for the Maintenance and Conservation of the Government Forests in India. Eight will be selected. In February, 1869. Salary to commence at 300l. per annum, rising to 1,900l. by promotion. Apply January 8, 1869, Under Secretary of State, India—H. Merivale.

HUNDRED OF WIRRAL, CHESTER.—District surveyor. Salary 160l. a year, and will be required to reside within the district of the Board, and to give his whole time and personal attention to the duties connected with his office. Applications to be sent to William Henry Churton, East-gate Buildings, Chester, on or before Monday January 25.

COMPETITIONS OPEN.

BELGIAN ACADEMY OF ARTS AND SCIENCES.—Best Essay on 'The Period at which Architecture in the Low Countries became affected by Italian Influence.' Premiums, 1,000 francs.

BILBAO, SPAIN.—Designs for a House of Mercy for lodging the poor. Premiums, 200l., 100l., and 50l. each. F. di Llyard, 124 Cannon Street, E.C.

DUMFRIES, N.B.—Designs for the Erection of a New Infirmary. Premium, 50l. Mr. Symons, Writer, Dumfries.

ROTHERHAM.—March 15.—For Plans, &c., for erecting a Public Hospital and Dispensary. A prize of 75l. is offered for the best design, 50l. for the second, and 25l. for the third. John Barras, hon. secretary, Rotherham, December 15, 1868.

VIENNA, AUSTRIA.—This Municipality require Designs, Plans, Estimates, &c., for the Erection of a New Hotel de Ville. Open to all Europe. For Particulars, Austrian Consul-General, 21 Rue Lafayette, Paris. (See ARCHITECT, Jan. 2, p. 12.)

SOUTH METROPOLITAN SCHOOLS, SUTTON, SURREY.—For Designs for the Erection of an Infant Establishment adjoining the present Schools. Premiums of 40 Guineas each for the three designs considered the best. February 2. J. Burgess, Clerk to the Managers, Vestry Hall, Walworth.

CONTRACTS OPEN.

EAST DERBYHAM.—Jan. 20.—Designs for Two Chapels and a Porter's Lodge, to be erected in the Burial Ground of the said Parish. G. S. Tinkler, Clerk to the Board.

ABERGAVENNY.—Erection of a town hall, with shops, offices, and other buildings, and the reconstruction of the general market place, with other works, Jan. 25, 1869. J. T. Rutherford, Abergavenny.

KEIGHLEY.—Erection of warehouse, with offices, entrances to general works, &c. William Sugden, architect.

CHILL.—The Government of this Republic require Tenders for Cast Iron Columns, Roof Posts, &c., Cast Iron Work for 27 Bridges, and 1,700 Squares of Galvanized Corrugated Iron Roofing, &c. The Chilian Legion, 18 Gloucester Gardens, Hyde Park.

WANTAGE.—Erection of new brewery, Jan. 19, 1869. Managing director, Wantage Brewery Company, Wantage.

MONMOUTH.—For erection of new workhouse for the Monmouth Union, Feb. 5, 1869. Edwin Richards, clerk to the Local Board, Monmouth.

KENDAL.—Erection of a residence for H. Arnold, Esq. Mr. J. Binkley, architect, Old Town Hall Chambers, Kendal.

KENDAL.—Erection of a villa residence for William Williamson, Esq., Jan. 11, 1869. Stephen Shaw, architect, Kendal.

HEVERSHAM.—Rebuilding tower of St. Mary's Church, Jan. 23, 1869. Paley and Anstlin, architects, Castle Hill, Lancaster.

TERRINGTON, YORKSHIRE.—Restoration and refitting of the parish church, Terrington, Yorkshire, January 23, 1869. Mr. Christian, architect, 8A, Whitehall Place, London, S.W.

BOROUGH OF SALFORD.—For the Ironwork, Woodwork, and Paving required in the formation of Cattle and Sheep Pens for the extension of the Cattle Market. Surveyor's office, Town Hall, Salford. Wednesday, January 18. Mr. S. Brett, Salford.

BURY BURIAL BOARD.—For supplying and fixing about 700 yards of Wooden Posts and Iron Rails for the roads from Manchester Road and Gigg Lane to the Cemetery. January 11. Mr. James Farrar, Architect, No. 12, Market Street, Bury.

BURY IMPROVEMENT.—The Bury Improvement Commissioners are prepared to receive Tenders for a supply of Glazed Sewer Pipes, Tiles, and Junctions of various sizes and descriptions, Cast Iron Sewer Grates, Set Stones, Flags, Edging Stones, and Channel Stones, up to December 31, 1869. To be sent in by January 11. William Harper, Clerk to the Commissioners.

RADCLIFFE LOCAL BOARD.—Tenders are invited for a supply of Glazed Sewer Pipes, Tiles, Junctions, and Invert Blocks, of various sizes and descriptions, up to December 31, 1869. Jesse Haworth, Water Lane, Radcliffe.

WARRINGTON BANK QUAY SEWERAGE DISTRICT.—Contract No. 2. Apply to Mr. B. P. Coxon, Surveyor, &c., Bank Chambers, Horsemarket Street, Warrington.

LEEDS.—For the various works required in the erection of a good house in Victoria Road, Headingley. James Charles, Infirmary Street.—For any portion of the works required in the erection of two houses on the Newton Green Estate. David Drury, architect, Britannia Buildings, Town Hall.—For the various works in fourteen houses in Hogg's Field, Holbeck. Richard Towse, architect, Dewsbury Road, Leeds.—Floor boards wanted, about 1,100 square yards; the best white, 1 inch thick, and very dry. Thomas Clapham, Royal Park, Leeds.

BOWLING CHAPEL.—For the erection of Prospect Wesleyan Chapel. C. E. Taylor, architect, Commercial Bank Chambers, Bradford.

STANNINGLEY STATION.—For constructing a mill, shed, warehouse, engine bed, boiler-house, chimney, reservoir, &c., near Stanningley Station, Tuesday, January 12. C. R. Taylor, architect, Commercial Bank Chambers, Bradford.

WEST LONDON RAILWAY.—London and North-Western and Great Western Railways.—For the Enlargement of the Passenger Station at Kensington. January 14. J. West, Secretary, Euston Station.

PLAISTOW.—St. Pancras Schools.—For Construction of Iron House and Buildings. January 14. J. Moore, Clerk to Guardians.

KINGSTON UNION, SURREY.—For Erection of Receiving Wards, Tramp Wards, &c. January 18. R. F. Barthron, Clerk to Guardians.

RANDELL & SAUNDERS have much pleasure in informing their friends, and the Building Trade generally, that to facilitate building operations during the winter season, they have provided a large stock of well-seasoned Corsham Down Block Stone. Bath Stone Office, Corsham, Wilts.—(Advr.)

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TO BUILDERS and OTHERS.—Several Sums to LEND on MORTGAGE of FREEHOLD or LEASEHOLD PROPERTIES, at 5 per cent., or on DEPOSIT of LEASES for short terms. Large houses not quite finished not objected to. No preliminary fees.—Apply personally to Mr. WILLIAM TOY, Surveyor, 49 King William Street, London Bridge, City.

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# The Architect.

## THE CAREY STREET SITE FOR A PALACE OF INDUSTRY.



HAT there are two sides to every question is an opinion which few will attempt to contradict, and in any public discussion we commonly find, with Sir Roger de Coverley, 'that there is a great deal to be said on both sides.' Notwithstanding this, since the appearance of Sir Charles Trevelyan's exhaustive statement of the argument in favour of the Thames Embankment as the site for the Palace of Justice, nothing seems to have been advanced which gainsays or contradicts the general principle that for this exceptional building the exceptional site which the Board of Works has won from the Thames should be adopted. Points of detail have been dwelt on, difficulties have been enumerated, heavy expense has been prophesied, and obstacles have been rather referred to than described; but yet at present *the main question* seems to us to remain one of which the other side (if such a side exists) has not been considered by its advocates worth bringing forward—a medal with its reverse blank.

If this be so, why is it that a kind of lingering, hesitating, half-hearted adhesion seems all that has been yet accorded to the proposed removal of the site of this building? The very men who admit that the river side gives greater space, better access, easier levels, freer light, fresher air, nobler aspect, hesitate about transferring thither the whole proposed structure; and while they own that concentration is a good thing, and heartily admit the Thames bank to be the best site for any given portion of the whole scheme, yet timidly advocate some proposal which stops short of complete concentration on the Embankment, and equally fails to provide for entire occupation of the available Embankment site. The proposals for a divided structure to which we here refer vary. Now it is Chancery Courts on one site and Common Law on the other, and by and by it is Courts on one site and Wills on the other; but in principle the proposals retain the same complexion, whatever their details.

The reason of this is not far to seek. The land now known as the Carey Street site—but for which, in our opinion, a better title in every sense would be the Temple Bar site—has been cleared expressly for the purpose of the Law Courts. The old association between this clearance and that proposed building makes it anything but easy to dissociate the two, and to look upon the large plot of land north of the Strand as entirely available for other purposes. This difficulty is not diminished by the fact that no claimant for the site has been brought forward. We suppose that our existing public buildings and our present schemes, when matured, will provide a local position for each of the leading departments of our complicated modern polity and government; and what more do we want?

We have lodged the Legislature at Westminster, and the Government in Whitehall; Commerce reigns in the City; Art occupies South Kensington and Trafalgar Square; the Academies hold Burlington House; Science has several lodgings; Literature and Antiquities enjoy the British Museum; and if now Justice is provided with a permanent and a central home on the banks of the river, we may think it time to pause and contemplate the result of our labours with satisfaction. But is the circle complete? Are we not making a great, nay, an unpardonable omission? What is it that has raised us to the position of wealth and supremacy which at this moment we enjoy? How have we been enabled to multiply the products of the spinning-wheel and the loom ten thousand fold, to cover our country with iron ways, and to make them busy with the daily journeys of the many thousands of trains which transport a traffic without parallel, at a speed and with a security undreamt of till now? Our telegraphs, our steam-presses, our iron and coal mines, our factories, our mechanical works, and, in fact, all that supplies our commerce with materials for its exchange, and renders our country rich, prosperous, and active, flows from our scientific industries; and yet Industry alone, of all the great moving powers of the present day, has no home, and for her alone are no preparations on foot. The Temple Bar site affords an opportunity such as may never occur again for the erection of A PALACE OF INDUSTRY.

Some central institution is at the present moment urgently needed for the scientific training of all those whose callings belong to the higher branches of industry. This is as evident, if the state of the case be once fairly judged, as it was in 1851 clear that the art in our manufactures needed that development for which the school at South Kensington has since so largely afforded the means.

We have enjoyed extraordinary natural advantages in our coal and iron fields, and in the great energy of our national character; and from the time when steam first began to supersede manual labour till lately we have kept the lead in almost every department of Industry; while the highest attainments of our first scientific men have been freely pressed into the service of the industrial arts. But between

original inventors and the actual producers of work there has been too little in common; and now that Continental nations have seen our error and corrected it in their own practice, we are being beaten on every hand.

Our iron-masters are being undersold in our own markets. French, Belgian, and Prussian manufacturers compete with us, and throughout the markets of the world, and even on our own shores, and only too often do so successfully; the prestige of English industry is endangered; its supremacy is well nigh a thing of the past. And all this is mainly due to the superior culture of the Continental mechanic and artisan. The foreman and the manager rise in Prussian or Belgian factories from the ranks, as they mostly do in Great Britain; but they thoroughly understand the *principles* upon which their work proceeds, while with us the men occupying analogous positions are only familiar with *practice*. No wonder that the cry of the hour is for technical education; it is not raised a day too soon—it is not heard a tone too loud. This is, perhaps, the most pressing want of the time; and to a building adequate to afford the means of inciting this urgent necessity we would appropriate the site now cleared for the proposed Palace of Justice.

The Palace of Industry should be arranged on the model rather of the Paris Conservatoire des Arts et Métiers than of any institution known here. That institution comprises a large museum of models and specimens of inventions and machinery, a good technical library, lecture-rooms, class-rooms, machines in motion, and, in a word, all that is necessary to facilitate the studies of those who are preparing to fill places in the industrial establishments of Paris, and indeed of all France. A large staff of professors is appointed, many students attend, and much good is done. What occurs in Paris occurs equally in other capitals and centres of industry in the great manufacturing districts of the Continent, and it is incumbent on us, if we would not recede from our present position, to do no less than they.

There are not wanting among ourselves the elements which would readily combine into a grand Industrial Institution of similar character.

The Society of Arts has for long done most energetically all that a private society can do to promote the spread of sound knowledge on all points connected with our arts, manufactures, and science, and ought to take a leading part in any such movement as is here proposed.

The Commissioners of Patents have collected a curious and valuable museum of inventions, which, if properly displayed, would prove most serviceable as a means of technical education, and which, if suitably housed, could be extended almost indefinitely at but a moderate cost. They have an excellent library of such works as are most needed in technical education, and by their publications they have shown their willingness to aid in the most effective manner in the diffusion of information. To name only one other element, we have Mr. Whitworth's noble benefaction, by which a series of scholarships to be held by practical students of mechanics have been founded. These students must be provided with the proper means of study, and with a suitable place for instruction.

More might be added, but enough has, we hope, been said to show the need for an institution which should have technical education for its object, and the existing nucleus round which the materials for working such an institution could easily collect. It remains to say a few words on what is perhaps more appropriately our subject—the Site and the Building.

No better position than the Temple Bar site could be selected for this purpose, and that on many accounts. It fronts on one side the busiest thoroughfare of the metropolis, ensuring a sufficiently conspicuous position, and yet it in part abuts on property sufficiently remote to admit of the neighbourhood of those workshops and yards without which practically useful technical instruction can hardly be given. It is within easy reach of many of the manufacturing districts of the metropolis, of the scientific societies and the British Museum, and it adjoins the locality where the Patent Office Library has made a commencement in the work.

After providing for the direct thoroughfare northwards, which has been strongly advocated, and is no doubt much needed, there would remain two separate plots of ground. One of these, it seems certain, must be occupied as chambers for solicitors, and, if well constructed, such chambers would prove a mine of wealth. The most westerly block would probably suit best for this purpose, as it would face the position of the New Law Courts.

The eastern block—bounded by the new street on the west, the Strand on the south, Carey Street on the north, and Bell Yard on the east—would be the one most appropriate to the Palace of Industry, and this site would probably suffice for an ample museum, library, class rooms, lecture rooms, and offices, and yet might leave a large internal roofed quadrangle which would form a suitable locality for periodical exhibitions of our technical progress; and the further acquisition of property proposed by the Commissioners might be given up. The building should be worthy its destination. The name we suggest is perhaps an ambitious one, but our manufactures and our skill surely deserve a palace quite as much as our litigation and our losses. The Palace of Industry should be spacious and dignified; it need not be elaborate or vast; but it certainly should not, having regard to the value of its objects, be insignificant either in dimensions or in architectural character.

If this proposal were adopted, it would at once remove all hesitation as to the complete and entire abandonment of the present site

for the Law Courts and all their adjuncts, and it would enable that concentration which has been generally admitted to be essential to be carried out completely. The Courts with all their offices and all the records, the Probate and Will departments not excluded, ought to be all together. A saving of public time and money that is simply incalculable depends upon this. These buildings ought all to be on the Thames Embankment. No other decision will satisfactorily meet the circumstances of the case. If these two points be but frankly accepted, and carried out to their full result, the Temple Bar site will be left entirely unoccupied, ready to be appropriated, as we suggest it should be appropriated, to a worthy public purpose.

Lastly, the Architectural public would gladly see in the appropriation of the Temple Bar site to a Palace of Industry an available opportunity of effectually redressing a great wrong that has been committed. There are many who feel, and feel justly, that though the appointment of Mr. Street as architect to the Law Courts is one upon which the Commission may be congratulated in the most unhesitating way, yet the long period during which Mr. Edward Barry's name was associated with Mr. Street's before the public, coupled with other circumstances which it is needless here to recall, have rendered the position of that architect one of great hardship. As, however, Mr. Street is appointed and at work, it would only be aggravating the evil, even if the present legal buildings should be divided as has been proposed, to take a portion of them away from Mr. Street and give it to Mr. Barry. No such course ought to be thought of, or is in fact, however strongly advocated, likely to be taken seriously into consideration. But if a new building, for a different purpose, and erected under new control, were proposed, and one, too, that should occupy the site of the intended Law Courts, nothing could be more appropriate than that it should be placed at once in the highly competent hands of Mr. Edward Barry, whose design for a Palace of Industry is not likely to be inferior in convenience of arrangement to the one he proposed for the Palace of Justice; while, if he but adopt the style with which he is most familiar, and in which his best works have been designed, it would be easy for him in this new building to surpass altogether in artistic merit the designs for the Law Courts which he submitted, and which have been so favourably referred to by the judges.

We shall, of course, be met by the question of expense, and no doubt this proposal would entail considerable original outlay, but even here there may be room to doubt. The probable cost of a site on the Embankment has been stated at one and a-half millions. The cost of as much land as is required on and round the Carey Street site has been placed—by a high authority—at not less than 2,300,000l.; and as the purchase of two valuable buildings and their sites would be necessary, and is not included in this calculation, it seems that two-and-a-half millions, at least, will be the cost of site in the present position. If these figures be correct, one million of money will be saved by moving the Palace of Justice to a better position. Out of this the nation could well afford to pay for a Palace of Industry. But however this may be, the wealthiest country in the world is not apt to hesitate about expenditure if it can see the money's worth for the pains, and no better investment can be made by the nation than one calculated to foster and promote the growth of our sources of national wealth. For the support of such an institution as we have suggested, it is probable that the revenue obtained by the country from fees paid for patents would amply suffice. This tax upon inventions is felt by many to be a grievance. Such an appropriation of the proceeds would go far to justify the continuance of the impost.

## BALLIOL COLLEGE, OXFORD.

(Continued from Page 16.)

**B**ALLIOL COLLEGE, in the University of Oxford, was actually founded after the death of its nominal founder, John de Balliol, by the widow of that powerful feudal noble. The direct descendant in the third generation from Bernard Balliol, of Bernard's Castle, where he himself also sometimes resided, in the year 1264 John de Balliol took an active part in support of Henry III. against his rebellious barons, and especially against Simon de Montfort. The customary residence of John de Balliol appears to have been the castle of Fotheringhay, in the county of Northampton, long an appenage of the Scottish Crown, and held by the Earls of Huntingdon of the royal race of Scotland. Fotheringhay became the home of John de Balliol in right of his wife, Devorgilla, daughter of Alan de Galloway, great-grandchild of Fergus of Scotland, and a descendant also from the great Earls of Chester. This illustrious lady and her husband were the parents of that second John de Balliol, their second son, the successful competitor who became King of Scotland.

It was certainly the purpose of John de Balliol to carry fully into effect that project for founding a college at Oxford which his death in 1299 caused him to leave still incomplete. In either 1267 or 1268 it is recorded of him that he did 'exhibit' certain poor scholars at Oxford, until such time as he should provide for them an habitation—until, that is to say, he should be enabled to found his proposed college. After a while, his widow, the Lady Devorgilla, was induced to carry out the wishes of her deceased lord in respect to the college at Oxford. In the first instance she hired a dwelling for her late husband's 'poor scholars;' and then, in the year 1282, she gave them twelve statutes

under her seal. By the fourth of these statutes she commanded the scholars to choose from amongst themselves a Principal, who should rule and direct them; and, by the sixth, they were enjoined to pray before their meals for the soul of John de Balliol, and for the 'Procurators' of the Lady Devorgilla herself. The original charter of the foundress, still in an excellent condition, is preserved in the college; it has her seal appended, and it is addressed to Hugo de Hertipol and others, her 'procurators' in the management of the establishment that was soon to become her college. This singularly interesting document bears the date of this same year, 1282—'in octavo assumptionis gloriose Virginie Marie anno dñi. M<sup>o</sup> CC<sup>o</sup> octogesimo secundo:' and she styles herself 'Devorgilla de Galloway, dña. de Balliolo.'

In the year 1284 the Lady Foundress purchased a tenement in the city of Oxford, whither, after she had improved and enlarged it, the 'poor scholars' forthwith repaired, with their Principal, Walter de Fotheringhay—an appointment doubtless judiciously made of some family dependent on the founder in his great Northamptonshire lordship. At that time each of the sixteen scholars received daily, on the week days, 1d., and 2d. on the Sundays; and, consequently, their annual cost then amounted to 27l. 14s. 8d. of our present money. Upon her society thus established the Lady Devorgilla settled certain lands; and, in the same year, 1284, her foundation was confirmed by Oliver, Bishop of Lincoln, and by her son, Sir John de Balliol, afterwards King of Scotland.

Of the very curious and eminently characteristic seal of the foundress, the Lady Devorgilla de Balliol, with its counterseal, we have been enabled to give the annexed engravings by the kindness of the Master of Balliol, the Rev. Dr. Scott, who placed at our disposal for the use of the engraver photographs of the original impression under his charge. In keeping with the usage prevalent in her times, upon her seal the illustrious lady has caused to be portrayed her own effigy, arrayed in a long and flowing tunic, a mantle, a wimple and coverchef. In her uplifted hands she holds, in the right, a shield of De Balliol, the arms of her husband, and in her left a shield of Galloway, her own arms, and those of Alan de Galloway her father. Also, on either side of the effigy, a conventional tree has been introduced, sustaining from their *guiges* two other shields; the one to the dexter, charged with *three garbs*, the ensigns of the earls of Chester, and the other to the sinister, bearing *two piles in point*, a device considered to have been borne for the earldom of Huntingdon, long closely connected, as we have already noticed, with the Scottish Crown. The



SEAL AND COUNTERSEAL

OF THE LADY DEVORGILLA DE BALLIOL, FOUNDRRESS OF BALLIOL COLLEGE, OXFORD: FROM THE ORIGINAL IMPRESSION APPENDED TO A CHARTER, BEARING DATE A.D. 1282, AND NOW PRESERVED IN THE COLLEGE.

counterseal displays, suspended from a tree, a large shield of the arms of the founder and foundress, united by the process (then recently introduced) of dimidiation: the dimidiating, however, affects only the Balliol half of the shield, for in those days they did not dimidiate rampant lions vertically; and above this shield are two others of much smaller size, attached to branches of the tree, which severally repeat Chester and Huntingdon. The legends of the seal and counterseal respectively are:—s': DERVORGILLE: DE: BALLIO: FIL: ALANI: DE: GALEWAD: and s': DERVORGILLE: DE: GALEWAD: DNE: DE: BALLIOLO.

On the exterior of the Master's house, below the new oriel in its face towards Broad Street, are sculptured the arms of the Master—Scott of Harden, or, in chief two mullets and in base a crescent azure, quartering Johnston of Hilton in the Merse, argent a saltire engrailed sable, and on a chief gules three cushions or; and, in the gable above this oriel, in a richly diapered panel, is the letter S, the initial of the Master's name. Within this truly delightful residence, in the dining room so often mentioned, the early shields of arms blazoned on glass that have been removed to the new south window from the

oriel are three in number, and with them are grouped two other achievements blazoned on squares, and a sixth that is on an oval panel. The arms on the two square panels are severally *Montacute* and *Monthermer* quarterly, quartering *Neville of Salisbury*; and *Beauchamp of Warwick* and *Newburgh* quarterly. The principal shield, charged with *France modern* and *England* quarterly, differenced with a *silver label of three points*, is ensigned with a large and rich arched crown, and environed with four white roses. It would seem to be probable that this shield may have been designed to represent the hapless Edward V., during his father's life-time. The white roses will scarcely permit the shield to be assigned to either of the two sons of Henry VII., who successively bore the same differenced arms, or to the son of Henry VIII., by whom the same shield was also borne. This shield has commonly been ascribed, it appears, to the Oxford benefactor, the good Humphrey, Duke of Gloucester; but he differenced with a silver bordure, not with any label—most certainly not with a plain silver one—and he assuredly would not have displayed the Yorkist roses. The crosses which heighten the circlet of the crown that ensigns this shield are much enriched, but they are not crosses patée.

The other two shields in this glass bear—I. Quarterly: 1. *Argent, a chevron gules, between three unicorn's heads erased azure*; 2. *Paly of six sable and argent*; 3. *Ermine, within a bordure engrailed three fleurs-de-lis gules*; 4. *Azure, a chevron gules (sic) between three pheons or*. II. Quarterly: 1. *Argent, a chevron between three birds' heads erased sable*; 2. *Ermine, impaling azure, two lions rampant argent*; 3. *Bendy of ten, azure and or*; 4. *Azure, three lions rampant argent*. And on the oval panel there are marshalled these Coats: 1. *Russell, quartering, azure, a tower argent*; 2. *Gules, three lucies haurient argent*; 3. *Sable, crusily fichée, a gryphon argent*; 4. *Sable, three chevrons ermine, cantoning a crescent or*.

In the new lecture room, which is the most important apartment of the Brakenbury building of the College itself, Mr. Waterhouse has placed in the heads of the six windows as many shields, of which series each one in its due order blazons one of the quarterings that are borne by Miss Brakenbury marshalled on a single shield. These shields, according, bear—1. (next the quadrangle) *Argent, three chevrons interlaced sable*; 2. *Sable, a chevron or, between three escords erect argent*; 3. *Barry of six argent and sable*; 4. (next Broad Street) *Argent, a lion rampant gules*; 5. *Argent, a chevron sable, between three crosses crosslets gules*; 6. *Argent, on a chevron sable, three stag's heads cabossed of the field*. The heraldic treatment of this glass is scarcely equal to what it might have been—to what, as we are disposed to consider, it ought to have been.

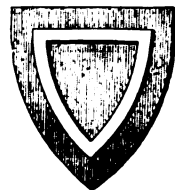
Having left the lecture room, of which it may be said without any hesitation that it is second to none in the University, and passed through the gateway under the tower into Broad Street, we now enter the forecourt of Trinity College, that we may be enabled to give a faithful description of the rich sculptured heraldic panel which has been introduced upon the east end of the Brakenbury range with the same felicitous effect that characterises this fine building throughout. Facing towards Trinity College, and placed near the south-east angle of the new building of Balliol, this panel takes a part with the niches of the tower, and with the other heraldic accessories of which it forms the culminating point, in relieving the prevailing severity of the design; and, at the same time, it worthily commemorates the original founder and foundress, in exact accordance with what it may even be assumed would have been their own personal wishes. With the happiest consistency in his panel, which is arched at its head, the architect has reproduced the composition of the counter-seal of the foundress, which we have already described, and of which we have given an engraving. This same engraving of the counter-seal of Lady Devorgilla clearly indicates the composition of Mr. Waterhouse's panel; but it does not actually represent the panel, because in it the subject has undergone a more artistic treatment than the old seal-engraver could have accomplished; the foliage and acorns of the oak in the panel are substituted for the conventional tree of the seal, and the shields of arms are disposed with more of freedom and elegance. To the heraldry of the early seal, however, the modern artist has rightly and faithfully adhered. This implies the marshalling, in the sculpture of the panel, of the dimidiated shield of the founder and foundress, with the arms of the husband on the sinister, and those of the wife on the dexter side—a disposition that reverses the places which they ought correctly, and with due significance, severally to occupy. That the counter-seal of a personage of such importance as the Lady Devorgilla de Balliol should display, either deliberately or by an accidental oversight, a grave heraldic error, cannot be admitted without much hesitation; nor can it be supposed that on the original counter-seal the shield was marshalled with Balliol to the sinister, heraldic rule and usage notwithstanding, in order deliberately to assert a precedence for the living lady over her deceased lord. The seal disposes of any such idea, by showing the lady herself holding the Balliol shield in her right hand, that of Galloway being in her left. It is barely possible that the anomalous aspect of this shield may have arisen, at that early era in marshalling, from some attempt to adjust the marshalling in this instance to the condition of a counterseal. If this be the true explanation, the attempt, it must be admitted, proved to be only in part successful; and even that partial success could never have been accepted as a precedent. Indeed, it is highly probable that this very shield is the first experiment in marshalling by dimidiation that was tried by the artist who executed this counterseal. The shield in

question is upon a counterseal; and the impression of a counterseal was to be taken *at the back of a seal*; that is, at the period under consideration, the impression of a pendant seal, regarded as a single complete seal, in reality was a double impression taken from two matrices; and thus the heraldic compositions of the seal and the counterseal were *addorsed*—stamped back to back. Now the seal, or obverse, being the more important, and giving the dominant impress, the impression of the reverse or counterseal might have been considered to *counterchange* the sides of the shield—to cause 'dexter' and 'sinister' to change places. If an impression of our two engravings be cut out and folded back to back, and then be held with the seal uppermost at such an angle that the counterseal can be seen below it, the dimidiated arms of Balliol will appear on the counterseal to be in their right position on the dexter half of the shield; still, in this case, the Galloway lion faces to the sinister instead of to the dexter, and the Chester and Huntingdon shields have their relative positions on the seal reversed.

Over the entrance gateway in the tower, on the exterior of the structure, interposed between the shields of Balliol and Galloway, is this same semi-dimidiated shield of those two united houses, Balliol as before being marshalled to the sinister. The tinctures of these arms are blazoned thus:—*gules, an orle argent*, for Balliol; and for Galloway, *azure, a lion rampant argent, crowned or*. Again, over the eastern exterior oriel, a crowned lion rampant, sculptured boldly in full relief as a single supporter—an usage not without good authority in early Scottish heraldry—holds a shield of Galloway, displaying a blazoned image of himself.

Two other armorial compositions, both on the new eastern wing of the quadrangle, remain to be noticed. In the arched head of the uppermost window in this wing nearest to the chapel, and facing the quadrangle, is a shield charged with four crosses crosslets fichée upon an engrailed saltire—the arms of the late much respected Master of Balliol and Dean of Wells, Dr. Richard Jenkyns. The corresponding window on the outside, facing towards Trinity College, has a shield in a similar position to commemorate a benefactor to the old buildings of the college, Sir Edward Turner, Baronet, who married a niece of Dr. Theophilus Leigh of Adlestrop, Master of Balliol from 1726 to 1785; the arms are, a mill-rind impaling a cross engrailed which cantons a lozenge.

We once more return to the principal entrance gateway of the college at the base of the tower. The bosses of the vaulting of the old entrance gateway displayed some heraldry of uncertain authority, which, with sound judgment, has not been reproduced in the same place; but the old bosses themselves have been carefully preserved. The new gateway bosses, as has been said, are sculptured with foliage; had it been decided to have made them heraldic, after the manner of the vaulting of the south porch to Canterbury Cathedral, the following series of shields might have formed an heraldic chronicle in keeping with true architectural expression, and well suited to the *genius loci* and the *genius temporis* also:—1, central, between the two bays—The Queen; 2, 3, severally to the west and the east of No. 1, and in the same line with it—The Archbishop of the Province, and the Bishop of the See; 4, in the centre of the south bay—King Edward I.; 5, in a line with Nos. 1, 4, towards the south—Balliol and Galloway impaled (Balliol to the dexter); 6, 7, to the west and east of No. 5, and in the same line with it—Balliol and Galloway sepae rately, for the first founder and foundress; 8, in the centre of the north bay—The Prince of Wales; 9, in a line with Nos. 5, 4, 1, 8, and 10, to the north of them—Brakenbury, for the last foundress; 10, 11, severally to the west and east of No. 9—Stanley, Earl of Derby, and Scott of Harden, the present Chancellor of the University and the present Master of the College. This group of boss-shields is a suggestion only; and yet it is a suggestion that involuntarily presents itself. But higher in this fine tower there is work yet to be done which, when accomplished, may mark with becoming honour as well the period of this present rebuilding as that of the original foundation of the College. We have seen that a group of three canopied niches is there, awaiting the coming of the statues, for which they have provided a dignified shelter; and these statues, we trust, will represent John de Balliol, the Lady Devorgilla, and Her Majesty the Queen. Then only are niches the perfection of architectural accessories when they rightly discharge niche-duty; and of these niches the becoming duty is obvious. To take our leave of Balliol, we ascend still higher than the final of the canopy of the central niche, and we now stand upon the summit of the tower leaning against the pierced parapet; we have the whole College spread out before us, close to our standing-place; and when we raise our eyes, and look around, we feel that it would indeed be difficult to describe the encircling panorama in too glowing language.



THE ARMS OF BALLIOL COLLEGE.



## THE TEMPLES OF ATHENS AND THE CHURCHES OF MAGDALA.

AN opportunity has been recently afforded, and is still to some extent available, for an architectural comparison of an unusual and instructive character. The invaluable aid of photography enables the English student to glance, at the same time, at the expressions of the structural ability of different countries and of different ages. The fruits of laborious and expensive travel may be reaped by the 'tarry-at-home traveller' for a few shillings. Of all the many uses of photography, feeble as is our present attempt to realise the comprehensive range of the infant art, none is as yet more striking than that which regards architecture. Buildings are represented by the camera with a fidelity and minuteness that render good photographs even more valuable than the memory of an actual visit to the scene; unless such visit has occupied much more time, and been accompanied by much more labour, than have been consumed by the photographer himself.

Another great advantage of the photographic portfolio is the permanence of its contents. Until recently, this was the last advantage to which sun pictures could lay claim. A certain incomprehensible caprice has baffled the best artists. Whether it were the paper, or the water, or the chemical apparatus, was unknown, but no one would guarantee the permanence of the most exquisite photograph. No one could tell whether it was better to expose photographs to the light, to leave them on the table, to frame and glaze them, or to keep them carefully laid by in the portfolio. No one could assure you that, in the latter case, you might not, some years later, find merely a blank sheet of paper, or an indistinguishable smudge.

The carbon process has removed this difficulty. We are not about to enter, at this moment, further into the subject of the new photographic methods which claim the attention of the artist, than to say that it is now possible to obtain architectural representations, which are more accurate than any effort of the draughtsman, and may prove more permanently durable than are the buildings of which they form the memorials. While stone and marble crumble beneath the action of the elements, the portraiture of ancient and famous structures, which the photographer is now everywhere obtaining, bids fair to last as long as any product of human civilisation.

It is under these impressions that we have been led lately to compare, or to contrast, the photographic representations of certain structures which may be regarded as almost the extremes of the builder's art. Nor is the impression produced on the imagination less profound from the fact that the comparison would seem rather to denote human decadence than human progress. We look at one moment on the highest architectural expression of refined taste, and of correspondent manual skill; we look, in the next, at a series of structures hardly more artistic than are those of the nest-building ape—certainly less remarkable, as indications of forethought and of skill, than the dam of the beaver. Yet the first are two thousand years old—the second are contemporary edifices. The first were reared to solemnise the rites of pagan and polytheistic worship; the second are called Christian Churches. The first are the ruins of Hellas—the second are the actual palaces, forts, and churches of Abyssinia.

At Messrs. Colnaghi's show-rooms in Pall Mall, the reader may examine a very beautiful series of photographs of Greece, taken by M. le Baron des Granges. They are only produced by the process hitherto ordinary, so that their absolute permanence may be doubtful. There is the more reason to lose no time in examining them, while yet in their perfection. And it is much to be desired that positives should be produced from the original negatives, by some indestructible process.

As it is, however, we must observe that a very peculiar beauty of representation attaches to these (and indeed to many other) photographs of limestone rocks and of marble buildings. The metal which is chemically deposited on the paper gives to the eye, even under the English sky, the very shimmer of the Mediterranean sunlight. It is hardly conceivable that so vivid a resemblance to nature should result from the application of any non-metallic pigment. Through the half-closed eye a lustre and a sparkle are apparent, which lead the observer, familiar with the scenes, or with the climate, almost to listen for the dash of the waves. One of the landscapes, taken in Arcadia, is one of the most exquisite representations of fine natural scenery that the art has produced.

The excellent workmanship, and careful bedding, of the Athenian masons, may be studied in these photographs almost as minutely as by a visit to the spot. The actual condition of the famous and noble Temples, reared, in the palmy time of Grecian art, to Jupiter and to Minerva, of those named after Victory and after Theseus, is brought distinctly to our apprehension. And these grand relics of a past civilisation are represented from so many, and such distinct, points of view, that the architect may obtain from the photographs almost all the information that he can require.

The Abyssinian views are contrasts to the Greek photographs in almost every respect. As works of artistic beauty they are not for a moment to be compared. Not that we have any right to complain on this score. On the contrary, there are many of those, whose souls are unenlightened by the sacred and ennobling fire of art, who would be apt to grumble at any evidence that our active and indefatigable sappers and miners had been spending their time in the preparation of exquisite photographs. What has been done is admirable, if regarded from the proper point of view—that of military utility. As a simple method of obtaining, and of preserving, military information of the first importance, the camera is now as necessary a portion of the equipment of an Engineer company as the field telegraph, or (as ought to be) the field balloon. To survey a new country is the indispensable duty of every civilised commander. No survey can now be considered complete that excludes the use of photography.

As rough, military, sun-pictures of some of those grand natural barriers that an Engineer general surmounted with an exactly proportioned exertion of force, without example in the military history of the world, these Abyssinian photographs (which were exhibited at Conduit Street, and are hereafter to be displayed at South Kensington) are fitted to excite the most lively interest.

The simple table of heights surmounted may give to the engineer a more exact and definite idea of the actual difficulties of the march than he would derive from any pictorial representation; but it is far otherwise with the public in general. The deep and perpendicular ravines, the insurmountable mountain scarp and curtains, the toil and the perplexity that met the armed explorers of these tropical ranges, find a feeble shadow in the productions of the field camera.

Amid all the wild magnificence of nature, where nature has displayed her own method of military engineering, nothing can be more miserably contemptible than the evidence of the works of man. The owner, Imperial as he called himself, of the most impregnable fortress in the world, had reared within it, as the scene of the display of his regnal pomp, and as the citadel of his military power, a few of the bittermost kind of pigsties. Thatched roofs and wattled partitions—they cannot be called walls—sheltered the stores and the harem of Theodore. His palace would have fallen a ready prey to a box of lucifers.

When we consider the great antiquity of Abyssinian civilisation; the mystery that so long shed a halo round the name of Prester John; the fact that Egypt, at least, and, if we can trust tradition, Abyssinia also, were highly civilised at a time when the ancestors of the present European nations were squatting, almost like frogs, around the creeks and bays of the Mediterranean; the independent line of apostolical tradition claimed by the patriarchs of the Abyssinian Church—we have ample ground for a feeling akin to awe in regarding these savage relics of a lost political and religious eminence. There may, possibly, be room for a difference of opinion, when we compare the Athens of King George with the Athens of Pericles. We may be destitute of adequate elements of comparison between the Magdala of the barbarian Theodore, and the forgotten capital of his famous ancestress (according to his claim), Balkis, Queen of Ethiopia, who bore the founder of the Ethiopian line of monarchs to Solomon the Wise. But when we compare the ruin of the Parthenon with the actual state of the cathedral of Magdala, we fail to distinguish the signs of that advance of mankind in civilisation, in art, and in morals, which is so generally assumed to have been the result of the historic changes and convulsions of the last two thousand years.

## SOCIETIES.

### Royal Institute of British Architects.

An Ordinary General Meeting was held on Monday evening last, the 18th January, Mr. Charles Barry, Vice-President, in the chair. The most important of the donations announced was 'Tree and Serpent Worship, or Illustrations of Mythology and Art in India,' by Mr. James Fergusson.

The CHAIRMAN stated that the Council had heard, with sincere regret, the intelligence of the death of Mr. Ashpittel, Fellow, which had taken place that day.

Sir M. DIGBY WYATT referred to this event in suitable terms, and expressed the hope that at an early meeting a memoir of Mr. Ashpittel would be read by one of those who knew him best.

Mr. CHARLES FOWLER enquired what was the exact position of the Institute with reference to the proposed new Building Act. He had sat on a committee which had carefully considered the draft of the Bill, and had reported on its provisions to the Council. Had the report of that sub-committee been adopted, and was it intended to communicate it to the general body? The Metropolitan Board of Works was understood to have recently written requesting an expression of opinion from the Institute with reference to the draft of the Bill.

The CHAIRMAN explained that though the Council had adopted the Report of a Special Committee on the Bill, that Report had not yet been forwarded to the Board of Works. A Special General Meeting might, of course, be summoned to reconsider the subject if it was thought advisable to do so, but the Committee had held several meetings, and their Report was the result of a long and careful examination of the Bill.

After some further conversation, it was resolved, on the motion of Mr. D. Brandon, seconded by Sir M. D. Wyatt, that the next Ordinary general meeting (that of Monday, February 1) be made special for the consideration of this subject, and that in the mean time the Report of the Committee alluded to be printed for circulation among the members, and that the notes upon the proposed Bill, prepared by the District Surveyors' Association, be appended to the Report.

The CHAIRMAN then called upon Professor Kerr to read his paper on 'The Architecturesque.' We are compelled to defer any extended report of this paper, which was one of great brilliancy, and was delivered almost entirely *vis à voce*, and illustrated by diagrams. The scope of the paper may be briefly stated as assuming that it is desirable to have a definite word to express exactly that essence or quality of art which raises any structure from a mere building to a work of architecture. To express this form of art the Professor proposes to employ the term which stands as the title of his paper. The chief part of the evening was occupied by illustrations of the so-called architecturesque, a column and entablature, and an arch, being selected as specimens; a rude and simple form of each was considered to represent mere building; and the varieties of each were held to be architectural because 'the architecturesque' has been added to that form.

At the close of the Professor's paper, which was listened to with marked attention, and frequently applauded, the Chairman remarked



that it would be hardly possible to discuss it at any length that evening; and accordingly, after the usual vote of thanks, the subject was allowed to drop, and the meeting adjourned.

#### Institute of Surveyors.

A meeting of the Institute of Surveyors was held at the rooms, No. 12 Great George Street, on Monday, January 11, the President in the chair. Several new members were proposed. Mr. R. B. Grantham then read a paper entitled 'Arterial and Agricultural District Drainage, and the Laws connected therewith.' A discussion ensued, in which Messrs. Ryde, T. Marr Johnson, and others took part. The next meeting will be held on Monday, January 25, when the discussion on Mr. Grantham's paper will be resumed, and a paper will be read entitled 'Parochial Assessments,' by Mr. Edward Ryde.

#### The Architectural Association.

A special meeting of the Architectural Association was held on Friday, January 15, at their rooms in Conduit Street, Mr. W. White, F.S.A., President, in the chair, to discuss the special Report of the delegates to the Architectural Alliance on the subject of architectural education.

The Report of the sub-committee on new classes, to which we referred in our number of the 9th inst., was first read.

Mr. SPIERS, in moving the adoption of the delegates' Report, suggested that in its discussion this evening the members should confine themselves more especially to the remarks contained under heads 4 and 7. There might be differences of opinion on them, which the delegates would be glad to hear and correct; but any attempt to discuss the question of Governmental aid in the foundation of an architectural university could scarcely now lead to any result; and as the opinions on that head expressed in the Report had been framed rather as suggestive than as of immediate necessity, it would be well to accept them as such.

Mr. ALDRIDGE, in seconding the motion, remarked that the Report seemed in every way worthy of adoption, and well calculated to assist, if not to meet, the difficulties of the case.

Mr. RIDGE did not think that any such system as that adopted in the French school would meet with much approval in England, more especially as it happened that the architect who was held in the highest admiration here, M. Viollet le Duc, was not a member of that school. He objected to memorialising such a body as the Royal Academy, because, being composed chiefly of painters and sculptors, they were not, and could not be, judges of architectural requirements.

Mr. MATTHEWS remarked that the Report seemed to favour *external* as well as *internal* education, and he was inclined to think that all our education ought to come through ourselves; that any external instruction could only be theoretical, and theoretical education could have reference only to artistic training. What was wanted to be done was to show the pupil what he had to learn, and what he might learn if he chose to make good use of his time; and that he should be grounded in the elementary parts first. He then suggested that on two afternoons in the week the student might attend lectures, as also on four or five evenings in the week. He was greatly in favour of examinations, which he thought might be held more often by the Institute; and if they would not hold them, then by the Association; but we had no right to expect that other societies or bodies should afford us instruction.

Mr. EDIS, while testifying to the great utility of the Report, and thanking personally the delegates for its composition, did not believe that students entered into the profession with so small a knowledge, either of drawing or of mathematics, as the reporters seemed to infer; he thought, and eleven years of experience as a principal had taught him, that it was in consequence of a *fancy for drawing* that many boys on leaving school were placed by their parents in architects' offices. With reference to French instruction, Mr. Edis—quoting some remarks of the Report which stated that even the winners of the 'Grand Prix' knew little of elementary construction—said he could not agree that we should better ourselves by adopting such a system as that of Paris. The system of premiums might or might not be bad, but he thought that education and examination ought to be compulsory, and that the Institute might refuse to admit architects as members who had not passed through their articles. Although unwilling to propose an amendment, yet he ventured to suggest that, if a sub-committee could be appointed to confer with the delegates and amend the Report, they might more easily come to some agreement; but he (Mr. Edis) should be sorry to see the Report, as it was now framed, sent up to the Alliance as embodying the opinions of the whole Association; and this more especially as the delegates themselves did not all agree.

Mr. SPIERS said that he should be satisfied if the meeting would simply receive the Report; at the same time he thought that if a committee were appointed, it should consist essentially of students; because, as all the other societies were composed of principals, it was very necessary that the Association, a body of students, should express a student's view of the case.

Mr. REDGRAVE agreed with the opinions expressed in the Report; he was unable to see why we should not avail ourselves of the opportunities for instruction afforded by the Royal Academy and South Kensington.

Mr. HANBURY advocated the system of examination, but thought it ought to be made compulsory, as in the case of the Pharmaceutical Society.

Mr. RICKMAN explained that this was not the formal Report of the delegates as such—it was a voluntary contribution on the part of the delegates to assist the Association in their discussion of the subject of architectural education; and that the ordinary Report had already been read at a past meeting, and would be adopted in the usual way at the May meeting of the Association.

Mr. SPIERS in reply said that his opinions and policy were more or less identified with those contained in the Report, and he should confine himself to a reply to the various points raised. In fact, he observed,

Mr. Redgrave had already replied upon some of those points, especially the objections urged by Mr. Ridge against the Royal Academy. He (Mr. Spiers) was unable to see where Mr. Matthews's opinion substantially differed from his own, except that his system of two lectures a week in the afternoon, and four in the evening, would be marvellously incomplete. Mr. Matthews had indeed objected to our utilising external assistance; but as it was very evident that the members of the Association and of the Institute could not be expected to be able to give long series of lectures on the subjects necessary to be studied, either in the afternoon or evening, it would be necessary to go outside the profession to obtain lecturers. And as to grounding a pupil in elementary work, and teaching him what he might learn and had to learn, it was the very absence of such a system which had called forth the Report, and, indeed, the whole movement; and it was rather presumptuous to imagine that if the Institute had had the greatest difficulty in finding examiners, this Association could do so offhand. Mr. Spiers could not agree with Mr. Edis that pupils having taken a fancy to drawing at school had thereby been led to architecture as their future profession. He (Mr. Spiers) thought that it could be shown that the drawings done at school were, as a rule, absolutely worthless, and gave them but little, if any, additional facilities in learning architectural drawing. With regard to the 'Grand Prix' students, Mr. Spiers said that he did not quite advocate the French system as it stood; the remarks in the Report were, perhaps, somewhat exaggerated, for the knowledge of construction possessed by the French students was based on intimate theoretical and applied acquaintance with descriptive geometry, such as prevented their making mistakes in general construction, though the economical applications of it, as to the scantlings of timbers, &c., were sometimes disregarded. He added, that, in his opinion, the Institute would be very glad to lay down such a rule as that mentioned by Mr. Edis, if it were likely to benefit them; but he (Mr. Spiers) maintained that they could not at present take as their standard of excellence the rotten and defective system of pupilage as it now existed; that all the societies in the kingdom would oppose them, and a rival Institute would be formed if they attempted such a step. The best thing to be done would be to raise the standard of education, lay down curriculums of study, unite with other bodies to promote architectural education in a proper spirit; and then, when sufficient power had been obtained, and the good actually done was adequately recognised by other Architectural Societies, it would be time enough to establish compulsory education, and lay down the laws for any system of instruction preferred, provided it worked well.

The Report on Education was received, but the lateness of the hour did not admit of the meeting taking up the question of the new classes, which was adjourned to a future meeting.

#### The London and Middlesex Archaeological Society.

The first of the series of evening meetings for the session of 1869 was held at the rooms of the Society, No. 22 Hart Street, Bloomsbury, on Monday evening last, J. W. Butterworth, Esq., F.S.A., in the chair, and was numerously attended. A large collection of interesting objects was exhibited, the majority of which, viz., a square wooden cist, a large square glass bottle, two urns, and the remains of a small wooden keg, were discovered in the excavations recently made in Moorfields, and were exhibited by the kind permission of J. W. Baily, Esq.

Mr. PRICE, the director of the evening meetings, explained the objects of antiquity exhibited. The Roman remains on the table, as a series, comprised, perhaps, one of the most complete of the many instances of Roman interment that have been from time to time discovered in the Metropolis; they were found upon a spot, formerly the site of a religious house, known as a priory of canons, founded in 1246, by Simon Fitzmary, Sheriff of London. In olden times this district comprised extensive moors and fens without the City walls, and, like Smithfield and other open sites round London, was often selected by the Romans as a place of sepulture. The interment under consideration seemed to be one after cremation, as there were no appearances of the existence of entire bones. Most of the vessels contained fragments only, but all bore evidence of fire. The wooden cist Mr. Price pointed out as being extremely curious, but since it had been exhumed its appearance had much altered by shrinkage from exposure to the atmosphere: it had very much of the form and size of the tile tombs of which an example was found at Windsor some time since, and was presented by Her Majesty the Queen to the British Museum. Over the cist was found a thick lid or cover of earthenware, slightly domed. Adjoining it was a large amphora 14½ inches in diameter, and flat at the base, of a form not usually met with. The urns are of the usual coarse pottery of a familiar type. It was also stated that the large square glass bottle exhibited is an object extremely rare in London discoveries. It contained bones, and was covered by a small lid of earthenware. With reference to the small wooden tub, its use, and the cause of its position in the interment, must for the present be left to conjecture. It represented an object which Mr. Price might almost venture to say is now noticed for the first time. It is on a small scale, and much after the model of a cupa mentioned by Pliny and other writers as a cask, or butt, with wooden staves, and bound with circuli or hoops of iron, and employed by the Romans in the keeping or transportation of wine, vinegar, or other fluids.

Mr. MILBOURN, Architect, the indefatigable Hon. Secretary of the Society, subsequently read a paper on the Church of St. Mildred the Virgin, Poultry, in which he proceeded to give an elaborate history of the Church from very early times. St. Mildred was the first Abbess of Minster, in the Isle of Thanet, the daughter of Mervald, son of Penda, King of Mercia, in whose honour it is supposed by some of the early chroniclers to have been dedicated; he stated that a shrine or tabernacle to the honour of the Saint existed in the Church as late as 1500, in which year Christopher Luliok bequeathed five marks to the gilding of the said tabernacle. The earliest evidence of a presentation to the Church occurs in 1326. In 1420 Thomas Morsted, Alderman of London, and surgeon to the kings Henry IV., Henry V., and Henry VI., gave a plot of land to the Church for a burial-ground, and not long after a parsonage house and

priests' chambers were erected on this plot of ground, on posts and pillars, with cloisters under for the burial of the dead.

The first church becoming decayed, it was taken down, and the rebuilding commenced about 1456. Mr. Milbourn gave some very interesting extracts from an inventory of the goods and ornaments of the church, temp. Edward VI.

Some account was given of the ancient Chapel of the Blessed Mary, of Conyhope Lane, now Grocers' Hall Court, afterwards called the Chapel of Corpus Christi and St. Mary; and also many extracts from the early registers, and, among others, that of the baptism of an African Prince in 1610; and the burial, in 1588, of a prisoner who is stated to have stolen the Queen's gloves.

He then proceeded to give an interesting account of the steps taken by the parishioners to rebuild the church after the fire of London, and concluded his paper on this church by a description of the present building and pulpit, illustrated by drawings from the pencil of J. P. Emslie, Esq., one of the members of the Society. An animated discussion followed, and the proceedings of the evening closed by a unanimous vote of thanks to the chairman.

#### Society of Civil Engineers.

On Monday night this Society held their first meeting for the season at Exeter Hall. The minutes of the last meeting having been read, Mr. Harris, the secretary, introduced to the members Mr. F. W. Bryant as the newly-elected president. Mr. Orlick rose and said he thought all present would join him in bearing witness to the energetic and able manner on which the late president, Mr. Baldwin Latham, had transacted the affairs of the Society during the time he was in office, and moved a vote of thanks to that gentleman, which was cordially accorded. Mr. Bryant then came forward and said, in taking his place for the first time as president of the Society, he thanked them from the bottom of his heart for the high honour they had conferred upon him. It was more than ten years since he had joined the Society, and he had much to thank it for in enabling him to glean a great amount of information in various branches of his profession. He congratulated the members upon its general advance of numbers, which had increased quadruple since he was a member. He next dwelt upon the considerable depression in all business caused by the late money panic, particularly in the engineering profession; and remarked that at the present time some people are apt to say there is no work for engineers at home, but he would ask if all our rivers are bridged over—all the docks, harbours, piers, and lighthouse defence of shores completed? Surely, then, with the return of public confidence to properly matured schemes, he expected that the engineers of Great Britain would find that there is yet something to do in their native country. He next commenced to enumerate the gigantic engineering works that drew towards a finish during the last year, which would certainly mark the present engineering era for generations to come; and mentioned amongst them the Thames Embankment, the Main Drainage works, the new Blackfriars Bridge, the Metropolitan railways (inner and outer circle), the East London Railway, the Millwall Docks, the West India Docks, the Holborn Valley Viaduct, and others of less importance. In his opinion, however, there was one improvement very much needed in London across our crowded thoroughfares, and that was a foot-bridge of light structure. Out of London, too, there had been many engineering works of interest carried on, the principal amongst which are the bridge over the Mersey at Runcorn, and the viaduct over the Solway; there were also a bridge over the Trent at Nottingham, and the Chatham Docks, the new docks at Hull, and the Sunderland Docks. On the Continent, he told us we must not forget the most remarkable railroad of modern times—that over Mont Cenis, which, in spite of differences of opinion, must be considered a great engineering achievement. He drew attention to the vast field India presented to the engineering profession; and, after giving an account of the advanced state of the Suez Canal, he brought his inaugural address to a close by recapitulating the great strides which telegraphy had made of late. The meeting was concluded by Mr. Orlick moving a vote of confidence in the new president, which was seconded by Mr. Nursey.

## THE HANDY-BOOK OF HOUSE-BUILDING.

### CHAPTER I.

(Continued from page 23.)

**Comfort.**—The well-judged planning of each individual room is essential to comfort. Few persons who are either observant of the wants of others, or at all sensitive to their own comfort, can have failed to notice that, in some rooms, even very small ones, there seems space for all the furniture and a sufficiency of places where to sit free from draft, and within reach of the fire and of the window; while in other rooms which are no smaller, there is absolutely no space for half the requisite articles of furniture; and even when the apartment is furnished, there is not one comfortable spot in it. To a good architect there is little mystery in all this—the one room is well planned, the other not; and the smaller the room, the more essential to comfort are several of the points of good planning which we are about to state.

The fire is best placed in the centre of the long side of a room; next best (if the room be nearly square) in one corner; worst at one end, unless where there are two fires. The introduction of two fire-places into one room, even if a large one, should be, where possible, avoided. There is always risk of smoke. If they must be employed, they should be put as far apart as practicable. The door should be placed remote from the fire: the best position is in the wall that faces the fire-place, and not far from a corner; not quite so good a position is when the door is in one of the walls at right angles with that in which the fire-place itself is, but near a corner. The third best position is in the same wall as the fire-place. A door exactly facing the fire is in a bad situation, but the worst of all is one which allows the draft to blow directly across the hearth. The opening of a door so

placed rarely fails to draw down a gust of smoke from the chimney. It is worth while to add that the smaller the room the greater the need for care in fixing the relative positions of the door, the window, and the fire; where space is ample, the very distance between these features is sufficient to diminish discomfort from drafts. In such a room sufficient space for sitting within reach of the comfort of the fire, or the light from the windows, is easily to be procured.

The window or windows are best placed in that or those walls which are not occupied by either a fireplace or a doorway; though sometimes a very pleasing effect is produced by having a window directly over a fireplace, or two, one on each side of it. Windows for this situation ought, however, to be very wind and weather tight, or they will destroy the comfort of the fire-side. An oblong room is seldom quite as well aired and lighted by windows at the end as by windows at the side. An even number of windows in the side or end of a room is never so satisfactory as one, three, or five; but it is often difficult, especially in houses built in streets, to avoid both end light and a central pier. Where a room can be thoroughly lighted from one side, it is often prudent not to introduce windows in the adjoining side, even though it be an external wall; cross lights are almost always objectionable, and windows in more than one wall sometimes interfere with warmth.

The shape appropriate to a room in order that it be used with the greatest comfort varies with its purpose. In a dining-room the chief purpose of the room is sitting at a dinner-table, and therefore, as custom in this country enlarges our dining-tables only in one direction, that of their length, a dining-room ought rarely to be much wider than is required for a dining-table, a double row of guests, and ample space for service; but if entertainments on a large scale are contemplated, it may fairly be of considerable length. In smaller houses, the width remaining nearly the same, the length will be much shorter, and the room will be brought near the proportions most pleasant for an ordinary family living room, where a family circle, and not two long rows of guests, are to be provided for.

The Morning-room is always intended for a group surrounding that cheerfulest of tables—a family breakfast-table; and it is on that account that a tolerably square proportion is, as has been already observed, most appropriate to it. As the breakfast party in a family house is rarely so large as that at dinner, and does not require much waiting upon, a much smaller room than the dining-room answers for this meal, and is sufficient for the morning occupations of those who remain to use it during the forenoon.

The Library is more devoted for the use of one or two studious persons where it is really a library, and for occasional use as an additional sitting-room, suitable for business purposes, where books are not much collected, is rather more open to variation than the other rooms. A very large collection of books ought to have a long room with many windows on one side. Perhaps the idea of the room, where not unusually large, ought to be that every book on its shelves shall, as far as possible, be equally accessible to one person, for whom a warm and well lighted seat is provided. This implies a room that approaches a square or circular form, with much wall space for book-shelves. A projecting bay large enough to contain a reading table is a pleasant addition to a library, and if the library be very large indeed, such a bay may have a fire-place in it. A very cheerful example of this feature occurs in the library at Windsor Castle.

Lastly, a Drawing Room requires, if there is to be dancing, both plenty of length, and a few such nooks and flirting places as bay windows, balconies, and a conservatory afford. It will often, however, be filled by persons walking about in groups, and on such occasions it is desirable to give as free circulation as possible. For this reason it is that greater width in proportion to its length has been prescribed for the drawing-room than the dining-room requires. It is not a bad expedient, when designing an important house, to make a plan of the drawing-room with all its usual furniture, in order to make sure that there is an appropriate space for every article and room for guests beside. In any case, as has already been said, this must be done for the pianoforte; and even in a small house, the possibility of that instrument being a grand piano, which it will be if the inmates are very musical, must be provided for. In planning town drawing-rooms, such as can be used as a suite, the circulation of a crowd of guests from room to room, and, if practicable, back another way, should be attempted to be provided for.

Actual size is one of the greatest and most important elements of comfort. It is, perhaps, rather less unsatisfactory to have rooms too large than too small, but there are great disadvantages in both faults. It is manifestly impossible to lay down any rule as to what size will be found satisfactory in any given case. All that can be done is to point out that empty rooms, still less rooms in process of construction, are no safe guide. Those who propose to build or buy or take a house, and wish to have rooms of the size which they will permanently like, can only with safety follow one rule. The new rooms must be the same superficial area, and very nearly the same dimensions, as rooms with which their intending occupant is already familiar, and which, *furnished and in use*, are such as he would wish his own to be. The soundness of the precaution of going to see, at any trouble, a furnished room of the size and shape of each important apartment that it is intended to build will, it is hoped, be obvious; it is one that can never be safely neglected. In a town house, as a rule, larger living rooms are required in proportion to the number of bedrooms than in a country house, because most visitors in the country are guests sleeping in the house, while in a town house this sort of visiting is comparatively rare.

Warmth is essential to comfort. To secure this, a sufficiently powerful fire, well placed, must be seconded by well-fitting doors and windows (also well placed) and thick walls, which, if external, will be all the better if they are double. Excessive window-space diminishes warmth very much; plate-glass in windows is, however, warmer than thinner glass, and is also more cheerful and more *recherché* in effect. Rooms on the ground-floor, with no basement under them, should be protected by forming a rough ceiling below their floors, or, at least, should have fillets of wood nailed under the joints of the floor; this will promote warmth by preventing the blowing in of cold air from below through cracks in the boards. Brown paper pasted over the floor boards partly serves the same end. Several ingenious inventions exist for obtaining more heat from our coal fires than

the very small proportion actually irradiated, by heating air in chambers behind the fire, and letting it enter the room. The use of some of these will, no doubt, promote warmth.

We have spoken of freedom from smoke as an essential element in the comfort of a house. This may be promoted by carrying the chimneys high above the roof, and building a separate external chimney shaft to each flue, but depends more upon the careful building of the flue than aught else. Both smoke and drafts are likely to be diminished if a special air supply be brought to the fire by means of a flue and a grating in the hearth. This air supply will, however, interfere with the efficiency of the fire as a ventilator. If living rooms be small, or whatever their size if gas be burnt in them, special and efficient provision for their ventilation is essential to comfort.

## ON THE PROGRESS AND PRESENT CONDITION OF THE ENGLISH SCHOOL OF ART.

THE Royal Academy of Arts has just completed a century of existence; and now that it is about to enter upon a new home, and, we hope, a new career of progress and prosperity, it may be well briefly to sketch the history of the development and the present condition of the English School. For the National School is coeval with the National Academy. It is true that in former years there have been English artists practising their profession in this country; but they confined their attention almost exclusively to portraiture, or to what they were pleased to consider as decorative art. And as, moreover, in both these departments they showed themselves either the imitators or disciples of the great Continental artists of the day, they evinced no national characteristics, and certainly led to the foundation of no national school.

The first English artist impressed by the spirit of his country and his age was Hogarth, and it was by one of his contemporaries that the Royal Academy was founded. Hogarth gave a decided and permanent bias to English art, a bias we consider beneficial; and we say this advisedly, knowing well that there are some artists and critics amongst us who assert that Hogarth mistook his vocation in becoming an artist; that, in fact, he was a satirist or preacher, who made art the medium for conveying moral sentiments and opinions. Now, we think that this adverse opinion cannot be sustained. If we examine the essential requirements of Art, we shall find that Hogarth complied with them. A picture appeals to two things: the sensuous and the mental perception. To satisfy the former it is necessary that a picture should possess beauty of some sort; beauty of form, of colour, or of chiaroscuro, &c.; so that it should be a pleasant thing for the eye to dwell on, apart from any interest we may feel in its subject: whilst to satisfy the latter it is necessary that the subject should be evident without literary help; although, being evident, it may be illustrated by the additional interest which a knowledge of the individuality of the characters represented, or of the scene, may convey. And it is further necessary that we should feel that the motive of the picture is one that could not have been better realised by literature, the drama, or any other mode of expression. If, then, we apply these tests to Hogarth's works, we shall find that the majority of them, certainly of those which we have seen, are full of artistic beauties of form, composition, colour, &c., and even of execution; indeed, in this latter respect, we think they might be advantageously studied by our younger painters; at the same time the subjects are clearly evident, if anything rather too much so, and we feel that no description, however vivid, and no dramatic representation, however forcible, could compete, in the intense realisation of the subject, with the creations of the artist.

The aim, to realise intensely the subject of the picture, an aim in which Hogarth was so successful, seems to us one of the distinguishing features of our school. Doubtless it is shared by some of the modern Continental painters; and some of the ancients, the Dutch especially, worked in the same direction; but can it be said of any of them that they succeeded like Hogarth or Wilkie?

The influence of Hogarth was not felt for some time after his death, the taste of the day being too much opposed to him to excite imitation; and the school generally was more affected by the efforts of Reynolds and Gainsborough, and the charm of sentiment which they infused into their works. But in fact, after the death of these great men, English art fell for a time into a dreary condition: the painters of the day, men whose names are now forgotten, indulged in the representation of mythological or Shakespearian subjects, without any perceivable aim whatever, and with a corresponding success. It is not until we come to Wilkie and his colleagues (unless we except here and there a genuine name) that we find anything like a decided advance. And what men these were!—Wilkie and Turner, Leslie and Constable, to say nothing of men of lesser note. Wilkie seized upon the throne left vacant by Hogarth, and added to its possessions the wealth of greater achievements in the principles of artistic beauty and of technical excellence. He carried finish, indeed, to an extent which has powerfully influenced not only the efforts of our painters, but also the tastes and demands of the public. Leslie succeeded in realising as great a charm of sentiment as we find in the works of Reynolds or Gainsborough, and added to it a delineation of character and a freshness of individuality to which they did not attain; whilst Turner and Constable (the former of course pre-eminently) carried landscape painting to an unparalleled height—a height which it would be difficult indeed to equal. We are surprised, however, at the great falling off in this department of art which has occurred since the death of these two men, and also at the little appreciation of Constable which exists in this country, seeing how much the French school of landscape (so superior to the English) is founded on his works. We confess we wonder also at the remark which certain critics have lately been fond of making—viz., 'That it is a shame that landscape art is not more largely represented in the ranks of the Academy'—though they always omit to tell us who should be its representatives: indeed, after making this remark, they generally proceed to find fault with all the landscape pictures of the day. Certainly the Academy has not for some time received any accession of members of this specialty; but the explanation is simple. Unless we class

G. Mason as a landscape painter, there has hardly existed for some time any one of sufficient talent or ability to deserve the honour. We trust our younger landscape artists will look to it, and abandon that exclusive imitation of fact, that attempt to produce coloured photographs in which they seem to delight, and pay a greater attention to the higher qualities of their art, and study more closely the works of the French masters and of their own great dead.

Wilkie and his contemporaries placed English art on a sound and healthy footing. If in the works of their immediate successors there was too great a distance between the observation of nature and the necessary conventions of art, that was a fault soon to be protested against by the next movement of the school, the movement known as Pre-Raphaelitism. The original doctrine of Pre-Raphaelitism—that the works of the early Italians were superior to those of Raphael and his successors—is sufficiently absurd, and need not occupy our attention here, as it was very soon abandoned; but the practice of Pre-Raphaelitism—the close study of fact, a study carried at first to an objectionable and injudicious length—has nevertheless proved of lasting benefit. It may be doubted how far this movement would have been successful had it not been headed by a man of such unquestionable genius as Mr. Millais; for of all the ardent spirits who first enrolled themselves under its banner, only two, Messrs. Millais and Rossetti, have since shown that they were men of genius. Some people may think that we ought also to include the name of Mr. Holman Hunt: this we are unable to do. We consider that much after which Mr. Hunt strives, when tested by the rules laid down above, will be found unfitted for pictorial representation; whilst he has so blindly followed after the letter of Nature as effectually to destroy her spirit. The honour that is due to an intellectual mind and to patience and hard work we are ready to allow him; more than that we cannot at present grant.

The working of the Pre-Raphaelite movement brings us down to the art of the present day; and here we see everywhere around us efforts being made to develop qualities of art to which attention has not yet been sufficiently directed. Thus we find Messrs. Watts, Leighton, and others aiming at style and the higher requirements of classical art. Mr. Leighton especially deserves respect for the conscientious devotion which has led him to restrict so much of his attention to the illustration of a class of subjects eminently suited to the attainment of the artistic objects he has in view, but eminently unsuited to popular tastes and demands. Whenever an artist sets himself the task of endeavouring to achieve perfection in any particular quality of art, he is naturally apt to be blind to the advantages or necessities of other qualities, and inclined to be indifferent to public criticism. If he is successful in the task which he has undertaken, the public may be disposed to make allowances for his shortcomings; but as these ought not necessarily to exist, it would be well that he should study the opinions of others, lest the fervour of enthusiasm should lead him astray from the dictates of common sense and reality. For without common sense and reality no work can be really great or enduring, and the great men of old were especially remarkable for possessing these qualities.

We would apply the foregoing remarks especially to two of our younger painters, Messrs. Legros and Whistler, whose efforts to obtain breadth, correctness, and simplicity of tone are eminently successful, but whose works are marred either by the absence of other excellences or by a deficiency in common sense or reality. The effort for breadth is one of the most noticeable features of the school at present, and especially in relation to the work of Mr. Millais, who, abandoning altogether the practice of his earlier days, has adopted a style which we think will lead to a great future, though it has excited the surprise and somewhat bewildered the judgment of the public. The subjects which our artists now treat are marked by a greater refinement and absence of vulgarity. In the domain of history they evince a much truer and stronger historical feeling, and are much more accurate in the rendering of the scene. Religious art is the only one in a state of decadence: this may be partly owing to the unsettled state of religious opinion. What little is done in this way is a mere repetition of the forms and mannerisms of the old masters, but lacking that clear faith in the conception of their subjects which they possessed.

The great want of the day in our opinion is education, and it is becoming a pressing need. Every thoughtful observer must have noticed that whereas in an exhibition of French or Continental works there is a prevalence of the results of education—sound drawing, good execution, &c., &c.—these are the very things most conspicuously absent from an English Exhibition. Now we do not wish to see the healthy individualism of our artists swamped in a universal system, but an average amount of knowledge we do require, and we especially demand that our students should receive a good preliminary education. We were surprised to learn how many of our younger painters—such men as Messrs. Calderon, Leighton, Welles, Yeames, Mason, &c.—have enjoyed the benefits of Continental study, and only hope that our future artists may not have, like them, to seek abroad for good instruction. As the foreign 'atelier' system does not seem to be favoured in this country, we must look to the schools of the Royal Academy to remedy existing deficiencies. We think that a more careful and thorough supervision on the part of the visitors (and we are happy to hear that the Associates also are in future to be eligible for the office), and the engagement of first-class permanent instructors, would do much to alleviate the present state of things; and as the Academy, we are told, will in future have ample accommodation for their schools, and we believe, also, ample funds at their disposal, we have no doubt this matter will receive prompt and proper attention. Perhaps the urgent necessity of good education will not be thoroughly felt till we have a greater demand in this country for decorative art, but that is a demand which is said to be on the increase; certainly there is a large field for its employment in the great public buildings which we are everywhere erecting. The efforts of the South Kensington Museum to develop the practice of decorative art are highly commendable, and we shall hope to examine these efforts more fully in a future article.

On the whole we consider that, looking at the progress and present condition of the English School, we have reason to be gratified with what has been and is being done, and to expect that in its new home the art of this country will continue to make satisfactory progress.

## ILLUSTRATIONS.

## THE PLOUGH BREWERY, WANDSWORTH ROAD.

The accompanying engravings represent a building which has been recently erected in the Wandsworth Road for Mr. Thomas Woodward, on the site of the old Clapham Brewery, from the designs and under the superintendence of Mr. C. J. Shoppee, architect, Doughty Street, Mecklenburgh Square; by Messrs. Jackson & Shaw, contractors. Messrs. H. Pontifex & Sons were the engineers and copper-smiths, and Messrs. J. Hurrell & Son the back and vat makers.

The most recent improvements have been adopted by Mr. Woodward. The brewery is a ten-quarter, but capable of extension to twenty quarters. It is not of large dimensions, and is built with a view to save as much manual labour as possible. By reference to the section, it will be observed that hops and malt are conveyed to the top of the building, and thence removed by their own weight to the place designed for their reception. With some breweries the opposite is the case, but only those which have been enlarged, not rebuilt; in these the grinding of malt is conducted in the basement, and the material is conveyed by Jacob's ladders to its destination.

The site presented some difficulty, the ground falling 16 feet from front to rear. A basement has been constructed over the entire area, which is vaulted in groined brickwork from massive cast-iron columns, fixed on Bramley Fall stone bases, with similar stone springers. This vaulting is concreted, asphalted, and the surface, where used for yard and sheds, paved with granite.

The basement comprises—arched stores and vaults, boiler rooms, coal vaults, cleansing room, and tun room. Access to the basement is by a stone staircase leading from the ground floor. The well is at foot of the basement stairs.

The ground floor comprises—entrance gateway, the height of two storeys, with flapways in ceiling, and sack tackle for hoisting malt and hops, clerk's office, engine house and entrance to brewery, coolers, hop back, and refrigerator, yard in rear, dray shed on east side of yard with lift for casks from basement, cask shed on west side of yard, cooper's workshop, men's water closets, &c.

From the yard an incline leads to the stabling, &c., which is built on the level of the ground in the rear.

The first floor comprises—private office, brewer's office, wort copper, under back, store room, and spaces over coolers, &c.

The second floor comprises—hop room, grinding room, mash tun and stages, liquor copper and stages.

The third floor is entirely for malt store. The cold liquor tank forms the roof covering over portion of second floor.

The buildings are of the most substantial character, the facing bricks being the Burham Company's white bricks, with York stone window sills, Portland stone bases to gateway, box stone dressings to rustic jambs of gateway, and voussoirs, and keys of arch, and tablet over.

The roofs are slated, with lead gutters and flashings, &c.

The columns to dray and cask sheds of cast iron.

The yard, sheds, &c., are paved with granite, and granite spur stones are fixed wherever needed.

The engine shaft is 73 feet high above ground line, with Portland stone offset, base, and head.

The entrance gates are 4 inches thick, with raised panels below, and ornamental iron panels above, and scroll capping, and wrought iron monogram in centre.

The iron railing towards the Wandsworth Road is wrought; with wrought iron gates, and cast iron standards, on York stone bases.

## A RETROSPECTIVE REVIEW

OF

## SIR HENRY WOTTON'S ELEMENTS OF ARCHITECTURE.

PART I.—(Continued from page 35.)

The subject of *arches and vaults* may be resolved into a few theorems. (1.) All solid materials free from impediment descend perpendicularly downwards. (2.) Bricks of ordinary shape, if laid in a row between supporters sustaining the two ends, will necessarily sink even by their own natural gravity: therefore to make them stand we must either change their posture or their figure, or both. (3.) If bricks moulded or stones shaped wedgewise be laid in a row with their ends supported, none of them can sink till the supporters give way. But as the supporters are subject to much impulsion, especially if the row be long, this form is seldom used but over windows or narrow doors. (4.) If the materials figured wedgewise be disposed in form of some arch or portion of a circle, pointing all to the same centre, neither the pieces can sink downwards, nor the supporters or buttments suffer so much violence as in the precedent flat posture, for the roundness will always make the superincumbent weight rather to rest upon the supporters than to shove them, whence may be drawn an evident corollary, that the safest of all arches is the semicircular, and of all vaults the hemisphere. (5.) As semicircular arches are the roundest and securest, so those are the gracefulst which, keeping the same height, shall yet be distended one-fourteenth part longer than the diameter. Upon these five theorems all the skill of arching and vaulting is grounded. As for *pointed arches*, both for the na-

tural imbecility of the sharp angle itself and for their very uncomeliness, they ought to be exiled from judicious eyes, and left to their first inventors, the Goths or Lombards, amongst other reliques of that barbarous age.

The next to be considered are the *apertions*, which comprehend doors, windows, staircases, chimneys, or other conducts—in short, all inlets or outlets. To which belong two general cautions: (1.) That they be as few in number and as moderate in dimensions as may possibly consist with other due respects, for all openings are weakenings. (2.) That they do not approach too near the angles of the walls, for it were indeed a most essential solecism to weaken that part which must strengthen all the rest.

*Doors and windows* (the inlets of men and of light) are coupled together because their due dimensions are brought under one rule by Leon Alberti, who, from the school of Pythagoras, doth determine the comeliest proportion for breadths and heights, reducing symmetry to symphony, and the harmony of sound to a kind of harmony of sight after this manner. The two principal consonances that most ravish the ear are, by consent of all nature, the fifth and the octave, whereof the first riseth radically from the proportion between two and three, the other from the double interval between one and two or between two and four. Now if we shall transport these proportions from audible to visible objects, and apply them as they fall fittest (the nature of the place considered)—namely, in some windows and doors, the symmetry of two to three in their breadth and length, in others the double as aforesaid, there will indubitably result from either a graceful and harmonious contentment to the eye. A frank light can misbecome no edifice, temples only excepted, which were anciently dark, as they are likewise at this day in some proportion, devotion more requiring collected than diffused spirits. Yet we must take heed not to make a house all eyes, like Argus, which in northern climes would be too cold, in southern too hot: besides, there is no part of a structure more expensful than windows, or more ruinous, not only as being exposed to all violence of weather, but because, consisting of so different and unsociable pieces as wood, iron, lead, and glass, and those small and weak, they are easily shaken.

*Staircases*.—To make a complete staircase is a curious piece of architecture. The vulgar cautions are these:—That it have a very liberal light, against all casualty of slips and falls; that the space above the head be large and airy; that the half spaces be well distributed at competent distances for reposing on the way; that to avoid encounters, and besides to gratify the beholder, the whole staircase have no niggard latitude; that the breadth of every single step be never less than one foot or more than eighteen inches; that they exceed by no means half a foot in their height; that the steps be laid somewhat sloping, that so the foot may in a sort both ascend and descend together, which, though observed by few, is a secret and delicate deception of the pains in mounting; lastly, to make the staircase of this proportion:—three for the perpendicular from the stairhead to the ground, four for the ground line, and five for the whole inclination or slope in the ascent.

The Italians, who make very frugal fires, are not perchance the best counsellors on the subject of *chimneys*. From them we may better learn how to raise mantels within the rooms, and how to disguise gracefully the shafts of chimneys abroad. Philippe de l'Orme observeth very soberly, that who in the disposition of any building will consider the nature of the region and the winds that ordinarily blow from this or that quarter, might so cast the rooms that he should little fear the incommodity of smoke; and therefore he thinks that inconvenience to proceed from some inconsiderate beginning; or, if the error lay not in the disposition, but in the structure itself, then he makes a logical enquiry, that either the wind is too much let in above at the mouth of the shaft, or the smoke stifled below, or there is a repulsion of the fume by some higher hill or fabric, or the room must be necessarily both little and close, so as the smoke cannot issue by a natural principle, wanting a succession and supply of new air. In these cases he will have us provide two hollow brass balls of reasonable capacity with little holes open in both for reception of water, when the air shall be first sucked out. One of these we must place with the holes upwards upon an iron wire, that shall traverse the chimney a little above the mantel at the ordinary height of the sharpest heat or flames, whereof the water within being rarefied, and by rarefaction resolved into wind, shall break out and so force up the smoke which otherwise might linger in the tunnel. With the other ball we may supply the place of the former when it is exhausted, or for a need blow the fire in the meanwhile. Palladio observeth that the ancients warmed their rooms with secret pipes that came through the walls, transporting heat to sundry parts of the house from one common furnace; and it might be preferred before our own fashion, if the very sight of a fire did not add to the room a kind of reputation, as old Homer doth teach us in a verse.

Touching conducts for the sullage and other necessities of a house (which, however base in use, yet, for the health of the inhabitants, are as considerable and, perhaps, more than the rest), art should imitate nature in those ignoble conveyances, and separate them from sight into the most remote and lowest part of the foundation, with secret vents passing up through the walls to the wild air aloft, for the discharge of noisome vapours.

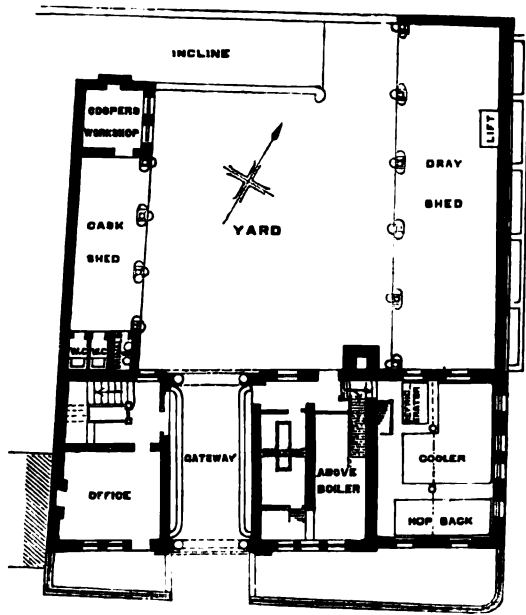
Before entering on the subject of partition, or the casting and contexture of the whole work, a few general precautions may be given:—

1st. Let no man settle his fancy upon any draught of the work on paper, however exactly laid down, without a model of the whole structure, and every parcel and partition in pasteboard or wood. 2nd. That this model be as plain as may be, without colours or other beautifying. Lastly, the bigger this type be the better. For a fabric of some forty or fifty thousand pound charge, thirty pounds at least ought to be laid out in an exact model.

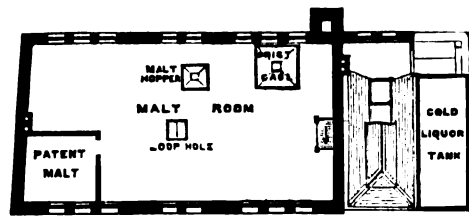
By *partition* is understood a graceful and useful distribution of the whole ground plot. The gracefulness will consist in a double analogy—first, between the parts and the whole, whereby a great fabric should have great partitions, great lights, great entrances, great pillars or pilasters—in a word, all the members great. Next between the parts themselves, as regards their length, breadth, and height. The ancients made the length of their rectangular rooms double the breadth, and the height one-half of the breadth and length summed together. When the room was square, they



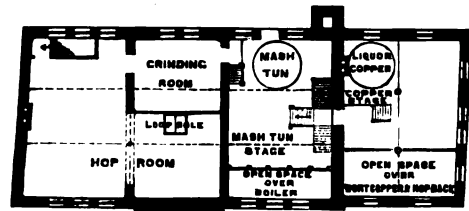
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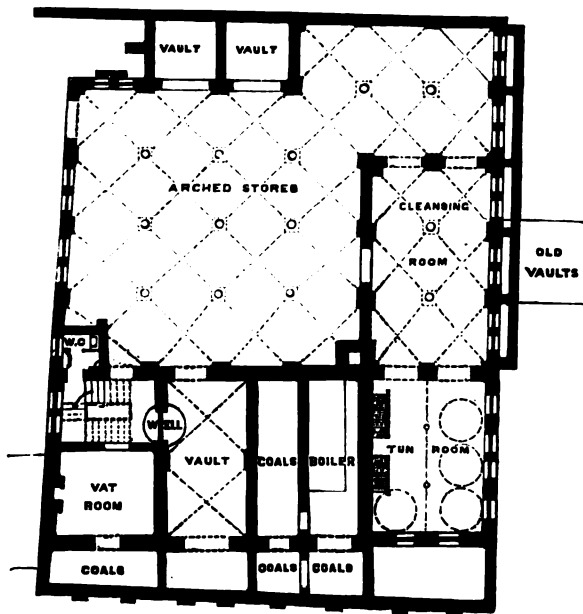
GROUND PLAN.



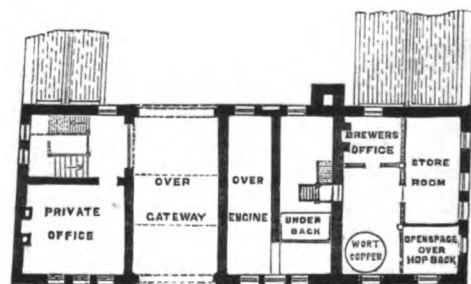
THIRD FLOOR PLAN.



SECOND FLOOR PLAN.



BASEMENT PLAN.

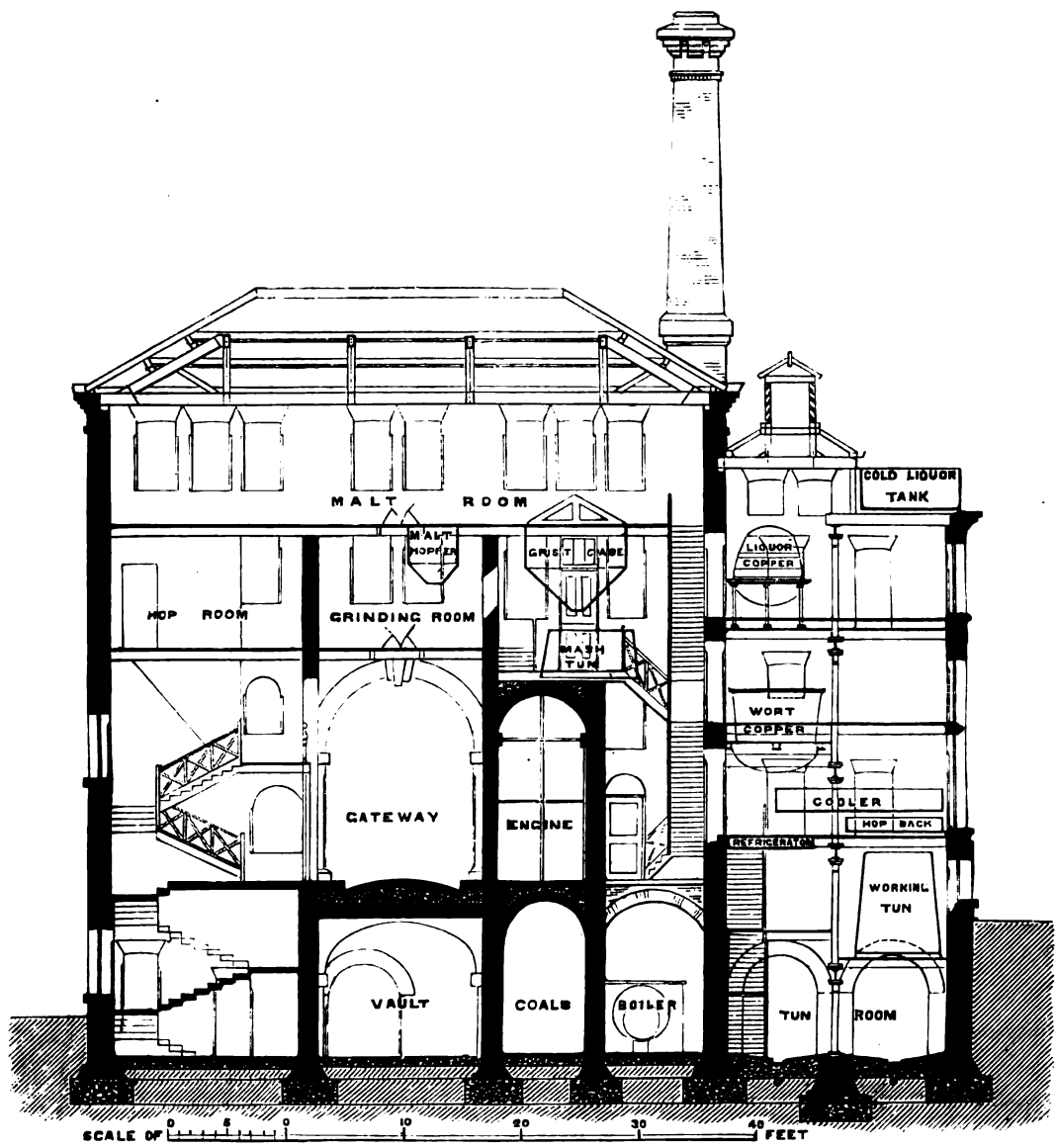


FIRST FLOOR PLAN.

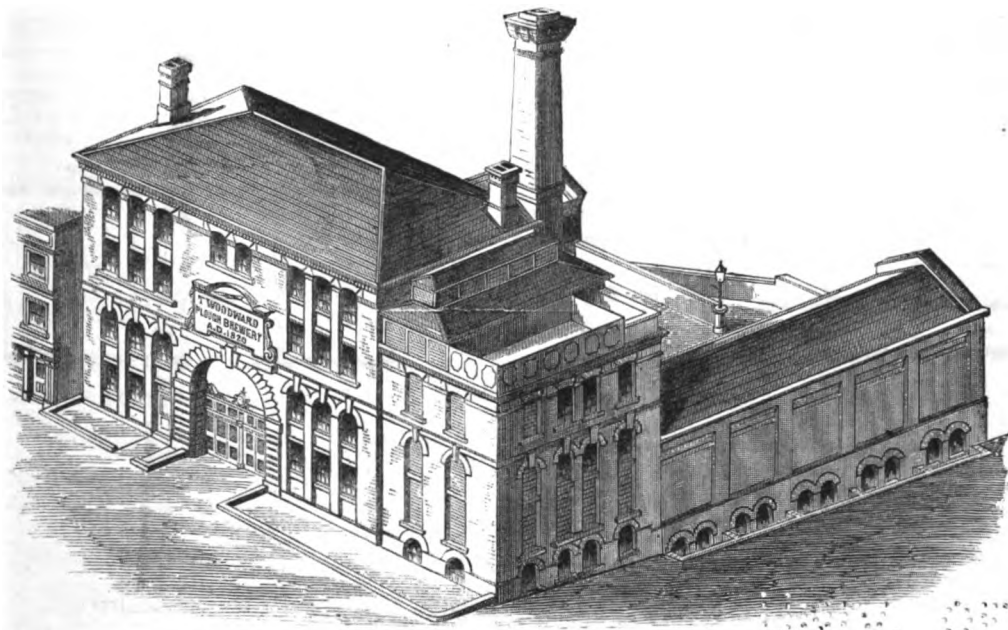


THE PLOUGH BREWERY.

PLANS.



LONGITUDINAL SECTION.



ISOMETRICAL VIEW.

# THE PLOUGH BREWERY.

WANDSWORTH ROAD.

70 v. 11  
ANBOMJAO



made the height half as much more as the breadth. Modern architects have varied these dimensions sometimes by squaring the breadth, and then making the diagonal thereof the measure of the height—sometimes more, but seldom less, than the full breadth itself. The second point is usefulness, which will consist in a sufficient number of rooms of all sorts, and in their apt coherence, so that all may appear airy and spiritous, and fit for the welcome of cheerful guests, about which the principal difficulty will be in contriving the lights and staircases. The former we must overcome by some open form of the fabric, or by terracing any storey which is in danger of darkness, or by perpendicular lights from the roof, of all others the most natural. The casting of the staircases is in itself no hard point, but only as they are incumbrances of room for other use.

The Italian architects distribute the kitchen, pantry, bakehouse, washing rooms, and even the buttry itself, under ground next above the foundation, or sometimes level with the floor of the cellar, raising the first ascent into the house fifteen feet or more, which, besides removing such annoyances out of sight, doth also, by elevation of the front, add majesty to the whole aspect. But, though all the other petty offices may well enough be so remote, yet, by the natural hospitality of England, the buttry must be more visible, and we need for our ranges a more spacious and luminous kitchen than the aforesaid compartment will bear, with a more competent nearness likewise to the dining rooms, or else, besides other inconveniences, some of the dishes may straggle by the way.

There are two extremes to be avoided in the *roof*—that it be not too heavy, or it will press too much on the underwork, nor too light, as it serves not only as a defence, but as a band or ligature, and therefore would require to be of a reasonable weight. Next, there must be care that the edifice be not pressed on one side more than the other. The Italians are precise in giving the roof a graceful slope, dividing the whole breadth into nine parts, whereof two serve for the elevation of the top from the lowest part; but in this point the quality of the region is considerable: those regions that fear the falling and lying of much snow ought to provide more inclining pences, and comeliness must yield to necessity.

## PART II.

Every man's proper mansion house and home being the theatre of his hospitality, the seat of self fruition, the comfortablest part of his own life, the noblest of his son's inheritance, a kind of private princedom—nay, to the possessors thereof, an epitome of the whole world—may well deserve by these attributes, according to the degree of the master, to be decently and delightfully adorned. For which ends there are two arts attending on Architecture, like two of her principal gentlewomen, to dress and trim their mistress—Picture and Sculpture. In the garnishing of fabrics sculpture must have the preeminence, as being of nearer affinity to architecture itself, and consequently the more natural and suitable ornament.

Touching *painting*, there occurs a very pertinent doubt, which has been passed over, not only by some men, but by some nations, namely, whether this ornament can well become the outside of houses. It is true a story well set out with a good hand will everywhere take a judicious eye; but withal, it is as true that various colours on the outwalls of buildings have always in them more delight than dignity, therefore no paintings ought to be admitted but in black and white, nor even in that kind (if the space be capable) under nine or ten feet high; which will require no ordinary artist, because the faults are more visible than in small designs. In unfigured paintings, the noblest is the imitation of marble, of architecture itself, as arches, friezes, columns, and the like.

For the inside, grotesque and antique work, such as satyrs and centaurs, ought to be confined to the ornament of friezes and borders. For storied works upon walls, our climate is too yielding and moist to allow of it. In disposing of pictures, no room should be furnished with too many, unless it is a gallery or repository for art. The best pieces ought to be placed, not where there is the least, but where there are fewest lights: therefore, not only rooms windowed on both ends, but with two or more windows on the same side, are enemies to art; as no painting can be seen in full perfection but (as all nature is illuminated) by a single light. Thirdly, that in the placing some care also be taken how the painter did stand in the working (which an intelligent eye will easily discover), as that posture is most natural; hence Italian pieces will appear best in a room where the windows are high, because they are commonly made to a descending light. Lastly, that they are properly bestowed for their quality as fitly for their grace; that is, the cheerfulest paintings in feasting and banqueting rooms, graver stories in galleries, landscapes in open terraces or summer houses.

*Sculpture* ought not to be too general and abundant, which would make a house look like a cabinet; and in this point moral philosophy, which tempereth fancies, is the superintendent of Art. That there be a due moderation of this ornament in the first approach; if the great door be arched, it is sufficient to have some brave head cut in fine stone or marble for the key of the arch, with two incumbent figures gracefully leaning upon it towards one another as if they meant to confer, with two great standing statues on each side of the approach; that the niches, if they contain figures of white stone or marble, be not coloured in their concavity too black, for our sight is not well contented with sudden departures from one extreme to another; that fine and delicate sculpture be helped with nearness, and gross with distance; that in placing standing figures we must set them in a posture somewhat bowing forward, because the visual beam of our eye extended to the head of the figure being longer than that to the foot, must necessarily make that part appear farther; so, to reduce it to an erect or upright position, a due allowance must be made.

There are also ornaments without the house, as gardens, fountains, groves, conservatories, of which a word or two may be said. There is a certain contrariety between building and gardening; for as fabrics should be regular, so gardens should be irregular, or at least cast into a very wild regularity. Groves and artificial devices under ground are of great expense and little dignity. In aviaries of wire to keep birds of all sorts, the Italians, though no wasteful nation, do in some places bestow vast expense, so that the chanterettes may live long before they know they are prisoners.

It is almost harder to be a good critic than a good architect, because the working part may be helped with deliberation, but the judging must flow from an extemporal habit. Therefore whoever examines any noble work ought first examine himself, whether the sight of many brave things before have not made him apt to think nothing good but that which is the best—for this humour is too sour. Next let him inform himself of the age of the work, and if he find the apparent decay to exceed the proportion of time, let him conclude that either the materials were too slight or the site was unfitted. If the house be found to bear its years well (always a token of a sound constitution), let him suddenly run backwards from the ornaments to the more essential members, till at last he is able to form this conclusion, that the work is commodious, firm, and delightful, which are the three capital conditions required in good buildings by all authors ancient and modern.

## REVIEW.

HINTS ON HOUSEHOLD TASTE IN FURNITURE, UPHOLSTERY, AND OTHER DETAILS. By CHARLES L. EASTLAKE, Architect. London, 1868. Longmans, Green, and Co.

'It is unfortunate for the interests of Art at the present time, that in civilized countries it has come to be regarded as the result of theories utterly remote from the question of general taste, totally distinct from those principles which influence manufacture and structural science, and independent of any standard of excellence, which we might expect to be derived from common sense.' Such is the language in which Mr. Eastlake introduces to our notice his 'Hints on Household Taste,' and very accurately does it describe the popular belief. Fortunately the number of those who hold sounder and more correct views is on the increase; indeed, the appearance of such a work as this, and the success with which it has already met, are in themselves evidences of the spread of more enlightened opinion.

In the opening pages of his work Mr. Eastlake deplors the prevalence of ignorance, or erroneous ideas, as to the principles of art and design; but the general indifference on these points is far more lamentable. Rarely, if ever, do people exercise their own judgment at all. We profess indeed, as Mr. Eastlake sarcastically observes, 'to know what we like,' but we seldom really endeavour to obtain it. Sometimes we enact the farce of pretending to make our own selection; that is, we visit the shops or establishments of manufacturers, and purchase what we are told is the 'right' or the 'fashionable' thing. But this cannot be correctly termed an individual choice. It must be admitted, however, that there are many difficulties in the way of obtaining what is correct and good in domestic furniture. The manufacturers who make it their specialty are limited in number and not very generally known. The supply of such articles is therefore small, and the price consequently greater than it should be, and nothing but an increased demand can afford the requisite remedy. Nevertheless, many of the cheapest objects of domestic use are, as Mr. Eastlake points out, amongst the best in construction and design.

All the principles of artistic design on which our author enlarges may be summed up into two: 1st. That every article should be thoroughly adapted to the use which it is intended to fulfil; and 2nd, that it should be so constructed as to bring out the proper characteristics of the material of which it is made. Very little reflection will suffice to prove to us how seldom we find these conditions really aimed at or attained: both are sacrificed for the sake of cheapness, or a pretentious and vicious style of ornamentation. Thus we have, for instance, uncomfortable and brittle chairs, tables, sofas, &c., and wall-papers, carpets, &c., which are unpleasant to the eye, and indicating in their designs the effects of aerial perspective, instead of the flat surfaces which they ought to present.

The first point of detail into which Mr. Eastlake enters is that of 'Street Architecture;' but we need not dwell here, as it is almost hopeless to expect any reform on this subject for some time to come. How bad the state of affairs is, we most of us practically know. We all remember the wail which Mr. Carlyle, in his 'Niagara' essay, raised about the badness of London house building, and Mr. Eastlake enlarges on the same theme; but as long as the present conditions of leasehold tenure exist, it is not to be supposed that the building speculator will do other than consult what he believes to be his own interests. If, unfortunately, we have little influence over the construction of the outsides of our homes, we have at any rate more control over their interiors. And here we shall find the 'Hints on Household Taste' an excellent vade mecum to assist us in our efforts. We are shown the true principles which should guide us in the selection of carpets and papers, decorations and furnishings of all sorts and degrees, with illustrations of several designs and specimens of existing productions. We must confess ourselves somewhat disappointed, however, with Mr. Eastlake's observations about paper-hangings. His views are sufficiently correct, and the designs which he gives are in accordance with them, though not very remarkable; one indeed—a green with gold pattern—is positively bad in colour, if it be fair to judge from only a book sample. But it is to be wished that Mr. Eastlake had set his face against the taste for white papers so very prevalent. White paper (except in a large room where distance from the lights gives an acquired shade) always has the effect of depriving even our fairest friends of any beauty of colour or complexion whatsoever; while it also makes the furniture stand out in tone with a harsh silhouette, and thus causes the least

interesting part of the room to attract most attention from the eye. Delicate neutral tones will produce a far more harmonious effect.

One point on which Mr. Eastlake is particularly emphatic is the condemnation of all kinds of shams and deceits, imitation woods, marbles, &c. Leaving morality out of the question (though in truth imitations very rarely do deceive), we shall nearly always find that an article which is not genuine fails to give us satisfaction. Doors painted in imitation of wood never look the real thing, and, moreover, have a 'cheap' appearance; whilst if they are painted in flatted colour, they look much pleasanter, and also more costly. We do not, however, carry our objections so far as to disapprove of articles the surfaces of which are at any rate real, such as plated goods, gildings, or veneered furniture, though the latter is never very good in construction, the veneer being apt to split and disclose the inner nature of the object. Still we ought not to resort to any of these things except when considerations of wear and tear, liability to accident, or expense, are paramount.

It is not proposed to follow Mr. Eastlake into all the details on which he discourses. All who are interested in the subject ought to read the work for themselves. If his observations are not very deep, they are perhaps all the more practical. Certainly they will well repay perusal, accompanied as they are by references to, and illustrations of, what is good in ancient art. And while noting the value of excellent examples, let us endorse the eulogium passed on the authorities at South Kensington for the interesting and instructive collection which they have formed, illustrating as it does the connected history of art and manufacture, and forming one of our most valuable art treasures.

One point on which we are disposed to differ somewhat from Mr. Eastlake's conclusions is with respect to uniformity of style. Not that we wish to see every room in a house different, but a boudoir ought not to resemble in character a dining room or a study. In fact, the different uses to which rooms are to be put necessarily implies a difference of aspect. In addition, therefore, to a variation of material, we also require some modification in design.

Now all the illustrations of furniture of his own designing which our author gives are more or less alike, and indeed, to our thinking, are in some instances too simple and archaic. We cannot expect to revert to the exact types and forms of even the best periods of artistic taste, nor would any such course be desirable; but what we may expect is, that whilst, in the construction of domestic objects, the comforts and requirements of modern life are fully consulted, we may also have a due attention to correctness of principle and the realization of the beautiful.

Artists, architects, and in a word all students of art, are fully alive to the importance of the subject under our consideration; for they know how essential to the just comprehension of any work, however great, is the constant exercise of the faculties by which alone it can be judged. Yet how can we expect the public to appreciate the merits of a fine building or a beautiful picture when we know that their daily surroundings are replete with so much that is false and hideous? But Mr. Eastlake's remarks on this point are so good that we must quote them verbatim:—'The most formidable obstacle which lies in the way of any attempt to reform the arts of design in this country is, perhaps, the indifference with which people of even reputed taste are accustomed to regard the products of common industry. There is many a connoisseur of pictures and of sculpture, many a virtuoso now haunting auctions and curiosity shops with a view to gratify his particular hobby, who would stare if he were asked to pass his opinion on the merits of a door-knocker or set of fire-irons. By such people—and they represent a very numerous class—art can only be valued as an end in itself, and not as the means to an end. . . . What should we think of a musical amateur who, while fully competent to appreciate the performance of a Joachim, could listen with indifference to the machine-made melodies of a grinding organ, or hear with approval a pianoforte played out of time and tune? Yet this is exactly what people do who applaud the works of Leighton and Millais at the Royal Academy Exhibition, and go straightway off to the shops to buy and fill their houses with articles of manufacture which are distinguished not only by an absence of real beauty, but by the presence of much definite ugliness.'

Let us hope that such a condition of things will no longer prevail, and trust that the tendency to improvement which is now manifest is the dawn of a brighter day in the history of the manufactures of this country: it is the public alone that can make it so. Our artists and architects are quite capable of guiding and directing any movement of this sort, and our artisans and manufacturers are fully competent to the carrying out of their designs. All that is wanted is an increased popular demand. And to those who may be interested in this subject, we can heartily commend as a sound and practical guide in their efforts Mr. Eastlake's 'Hints on Household Taste.'

**Dover Priory Estate Competition.**—The first premium of 50 guineas has been awarded to Mr. F. A. Klein, of 110 Cannon Street, for design 'London No. 1,' the second premium of 20 guineas to Mr. A. G. Hennell, of 22 Southampton Buildings, Chancery Lane, the author of design '£ s. d.' Seventy-five plans were sent in, which were submitted to Mr. Clutton, of Whitehall Place, by whom the award was made.

## THE IRISH RAILWAY REPORT.

IT is always matter for regret when an important subject is approached from the wrong point of view. The treatment is sure to be inadequate; and not only so, but efficient treatment is, by this means, indefinitely postponed.

Such, it appears to us, is the case with Irish railways. The series of blunders, of quarrels, and of swindles which has depreciated the whole of the grand net of railway communication through the United Kingdom by some thirty-three per cent. of its natural value has raised the question, in the minds of many, as to whether the ownership and superintendence of the State might not be advantageously substituted for the caprices of conflicting boards of directors. The present Government, when in office before, so far evinced a disposition to assume the responsibility of a general control of the traffic arrangements of the country as to appoint, with some degree of flourish, a Commission to investigate the subject. The weak and inefficient Report of that Commission was so destitute of weight as to swamp the matter for the time.

The general subject of railway management being in this position, there can be no great want of judgment in directing especial attention to the question of Irish railways, which have been recently the subject of special official investigation. The amelioration of the condition of that island is the central difficulty of the Imperial policy; an inquiry into the condition of Irish railway enterprise must thus be regarded as eminently desirable.

By June 30, 1867, rather more than twenty-six and a half millions sterling had been expended on 1,900 miles of Irish railways, at the rate of 14,000*l.* per mile, being exactly a third of the cost per mile of the English lines. The gross receipts on these railways amounted to 1,870,000*l.* The working expenses were 52 per cent. on the receipts, leaving a net income of 890,000*l.*, which was an increase of 32,000*l.* for the year. The gross income thus amounted to 7 per cent. on the paid-up capital, while that of the English and Scottish railways may be approximately stated at a little over and a little under 8 per cent. This return was derived, in almost equal proportions, from passengers, and from goods, minerals, and live stock.

Ireland is a sparsely peopled agricultural country, with a population of 171 persons to the square mile. That population decreased from 8,190,000 in 1841 to 5,557,000 in 1867. The mineral traffic of Ireland amounted, in 1866, to only 123,000 tons of coal and 25,000 tons of iron. While, then, there is the grand advantage possessed by the railways of Ireland of economical construction, it is apparent that the case is not one in which an unbounded impulse can be given to the development of traffic by the mere expedient of lowering the fares. With the general increase of Irish prosperity, the net revenue of its cheaply constructed railways will ultimately sympathise; but the means of galvanising that prosperity, by an inordinately low rate of conveyance, do not exist in a country of that description, in the same way that they are to be found in one which is more industrial and more densely populated.

It therefore seems singularly ill-judged that the experience of a country of which the condition is as opposite as can well be found to that of Ireland, should have been indicated to the Commissioners as the basis of their comparisons. Belgium has a population of nearly three times the density of that of Ireland, being 442 to the mile. The area of the former country is only about a third of that of the latter. The proportion of length of line to population is nearly alike in the two countries, being a mile to every 2,856 persons in Belgium, and a mile to every 2,893 persons in Ireland. The cost of those of the Belgian lines which were constructed at the expense of the State may be taken at about 20,000*l.* per mile. But the distribution of these lines is not in proportion to the relative area of the countries. The State railways run, for the most part, through a level country, connecting busy and populous towns, the condition being thus that which of all is most favourable for stimulating traffic by reducing fares.

In the southern part of Belgium, where the towns are fewer, the people more sparse, and the country more expensive for the operations of the engineer, the State has conceded the railway to a company which has chiefly been formed by means of English capital. It is this part of Belgium which alone can in any way be compared to Ireland, and in this part the means of comparison fail.

The question of the mode of dealing with Irish railways must be investigated on its own merits alone. The facts which will be useful for comparison are those of similar districts, not those collected under opposite conditions, with no possible connection except in the fact of State management, and reduction of fares to a level that private companies cannot afford, even though, in the long run, such reduction may prove to pay. Thus the first portion of the Treasury minute of October, 1867, which directs the Commissioners to inquire into the result of assimilating the principles of the charges on which fares on the Irish lines should be levied to those adopted in Belgium, is simply bewildering and delusive.

The two other points reported on by the Commission are, the saving to be effected by the concentration of establishments under one or more administrative departments, and the diminution of charge to be effected by giving the guarantee of Government to the debenture capital. The saving under the former head is estimated at 32,000*l.* per annum; that under the latter at 88,000*l.* per annum. It would be difficult to pay a higher compliment to the character of the management of the Irish lines than is implied by these two modest sums.

If on an expenditure of 982,000*l.* per annum, incurred by the officers of thirty-nine distinct companies, large and small, it is only considered possible that a saving of some three and a quarter per cent. is to be made by concentration of management (bearing in mind that we have on one hand actual, and on the other only estimated, outlay), the managers of the Irish railways deserve unusual respect and commendation. With a natural distribution of the island into three great railway alliances—the Great Southern and Western, the Midland Great Western, and the Ulster Companies—buying, leasing, or otherwise working all the minor lines, it is probable that a larger economy would be effected without risk.

Again, with regard to the debenture capital. It has been pointed out with unanswerable force, that union, or at least alliance, between the various lines, would suffice to place this portion of their capital on a sound and satisfactory basis. So valuable is the property of the railway companies taken in block, that it may be doubted whether Government could borrow on better terms than a syndicate of the various lines would command.

The comparison of the Irish and the Belgian lines is a mere experiment upon the patience, or the ignorance, of the public. When Irish industry emulates Belgian industry; when Limerick and Cork display to the visitor in their streets the decent municipal care and thrift of the 'senate and people of Ghent;' when mining and manufactures divide the Irish soil with pasturage; and when the neglected and ill-saved crops of oats, that form so much of the arable produce of Ireland, are replaced by the carefully weeded and tended harvests of the Belgian fields, it may be instructive to compare the railway statistics of the two countries. At present, such a comparison, unless made to point a contrast, is simply ridiculous. The other conclusions of the Report are unexpectedly bare and inefficient.

Into the larger question, at which the late Report only nibbles, it is not our present intention to enter. The case of the Irish railways is only a portion of the general question of the best method of providing for the internal communication of the country. The great secret of English non-success in Irish matters is this:—It is our habit to frame rules inapplicable to the condition of the country or to the genius of the people, and then, as these rules lead to trouble, to make continual exceptions. Every Irish evil has thus been intensely aggravated. The opposite course is the only remedy—to make provisions adapted to the nature of the country, and to the habits and genius of the people, and to allow *no exception whatever* to rules thus made. If we leave English railways alone, and leave Scotch railways alone, and take Irish railways on our back because they are earning three-quarters per cent. less than the Scotch lines, we shall find that such a proceeding is a fatal precedent.

If it be (we do not deny the possibility) decided upon as a matter of Imperial importance to aid the Irish railways, this may be done at once in a far safer and in a far more complete manner than by making experiments on Government amalgamation. Power and facility should be given to the companies to amalgamate among themselves; and as inducement and encouragement to do so, let the aid of Government be frankly rendered to the completion of the Irish system of railways by cheap light branches. The expenditure of some six millions sterling, in addition to the twenty-six or twenty-seven millions already spent, would be enough to nearly double the actual length of available railway, and to bring the wilder and more inaccessible districts into organic connection with the capital and the ports. For Government to aid the great companies in thus augmenting the bases of their traffic would be (if jobbery be excluded) at once a safe and a statesmanlike measure.

It is not by reduction of fares to an extent without precedent under circumstances bearing the least resemblance to those of the Irish railways, that any healthy 'impetus to the intercommunication of the inhabitants and the moving of goods from place to place' can arise. By pushing light branches into the rural districts, and avoiding the expense of cartage, of time spent in going to and fro, and of re-loading, a stimulus will be given to the existing traffic, which may be proved even to compare with that which the original introduction of locomotive railways gave to the commerce of the country at the period of their formation. Not for Irish railways alone, but for all the railways of Europe, here is the true mine to be remuneratively worked. The man who does this for Ireland will deserve to be named with the same respect as that which attaches to the memory of William Dargan or to that of George and Robert Stephenson.

### ACCIDENTS TO BUILDINGS.

It has seldom happened that so many accidents to buildings have been crowded into a short space of time as have occurred within the last few weeks. Our column of General News has almost resembled the shipping intelligence of a daily paper after a period of prolonged storms; and if serious accidents have been so numerous, it is perfectly certain that the number of lesser mishaps has been proportionately large. Though this has been the case, there has existed no adequate disturbance of nature to quote as its cause. No earthquake has devastated our towns; and if high winds have raged and wet weather has prevailed, it seems hard that buildings put up as a protection against wind and weather should not be able to withstand a moderate attack of either. Here, however, lies the solution of the problem. There can be no doubt that many buildings now

erected are not sufficiently strong, or put together with sufficient care and skill, or built of good enough material to be safe or suitable for occupation.

Even within the area of the metropolis, where the operation of the Metropolitan Building Act may be supposed to check, to some extent, the practice of using inferior materials, but too much use is made of bricks which are only dried dirt, and mortar which is little better than moistened mud. In country towns, where the spirit of cutting competition has risen high, and has called forth no efficient official supervision, we have reason to believe that these evils exist to a greater degree than in London.

There can be no doubt that most of this inferior building work done in dwelling houses of moderate or small size, and that the habits of bad building which exist almost all take their rise from bad house-building. Any remedy that can be brought to bear upon the construction of our dwellings will raise the quality of such builders' work as is executed at cheap rates to a great extent.

This remedy, we take it, lies mainly in the hands of the public themselves. As long as a speculating builder finds that tenants care for nothing save rooms of a certain size, well lighted, conveniently put together, rather showy, and at a low rental, so long will he confine himself to the supply of these called-for essentials, and these only. Why should he spend his money on rendering his house durable, strong, healthy, or comfortable, since tenants will just as readily take a dwelling that has no one of the elements of comfort, health, or safety about it, as one that is in these respects well built, if only the first be as roomy or as attractive looking as the other?

We are endeavouring to diffuse sound information on this subject in our pages, and shall hail it as a great advance if the public begin to call, in ever so small a degree, for improvements in the construction of the houses they consent to dwell in.

There are other points, however, in which the present practice of building is at fault. Competition is carried to excess, and prices, as a consequence, are often too low to yield any return upon good work. Builders' estimates are frequently made on the most carelessly prepared bills of quantities, and with a haste that renders careful consideration out of the question. The short terms for leasing building land, the usual arrangements for advancing money on leasehold buildings in progress, and the leniency of the Bankruptcy Court, all combine to promote bad workmanship, by causing its consequences to fall on the head of some one other than the real culprit.

In all these respects a reform is needed; and we should be glad to know that the general body of builders, who include a number of the best men of business and most honest traders in England, were disposed to promote, as they only effectually can, some movement for raising the general standard of work and materials throughout Great Britain, and thereby preventing the recurrence of such accidents as we referred to in the opening sentences of this article.

## PRACTICAL COMPENSATION.

### THE LIVERPOOL CORPORATION WATERWORKS.

THE Corporation of Liverpool are extending their works at Rivington Pike by constructing a new reservoir from the designs of the late Thomas Duncan, Esq., C.E. They have just received the award of the umpire (Mr. Pownall) in two of the compensation cases; and as illustrating the wide difference between the ideas of the claimants and the actual payment awarded, we give a summary of each case.

**CORPORATION v. PARK.**—Awards of Witnesses for the Claimant:—Mr. Thomas Lever Rushton, 22,055*l.* 14*s.* 3*d.*; Mr. Edmund Ashworth, 35,000*l.*; Mr. James Eden, 35,000*l.*; Mr. Edward Thomas Woods, 26,875*l.*; Mr. Joseph Clayton, 24,311*l.*; Mr. Thomas Statter, 26,872*l.* 16*s.*; Mr. Elias Dorning, 27,570*l.* 15*s.*, assuming, as was contended by the claimant, that the water could be used for washing purposes; Mr. Edward Garlick, 26,075*l.*; Mr. Edward Nicholson, 25,000*l.*; Mr. Joseph Brierley, 21,812*l.* 6*s.* 8*d.*; Mr. Samuel Collet Homersham, 31,050*l.*

Awards of Witnesses for the Corporation:—Mr. Joseph Jackson, 2,883*l.*; Mr. Richard Radcliffe, 2,887*l.* 10*s.*; Mr. George Hunt, 3,326*l.* 8*s.*; Mr. J. G. Blackburne, 3,750*l.*

Amount of award, 5,882*l.*

**CORPORATION v. RODGETT.**—Awards of Witnesses for the Claimant:—Mr. Thomas Statter, 15,892*l.*; Mr. Elias Dorning, 10,410*l.* 13*s.* 6*d.*; Mr. Joseph Brierley, 14,557*l.*; Mr. Edward Garlick, 12,000*l.*; Mr. Edward Thos. Wood, 12,000*l.*; Mr. Edward Nicholson, 15,624*l.*; Mr. Joseph Clayton, 16,531*l.* 17*s.* 10*d.*; Mr. Samuel Collet Homersham, 4,740*l.*, as the cost of replacing water power by steam power only, in addition to the works being damaged to the extent of two-thirds of their value, which the witness does not estimate in money, but which would be at least 7,000*l.*; Mr. Thomas Lever Rushton, 12,480*l.*

Awards of Witnesses for the Corporation:—Mr. Joseph Jackson, 3,072*l.*; Mr. Geo. Hunt, 2,830*l.* 10*s.*; Mr. Richard Radcliffe, 2,735*l.*; Mr. John G. Blackburne, 3,038*l.*

Amount of award, 3,936*l.*

All the other cases (14 in number) have been satisfactorily arranged by negotiation. The two disputed claims were merely for use of water.

## LEGAL.

**Extensive Robbery, and Serious Charge of Receiving by a Large Contractor.**

On Monday, at the Marylebone Police Court, Robert Manning, aged 25, residing in Stainsbury Street, Bethnal Green, was charged with stealing, during the past two months, from the Kentish Town Wharf, between 30,000 and 40,000 of bricks, the property of Mr. William Henshaw, in the parish of St. Pancras. Thomas Croft, aged 53, of Burleigh Road, Kentish Town, contractor on a very extensive scale, was charged with receiving the same, well knowing them to be stolen.

Mr. George Lewis, jun., prosecuted, and Mr. F. H. Lewis (barrister) defended Crofts.

Mr. George Lewis, having opened his case, called Mr. William Henshaw, builder, carrying on business at 13 and 15 Wharves, City Road Basin, who said he had a contract from the parish of St. Pancras for the erection of an infirmary at Highgate, and it was necessary to have a large number of bricks supplied. For this purpose he had contracted with Messrs. D. & C. Rutter and Mr. Wakeley, brickmakers, as well as Messrs. Pickett & Sharpe, to supply him. The bricks were to be delivered at the Kentish Town Wharf. In October last (said witness) I entered into a contract with Messrs. Pickett & Sharpe for carting bricks to Highgate, where the Infirmary is building. All the bricks that were to be delivered came to the Kentish Town Wharf. The prisoner Manning had been employed by me for twelve months past to tally the bricks as they were loaded into the carts. His duty was to see the bricks carted, and to give the carman, after entering the number in a book, a ticket. The ticket had the counterfoil on it. After delivering the bricks the ticket would be signed by the gatekeeper, and the counterfoil receipted and brought back to the master. I do not know the prisoner Croft. I will not swear that he was not engaged as sub-contractor, but I have seen bricks in Croft's carts. He had no knowledge of my arrangements with Messrs. Pickett & Sharpe. Manning had no orders to send bricks anywhere but to my own jobs, other than at Highgate or Crouch End. The lowest price I pay to Messrs. Rutter for bricks is 28s. 6d. per 1,000. The bricks are branded with a 'crown and a figure.' On Saturday, from information I received, I caused Manning to be taken into custody. I had given my managing foreman notice to keep a sharp look-out.

Ebenezer Lawrence said: I am manager to Mr. Henshaw. On Saturday I had some conversation with the prisoner Manning, and enquired of him when he came to the office if he had brought his tally books. He said he had not. I asked why he had not brought them. He said he did not always bring them on a Saturday. He was asked who was the last man he loaded from the barge, and the names of the carmen. Manning mentioned the names of three men, but I did not hear the name that I enquired for, and asked what time he loaded Davis's cart. He said, as near as he remembered, about half-past three in the afternoon. Then he said he went up to Highgate to get his money, but not getting it, he went back to the wharf, and loaded several carts ready for starting on Monday morning. I asked him whether he gave the carters their tickets. He said he gave no tickets to anyone after his return from the Infirmary at Highgate. I said, 'Have you never given tickets to anyone only upon the wharf to carmen?' He said 'No.' I said, 'Did you not give one that morning outside a public-house opposite the wharf?' Manning then said it was no use mincing the matter to me. I told him that he must be aware that the firm had lost a large quantity of bricks, and we knew where the property had gone to as well as he did. When he found I knew something of them, he said he would speak the whole truth. He said Mr. Croft had had the bricks. I asked him where they had gone to, and he said the larger portion to Hornsey Rise, where Mr. Croft is building, and a quantity to Highgate Cemetery, where Mr. Croft has a job. He also said there was a stack of bricks stacked up in the prisoner Croft's yard, on the wharf. The bricks ought never to have been carried there. Manning said he saw the bricks stacked on Croft's wharf. I asked Manning what consideration he got for the bricks, and his answer was, 'A little beer.' I said, 'Do you mean to say you were such a fool as to sell yourself and your master for a few pints of beer?' He then said he had license from Mr. Croft to get as much beer as he liked from the public-house opposite. I said 'I cannot believe that you did it for beer only.' He again said he would tell me the truth. Manning then said that Croft sent his foreman to him to ask him to let him have 500 bricks. Manning said he replied to him, 'What do you mean? I cannot sell drink.' He then said Mr. Croft's foreman took him to a public-house and gave him something to drink, after which he let him have the bricks and he would give him 5s. a thousand. He let him have them. After this he said Croft arranged to pay him 4s. a thousand, and did pay him himself.

Mr. George Lewis: I wish to draw your worship's attention that my client pays 28s. 6d. a thousand for bricks, and 5s. 6d. for cartage, which makes in all 34s.

Witness continued: I asked Manning how long he had been at this game, and he said quite two months. And what number he had ordered to be taken to Hornsey? As near as he could tell about 20,000. How many to the Highgate Cemetery—the two places where Croft had jobs? Manning said about 5,000. How many stacked at Croft's wharf? 12,000 or 13,000. He said he was convinced that there were these quantities. He was then given into custody.

Mr. F. H. Lewis and the prisoner Manning declined to ask these witnesses any questions.

George Wise, general foreman to prosecutor, said: I went late on Saturday night to Kentish Town Wharf; I went to a place near some stables belonging to Mr. Croft, and found a stack of bricks of Wakeley's and Rutter's make. I counted them, and found 6,250. Before going there I had been to Highgate Cemetery, and whilst there saw one of Croft's carmen, named Davis, come up with a load of bricks. I believe Croft has a sub-contract there to supply another contract. I looked at the bricks, and found Rutter's mark on them. I looked further, and saw a stack in the Cemetery bearing Rutter's and Wakeley's marks on them.

Cross-examined: I do not know whether Croft is a large contractor for bricks. Do not know that he has some thousands of bricks from Messrs. Rutter and Messrs. Wakeley every week. Do not know whether Rutter supplies him.

Thomas Pound, a carman in the service of the prisoner Croft: On Friday last I took a load of bricks to Hornsey Rise, from Kentish Town Wharf, by order of Croft's foreman. I did not see where they were loaded from, as they were loaded up on the over night. I took them to the front of Croft's buildings, and set them down there. On Saturday there was a cart already laden, and I took it to Highgate Cemetery. Three more carts were loaded up from the stack by the stable on the wharf, and they were taken to Highgate Cemetery by order of the foreman of Mr. Croft. Mr. Croft was there when I went there at dinner time. It was the third load when I saw Croft's foreman. Croft gave me no instructions. He saw me leave the premises. Croft has not given me orders at other times. I do not know that he has been present when orders have been given to me.

In reply to Mr. D'Eyncourt, witness said: Mr. Croft's name was on the carts. They were his own carts and horses. Had taken bricks to Mr. Henshaw's place. Sometimes been up to Highgate for Mr. Croft. Could not say how many times.

M. F. H. Lewis said: My client has about eighty carts, and it was impossible for him or his men to say where they could have been at stated times, as the carts were all over London.

The Witness re-called said: I asked Manning where he had the load of peculiar bricks from and where taken to. He said from the wharf, and up to Croft's place at Hornsey. I went to Hornsey, and there found in a stack a number of bricks. They were Wakeley's make.

Mr. Lewis said he must ask for a remand.

Both prisoners were remanded, and Mr. D'Eyncourt refused to accept bail.

A witness was here brought forward, who said that he could prove that some red bricks found in front of Mr. Croft's building belonged to the prosecutor.

The case was remanded.



## THE DECAY OF STONE IN PUBLIC BUILDINGS.

For many years I have looked with grief upon the decay of stone in several of our large buildings, especially in such noble buildings as the Houses of Parliament, and many others which are ornaments to our metropolis. It seems a pity that after so much pains, anxiety, and expense have been bestowed upon these, they should, in so short a space of time, crumble to decay—so much so that in some instances the place that now knows them will soon know them no more, except as a mass of ruins.

Now, as this decay must result from some cause, it is necessary that the exact cause be arrived at. It has been said on good authority, and by some of the greatest men of the present day, that it is the smoke of London acting on the stone which causes it to decay.

The principal object of this communication will be to show that the decay of stone does not result from this cause; and in order to substantiate this, I will mention a few plain facts which will tend to show that the smoke does not act upon the stone in sufficient force to decay it.

I have been to a great many quarries in various parts of Great Britain, and therefore have had the opportunity of noticing the stone on the spot from where it is obtained, and I find there is a certain portion of stone that will perish in its own native air and on its own soil, away from all smoke and soot: for instance, I have seen the Cheshire, Yorkshire, Lancashire, and Derbyshire stone, also the Glasgow white stone and granites at various quarries, all perish in their own native air, and at most of these places there has been no smoke or soot to act upon them. Again, there was a large building erected in the West of London, and one of the late eminent judges of stone was appointed to examine the quality of the stone, and I think he was also appointed at the Houses of Parliament. Now, after this gentleman had passed the stone for the West End building, a great quantity of these stones perished before the roof was on. This must at once prove that it is not the soot that causes the stone to decay in our public buildings, but the inferior quality of the stone that was used.

If the above proofs are not sufficiently convincing, allow me to mention one or two still more so. If we will but take the pains to look at some of our buildings, we find in many instances a sound stone adjoining a decayed one. How can this be accounted for? If the smoke had such an effect upon these stones that are decayed, why did it not act in the same manner upon the adjoining ones that are sound? Thus, we again see that an inferior quality has been mixed with a good.

I have myself removed the accumulated soot from the face of stone, and on examining found it to be quite sound and perfect. These simple facts ought to convince any practical man, and also our geologists, that the smoke is not the cause of the stone decaying.

The stone used in the largest quantity in London is Portland. I have walked through the quarries and examined the stone at this place, and found it to perish there in large quantities (remember this stone has not been subjected to the smoke). This stone is brought to London and used in the construction of buildings, and as may be expected, before the roof is fixed will be found to be in an advanced state of decay; and not only before the roof is fixed, but even after the stone has been fixed only two or three months, and then our great and scientific men say it is the smoke acting upon the stone causes the decay, whereas if proper judgment had been used and the stone of the right quality, the smoke would have had little or no effect upon it.

A great quantity of the Portland stone used in London perishes far



sooner than the Bath stone. As a proof of this I will refer to the entrance gateways to the Park at Hyde Park Corner; these are of Portland stone, and nearly all this stone has perished, and is still perishing as fast as time will permit. The adjoining building to these gateways, Apsley House, is of Bath stone, and the stone of this building stands far better than the Portland at the gateways. The exterior of the Grosvenor Hotel is mostly of Bath stone, and has been erected some seven or eight years, and not a single piece of this stone is decayed, and why? because it was carefully selected: if this had been of a bad quality, it would have perished before now; and thus while this Bath stone building stands, some Portland ones have perished. The stone, then, that decays is simply an inferior quality, which, if placed in any building, whether in town or country, will decay. For instance, many large buildings in the city of Oxford were erected out of the stone obtained in the neighbourhood, without any regard being paid to the quality of that stone; and the result was, as might have been expected, in a few years these buildings went to decay. Had this stone been of a good quality, it would have remained sound and perfect; in fact, some stone of good quality, obtained from the same neighbourhood, was used the same time as the above, and is as perfect now as when used. The above example must not be confined to Oxford only, for it is the same with our noble Houses of Parliament. It appears to me that two qualities of stone have been used in this building, a good and bad. Here, again, the fault is want of judgment in selecting the stone; because, if stone be carefully selected, I am confident there will not be that decay there now is.

When we take into consideration the various kinds of stone that are sent to London, all differing in quality, it becomes even more clear that careful judgment ought to be exercised in the selection of the stone. There are six distinct sorts obtained from Portland, five from Bath, and fifteen from Yorkshire and Derbyshire. In the neighbourhood of Penryn there are about sixty or seventy granite quarries, the granite differing in a great many of them both in colour and quality.

We also obtain eight different sorts of granite from Aberdeen and its neighbourhood, three from Peterhead, two from Mull, five from Dalbeattie, and three from the North of Ireland.

The judgment which ought to be exercised in the selection of the proper quality has not always been correct; for instance, the before-mentioned judge of stone condemned two barge loads of Portland stone at some works of a well known contractor. I stated at the time that this stone was good and would stand the weather, and the statement proved true, for the whole of these two barge loads of stone were afterwards used at the same works, and up to the present time not a single stone has perished.

It has also been mentioned that the perishing of the granite at Waterloo Bridge, passing under the same process of decay as other stone, is caused by the smoke. This is not the cause, for it is well known that the granite that was brought to London at the time Waterloo Bridge was being built was of an inferior quality compared to the granite that is used at the present day. I have seen granite almost as soft as grit stone, and possessing all the elements of decay. I have also seen granite in the neighbourhood of Aberdeen decayed in the inside of a new building where it has been screened from the smoke and weather.

Thus I have endeavoured to show, in the first place, it is not the soot that decays our stone; and, secondly, this stone that decays is of an inferior quality.

It must not be supposed from the above that there are no buildings in London of good stone, as several are now passing before my mind; but time will not permit me to offer any comment on these.

WILLIAM CROSS,  
Manager of Prince Consort Memorial, Hyde Park.

THE RAMSGATE SURVEYORSHIP.

SIR,—An instructive episode of public Boards' dealings with their surveyors has lately occurred here, and the attention of the profession may profitably be called to it. I shall state the bare facts of this case as appearing in the local newspapers, and refrain from any comment thereon.

'WANTED AN ARCHITECT'

was the heading of an advertisement in the *Times* (it did not appear in any professional paper) last month, 'to act as Surveyor and Inspector of Nuisances to the Local Board of Ramsgate. Salary 150*l*. Whole time to be given to the duties of the office.'

Here was a noble opening! a prize! At least such appears to have been the opinion of about one hundred members of the profession, from whom (I quote the *Kent Coast Times*) applications for the office had been sent in.

But the most curious part of the matter was that the advertisement in question started no one more than it did Mr. G. M. Hinds, the resident surveyor, who is, and has been in office since January, 1854, up to which date the late Mr. Wildish had been surveyor at a salary of 70*l*.; Mr. Hinds then undertook the duties at a salary of 70*l*. (nominal), but 40*l*. per annum was to go to Mr. Wildish as a superannuation during his lifetime, so that the remuneration (I cannot say 'salary') of the surveyor was 30*l*. only, and this continued for four and a half years, when, on the death of Mr. Wildish, Mr. Hinds, so to speak, succeeded to the full salary of 70*l*.; but the Town Commissioners, fearful lest the sudden accession of fortune might turn his brain, kindly and promptly mitigated the danger by reducing the salary to 60*l*.

In July 1867 the Town Commissioners were superseded by the Local Board, who raised the salary to 150*l*., which was to include all and all manner of work and services required. 'For this salary,' says Mr. Hinds, in a letter appearing in the *Thanet Guardian* of Dec. 19, 1868, 'I have been greatly indebted to my son, who has assisted me, for it would have been utterly impossible for any one person to have done all the work required.'

But at the early part of last month some members of the Board, not feeling quite satisfied with the attendance or attention of the surveyor, acting under the dictum of their chairman, that by 11 & 12 Vic. c. 63, s. 37 (The Public Health Act) the Surveyor of the Board is removable at pleasure, i.e. at a moment's warning, and without any formal notice, issued the advertisement above referred to; and at the meeting of the Board in our Town Hall on the 22nd ultimo, the Committee, whose province it was to consider the applications for office, reported that they recommended the following candidates, viz.:—Henry G. B. Hayward, Thomas N. Laslett, Cecil George Norman, Edward Crosse, Thomas G. Bell.' These gentlemen, says the *Kent Coast Times* of the 24th ult., 'had been requested to attend, and many of them had come from long distances.'

Before these gentlemen were admitted to the august presence of the Board a general wrangle appears to have taken place in the Council chamber, the Chairman asserting that as a Local Board 'they had no power to give notice to their Surveyor,' but 'having elected his successor, all we have to do,' said he, 'is to pay Mr. Hinds his salary, and say to him, Here are your wages, and we don't want you any more.' The result of this scene appears to have been that 'The five candidates were then called into the room and informed that the election would not take place at present!' And from another, and I

believe authentic source, I learn that Mr. Hinds has consented to a reduction of his salary to 120*l*. per annum, that the testimonials of the various candidates have been returned by book post and without comment, and that the matter is now at an end. Let us of the profession learn wisdom. I am, Sir, yours faithfully,  
RAMSGATE, January 18, 1869. W. LANE SEAR.

QUESTIONS.

To the Editor of 'The Architect.'

SIR,—As you kindly intimate in your paper that questions of professional and practical nature will receive solutions, would you kindly favour me with answers to the following queries?—

1st. Presumed, that a clerk of works sanction the use of certain materials upon a job; after they have been fixed the architect's attention is drawn to the inferior nature of the materials and workmanship, and he orders the substitution of better, in accordance with the terms of the specification: is the clerk of works responsible for the amount of extras consequent upon the condemnation of the materials he had previously sanctioned?

2nd. In the case where a clerk of works is not engaged, the architect of course superintends and sanctions the use of materials upon a job; but in the opinion of the proprietor and a competent surveyor they are inferior, and not according to the terms of the specification: is the architect responsible for extra cost in substituting proper materials and workmanship?

Yours very truly,  
SURVEYOR.

January 20, 1869.

[N.B.—We do not undertake to supply answers to such enquiries as the above, but we shall gladly insert suitable replies if furnished by correspondents.—Ed.]

NEW BUILDINGS AND RESTORATIONS.

**Opening of a Co-operative Hall at Bury.**—A fine new building, which has been erected by the Bury Co-operative Society, to serve the purposes of warehouse and public hall, has just been opened. The building is situated in Knowsley Street, and is a plain but substantial brick erection. It is between 60 feet and 70 feet high, and the internal space is 480 square yards, the building itself being nearly square. The cellaring extends under the whole of the building. On the basement storey there are offices and a passage for waggons right through the building, built on iron beams and brick arches, on each side of which is the platform of 150 yards area, the warehouse being of an area of 350 yards. On the first floor are committee rooms and an ante-room to the large hall above, which is 74 feet by 60 feet, and has a gallery of 74 feet by 17 feet down on one side. This hall is 30 feet high, and is enriched with deep mouldings, and a frieze round the walls, and with ornamental painting; it is lighted by three sun-lights.

**Proposed New Church for South Lambeth.**—A new church has been opened for the accommodation of the residents in that portion of the parish of St. Mark's, Kennington, which is called South Lambeth. The freehold of South Lambeth Chapel, and the land adjoining it, have been secured at a cost of 1,600*l*.; and the existing building has been altered and adopted for the church of the new district.

**The New Buildings for the Royal Academy, Burlington Gardens,** are now so far advanced that the apartments will very shortly be put into the hands of the decorators. No doubt exists as to the holding of the next Royal Academy Exhibition in the new place.

**The Junior Carlton Club** is now nearly completed, and its members hope to be able to move from Waterloo Place into their handsome new house, between St. James's Square and Pall Mall, early in the approaching summer.

**A new Corn Exchange and Plait Halls** were opened on Monday at Luton by Earl Cowper, the Lord-Lieutenant of Bedfordshire. The buildings, which have cost 15,000*l*., have been raised by the energy of the people of the town and district.

**A new and very handsome Theatre,** to be called the Academy of Music, has been completed in Montreal. The exterior is Tuscan in architecture, and the interior florid Renaissance. It is calculated to seat sixteen hundred spectators.

**A new National School** has just been opened at Narberth, in Pembrokeshire. The architect was Mr. David, of Laugharne. The style is Gothic.

**The New Militia Barracks at Aberystwith.**—These barracks have been built from the plans of Mr. J. W. Szlumper, architect. Mr. Thomas Davies, Aberystwith, contractor. Local stone of a darkish blue colour has been used in the work, and the roof is covered with the Aberlenny slates; the dressings are of white Ruabon brick, and freestone. The style of architecture is somewhat after the Italian. There is a frontage of 248 feet; in the centre, over the arched gateway, is a strongly-built square tower, with castellated top of white stone. At each end of the front is a wing, running back some 30 feet. A drill shed, 136 feet long, running parallel to the front, completes the enclosure. At each of the four corners is a small square fort, with castellated top. The two sides and the back are protected by a strong stone wall, seven or eight feet in height. The entrance is through a pair of wooden gates topped with iron spikes. The estimated cost was 3,700*l*.

**The New Opera House at Vienna** is approaching completion. It will seat 3,000 people. The stage is unusually spacious. The orchestra is designed to hold eighty performers. The crush room is spoken of as a splendid apartment, but of those who have seen the house itself many are disappointed. The cost up to the present time has been about 4,700,000 thalers, or upwards of 700,000*l*. of English money.

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

**The New City Hotel, Bristol.**

Bristol, the 'Capital of the West,' has recently been making rapid progress in her public buildings, and in no class of structure has this march of improvement been more striking than in the larger class of hotels, of which some three or four have been erected within the past two years. The Clifton Down Hotel in the neighbourhood of the Suspension Bridge, and the Royal Hotel, College Green, in the vicinity of the Cathedral, stand out prominently as specimens of the improved architectural taste of the enterprising inhabitant of 'ye ancient city,' and in the still more centrally situated building, the City Hotel, opened on Thursday the 7th inst., we have a noble structure, though not so ornate in appearance as its rivals. The building has a frontage of 110 feet, and it runs back a distance of 136 feet. It is in the Italian style, and the architects, Messrs. Foster and Wood, have obtained a plentiful supply of light by erecting the chief portion of the structure on three sides of a rectangle. The building is marked by an absence of elaborate ornamentation; it is crowned by a deep overhanging roof cornice supported by carved brackets. On the vestibule and entrance hall a good deal of decoration has been lavished. The entrance hall, which is 70 feet long, is covered with an arched glass, and Raphaellesque ornaments, with elaborately executed figures emblematic of the seasons, are here introduced, partly on a positive dark and partly on a light ground. Serpentine and black marble columns add to the harmonious effect of the whole of this unusually rich decoration. The artist of this portion of the work is Mr. Sang. To the right and left of the entrance hall are situated the commercial room, 70 feet by 40 feet, and decorated in the Italian style, with a panelled ceiling; and the coffee room, 65 feet by 35 feet. Further on, to the right of the entrance hall, is the public bar, flanked by service rooms, and opposite is a large restaurant, or public luncheon room, 60 feet by 40 feet. At the extreme end of the hall is a commodious billiard room, 42 feet by 24 feet, furnished with table and necessary appliances by Thurston. Next to the commercial room is the main staircase, of Portland stone. On the first floor there is a ladies' coffee room. A continuous corridor communicates with the several rooms on this floor and the three floors above. The hotel, which belongs to a limited liability company, has been constructed to a considerable extent of Bath stone. The foundations and work up to the ground line were executed by Mr. Baker, a local contractor. After some delay, the remainder of the contract was given to Messrs. Warburton Brothers, of Manchester, in the meantime the original plan having been somewhat reduced. The work was commenced in November, 1867, the term of the contract being that the structure should be finished by January 1, 1869. That period was subsequently extended. February 14, 1869, was then named as the day of completion of the contract. Wishing to see the work out of hand as soon as possible, the directors ultimately made a proposition to Messrs. Warburton, offering them a douceur of 500*l.* if they would have the building ready for the furniture by October 31, 1868, three months in advance of the specified time. The contractors accepted, and, favoured by the protracted dry weather of June and July, carried out their engagement, and received a cheque for 500*l.*, though there were necessarily innumerable details to be completed between that date and Thursday the 7th inst., when the handsome building was formally opened.

**Technical Education Conference in Germany.**

The system upon which the Polytechnic Schools of Germany are conducted is probably sufficiently well known to our readers, many of whom have possibly taken advantage of the scientific and practical instruction which these excellent institutions afford. We mention them to-day, because we are informed that a Congress of Professors engaged in these schools will in all probability take place next year, to consult and to compare notes as to the various requirements and objects of Polytechnic schools, to exchange experiences of teaching, and to take such steps as will ensure that such teaching shall always continue to keep pace with the march of the sciences. The idea emanated from Stuttgart and Karlsruhe, and answers accepting the invitation have been received from Prague, Dresden, Munich, Gratz, Vienna, Brunswick, and Brünn: the authorities of the more important colleges, however, namely, those at Berlin, Zurich, and Hanover, have declined for the present to take part in the proposed Conference.

**Railway Bridge over Holland Deep at Moerdyk.**

This will be one of three large bridges required to be built to connect the railways of Belgium with those of Holland in a direct manner between Moerdyk and Rotterdam.

The piers for the bridge are in progress, and the contract for the superstructure has been taken by a large firm in Holland. The bridge will be for one line of rails, and consist of fourteen spans of 105 metres from centre to centre of piers, the girders being 12 metres deep at the centre, and 6 metres at the ends, with curved top-flanges, and the bracing composed of vertical struts and diagonal ties. The construction of this bridge will require 6,000 tons of wrought iron and 600 tons of steel, and is to be completed by the spring of 1873. We hope to give illustrations and further details of this work in an early number.

**Courtesy the Best Policy.**

The practical results of the method in which the directors of the London, Brighton, and South Coast Railway have placed themselves in opposition to their customers, the residents and travellers on their line, have been brought to a pecuniary test. The increase made in 1868 over the second and third class fares ranges from 20 to 75 per cent., the lower rate obtaining in only one instance, which is that of the second-class fare from Brighton to Victoria, which was raised from 10*s.* to 12*s.* The average increase on

the fares to twelve stations is 40 per cent. During the 26 weeks ending the 27th December last, the traffic receipts of that Company amounted to 699,995*l.*, against 702,241*l.* in the corresponding 26 weeks of 1867, showing a decrease of 2,246*l.* Comment is superfluous.

On eleven of the principal lines of railway, the increase for the last half of 1868, over the corresponding term in 1867, was 255,007*l.*, or about 2.04 per cent. The only exception to the general improvement, besides that which is the case with the Brighton line, has been a falling off to the extent of 5,194*l.* in the income of the London and South-Western. It will be remembered that the complaints as to the want of portage, station accommodation, and decent respect to passengers, on this line have been loud and persistent.

Railway managers and directors will in time learn that the discourteous and negligent man of business, or rather man not of business, drives away his customers.

**The Ex-Queen of Spain**

Has bought the 'Hôtel Basilewski,' at Paris, for her residence in that city. It is situated in the Roi de Rome Avenue, near the corner of the Rue Pauquet, and is approached by two light wrought iron gates, the house itself standing a little back from the road. It was built three years ago by Count Basilewski, a Russian nobleman, who gave *carte blanche* to his architect and sculptor to do whatever they liked. The result was a two-storeyed façade in modern French Renaissance, five windows wide, and flanked on either side by a slightly projecting wing, the whole being surmounted by the usual steeply pitched French roof. The sculptured frieze is ornamented with warlike implements and accoutrements, representing the various military branches of artillery, cavalry, and infantry, whilst the centre bears the arms of the Basilewskis. The central vestibule is of the purest white marble, divided into panels by fluted pilasters. The Hotel is at present untenanted, but it is expected that the King, Don Francis of Assisi, will inhabit one wing, and the young Prince of the Asturias the other 'pavilion,' whilst the Queen will occupy the central block. The entrance gates from the street into the fore-court are flanked by massive piers, surmounted by boldly conceived and well executed allegorical trophies, by Bloche, representing Europe, Asia, Africa, and America. Altogether, though not the Escorial, this little mansion is not altogether unworthy of being the retreat of dethroned royalty.

**Discovery of an Ancient Crypt in Hungary.**

A fine crypt, declared to be of the twelfth century, has just been discovered near the Cathedral of Gran, in Hungary. The vaults of the roof are supported by eight granite columns, the capitals of which are all different from each other. The crypt is to be restored, and dedicated to the memory of Etienne, king and saint.

**Academy of the Beaux Arts, Vienna.**

The Emperor of Austria has confirmed the nomination of the following French artists as honorary members of the Vienna Academy of the Fine Arts:—MM. Henriquet-Dupont, line engraver; Robert-Fleury, Cogniet, and Gérôme, painters; Guillaume, sculptor; Duban, Viollet-le-Duc, Boeswilwald, and Ballu, architects.

**Notes for Connoisseurs.**

Water-colour drawing is a comparatively new art in France, or at any rate it is only recently that it has attained anything like importance. The most remarkable water-colour artist of the present day in France is M. Ziem, whose oil paintings are well known by all who visit the annual exhibition or *salon* in Paris. He delights in blazing skies and wondrous atmospheric effects, and his works remind sometimes of Claude and at other times of our own Turner; a view of the harbour of Marseilles exhibited last year was all in a blaze, like some of Turner's Italian views—and it was a blaze of beauty.

Ziem is an enthusiast in his art, lives and paints, when in France, at Barbizon, an artistic colony on the edge of the beautiful forest of Fontainebleau; but the greater part of his time is spent in Italy or in the East. His water-colour paintings are rather finished sketches than pictures, and looked at in that light they are gems of their kind. The treatment is light, decided, and not over elaborate, as water-colour drawings should be, and not worked up in imitation of oil paintings; they have the appearance of being thoroughly completed in the presence of nature, and so we believe they are. From time to time M. Ziem disposes of his beautiful sketches, and a sale of thirty-four of these occurred the other day and created great interest. Some of these were hardly larger than an octavo page, one was no bigger than a large address card, and few surpassed the size of a page of *THE ARCHITECT*, yet the thirty-four sold for more than 900*l.* A View of the Port of Venice, sunset, sold for 70*l.*; another of the Palace of the Doges, with a Party of Pleasure, nearly 42*l.*; Tunny-Fishing at Sausset, 54*l.*; a View of Martigues, 76*l.*; and an exquisite picture of a Caravan quitting Cairo for Mecca, glowing in sunshine, 120*l.* Skies and sunlight are M. Ziem's fortes, and the simple means by which his effects are produced offer valuable lessons to young artists.

Other drawings and sketches have of late fetched high prices in Paris; a water-colour drawing of Catalonian Sailors, by Decamps, formerly Lord Seymour's, for 132*l.*; a Fête at Versailles, by Eugène Lamy, water colours, 164*l.* At another sale a water-colour sketch of a tiger, by Barye, the famous animal sculptor, fetched 24*l.*

Amongst sales of oil paintings may be mentioned a Wood Scene, by Cabanel, a work not in the line of this clever artist, sold for 380*l.*; the Banks of the Cure, at Morvan, by Daubigny, exhibited in 1864, 168*l.*; Oaks and Rocks in the forest of Fontainebleau, by Diaz, 388*l.*; the Return from Drinking, one of Delacroix's spirited horse pieces, a small work, 508*l.*

La Zingara, a striking figure of a gipsy woman, well known, 268*l.*; the Halt at the Oasis, by Fromentin, 320*l.*; Eastern Fisherman raising his Nets, by Zian, 238*l.*; and a View of Chambord, by the late admirable landscape painter Théodore Rousseau, 94*l.*

A very important sale is approaching, that of the collection of the two brothers Delessert, the younger of whom is recently deceased. The catalogue will contain the only known work by Raphael in private hands in France; it is a small Virgin and Child, formerly in the Orleans collection, and once in England; but we shall have to return to this subject when the sale catalogue appears.

## General.

**The Thames Embankment.**—The Thames Embankment has this week received a valuable embellishment in the shape of a row of vigorous young plane trees, which have been carefully planted near the edge of the footway. The trees selected for this purpose are about 20 feet high, and are planted 20 feet apart. A square opening has been cut in the paving at the spot where each tree is planted, and within this space the paving is replaced (as on the Paris boulevards) by a heavy perforated iron grating, in four portions. The trees have been well planted in deep pits, and a common drain tile is inserted vertically close to each one, in order to secure that water shall reach to the roots. It appears to us that some protection for the stems of these trees will be needed.

**The Rev. C. H. Spurgeon** has received an intimation from a person who desires to remain incognito, that he is anxious to build a chapel, some schools, and a number of almshouses in connection with the Metropolitan Tabernacle.—*South London Press.*

**The Relationship between masters and men in the Blackburn building trade** is by no means of an assuring character. About a month ago it was decided, at a meeting of the operative carpenters and joiners, to give notice of a reduction in the hours of labour from fifty-four to forty-nine per week. The men assert that this concession, which implies the commencement of work at seven instead of six o'clock in the morning, is enjoyed by other branches of the trade; and the hope is expressed that the privilege will be extended to them. A circular has been issued, appealing to the masters in this matter, and in reply the masters suggest that payment should be made by the hour; and if this proposal be rejected, then that the question shall be referred to arbitration.

**The Hyde Park and City Railway** has been abandoned for the present session.

**The Building Trade of Lancashire and Cheshire.**—A Liverpool paper states that a requisition to 'the master builders and other employers of labour connected with the building trade of Lancashire and Cheshire' has been drawn up, and numerously and influentially signed, suggesting 'the employment of non-unionist workpeople and members of the Free Labour Registration Society.' The requisitionists hold the opinion that 'with a free exchange of labour there would be abundance of employment for every class of workpeople,' and undertake 'to give a preference to those master builders who offer the greatest encouragement to free labour.'

**The Royal Institute of British Architects** has just issued the Supplementary Catalogue of their Library, as enriched by the donation of Mr. Tite and by other additions of recent dates.

**The Statue of Lord Palmerston**, by Mr. Woolner, which is to be erected in Palace Yard, Westminster, is now so nearly completed that the model is in the hands of the bronze casters. The statue will be a little larger than life.

**Treasure Trove at Hampstead.**—The other day, while engaged in digging the foundations of the new Home for Sailors' Orphans between Church Row and High Street, Hampstead, a working man came upon a leaden coin, about 2 feet below the surface, in a bed of loam and clay. It is about an inch and a half in diameter, and on inspection it turns out to be a 'bull' of Pope Innocent IV., one of the well-known family of Fiesco, who sat in the chair of St. Peter from A.D. 1243 to 1254. The 'bull' bears on the reverse the figures of St. Peter and St. Paul, and is in a tolerable state of preservation; it has been secured for the British Museum.

**Lead-Poisoning.**—The *Lancet* says there is a great amount of lead-poisoning involved in the various works on the Tyne, and that it is not improbable the subject will be brought before Parliament.

**The Salary of Sir Francis Grant**, as President of the Royal Academy, is to be raised from 300*l.* to 600*l.* It is possible that he may live to have it tripled, as on the death of Lady Chantrey, 300*l.* a year of her husband's property will go to the President of the Academy.

**An Exhibition of the works of the late Mr. George H. Thomas** is to be held in the course of the spring.

**A Statue to William Tell** is about to be erected by the canton of Uri in the town of Altorf.

**The Hartley Institution**, Southampton, has just had a narrow escape from being either partially or totally destroyed by fire. The mishap was occasioned by the pipe from a stove recently erected in one of the classrooms being allowed to run into a narrow air shaft, which was mistaken by the workmen for the shaft of the chimney. The effect of this was that the roof of the building became so much heated that some bricklayers at work raised an alarm, and the cause was soon discovered and the pipe removed. Had the building caught fire, damage to the extent of some 10,000*l.* might have been done in a few hours.

**Threatened Strike of Stone Masons.**—A dispute, not likely to be healed, has arisen between the stone masons and their employers in the North, and is now agitating the men belonging to the trade in the metropolis. The dispute has arisen respecting the rough and fine or finishing dressing of stone. Some time since the masters got the stones rough-

dressed by machinery, and that displeased the men, but an agreement was entered into by which the rough-dressing as well as the finishing was left in the hands of the men. Experience, however, taught the latter that but small wages were to be made by the rough dressing, and accordingly they are now determined to give it up. The masters are firm in keeping the men to their agreement, and there is at the present moment every probability of a strike, disastrous in its consequences as that of two years ago. Delegates from London will, it is stated, go to the North to endeavour to adjust the difficulty.

**The Ironworks at Creusot**, in France, are constantly presenting some new feature of interest. The other day a new theatre was opened there, capable of containing from 700 to 800 persons, with pit, two galleries, and orchestra stalls, painted in white picked out with gold, and illuminated by means of a transparent ceiling.

**Liverpool.**—The Corporation have granted a half-year's salary (600*l.*) to the widow of the late Mr. Thomas Duncan, C.E., as a mark of respect for his long and faithful services as Water Engineer to the Corporation. They have also appointed Mr. Joseph Jackson, C.E., to superintend the new works [at Rivington for three years, at a salary of 500*l.* per annum, and travelling expenses. The Deputy Engineer will conduct the business of the department. This practically postpones the appointment of a successor to Mr. Duncan for three years.

**The New Blackfriars Bridge.**—The works on this magnificent structure continue to progress in the most satisfactory manner. All the iron girders have now been laid. The abutment on the north side has been raised to its proper height with solid brickwork, and iron balustrades have been laid and riveted on the adjoining arch for the support of the roadway. Workmen are busily engaged in finishing No. 2 arch from the north side in a similar manner. The piers are being raised from the level at which the iron girders rest to that of the roadway. On the abutments of the piers wooden sheds have been constructed, in which masons are busily engaged cutting large blocks of stone, which will be placed on the abutments of the piers for improving the appearance of the bridge.

**Dartmouth, Devon.**—This town gave birth to Newcomen, whose name and memory will ever be honoured among engineers. A great portion of the old town was built with houses having richly carved oak fronts, in one of which Newcomen lived. A year or two ago the house (with others) was taken down to make a new street, when Mr. Lidstone, a native of the place, embraced the opportunity to secure the woodwork of Newcomen's sitting-room. In the room is walled in, in the fireplace, the original 'clavel' of the fireplace of Newcomen's room. The building presents the character of a renovated courthouse of temp. Jacq. I., and has been much admired. There can certainly be no lack of taste in a private individual, at his own cost, rearing such a memorial to a neglected man's memory.

**Ancient Carving in the Old Reading Room of the Bibliothèque Impériale in Paris.**—The handsome wood carvings of the time of Louis XIV. which decorated the old reading room of the Bibliothèque Impériale in Paris have just been sold by the authorities as old building materials. But these beautiful specimens of carvings will not be lost, they having been purchased by M. Recappe, the well-known dealer in works of art.

**Discovery of Greek and other Antiquities.**—In the *Athenaeum* some time ago was found a better account of the discoveries at Idalium in Cyprus than is given from the German periodical, and which answers the question as to some of the antiquities being Phœnician. The upper cemetery is Greek, but this curiously rests on another cemetery of vaulted graves, within which are found well-authenticated Phœnician objects with Phœnician characters. As Phœnician remains are found in Cyprus, a common observer has no difficulty in the identification. The question is, whether remains earlier than Phœnician will be found.

**Cliff Fall in Denmark.**—A celebrated cliff in Denmark, the 'Queen's Seat,' has just fallen bodily into the Baltic from a shock of earthquake. The rock, about 400 ft. high, was an object of great interest to tourists from the magnificent view to be had from it. On a clear day Rügen and the coast of Pomerania could be plainly seen. Everything has disappeared except some masses of chalk, which form a sort of island near the shore. No life has been lost, but the inhabitants and neighbouring villages were terrified at the noise produced, which lasted several seconds.

**Mr. J. H. Parker** is again busily engaged this winter upon fresh excavations at Rome. The Papal authorities are more favourably inclined to his work than they were a year or two since.

### MEETINGS OF LEARNED SOCIETIES.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Monday, February 1, at 8 P.M. Special meeting to discuss proposed alterations in the Metropolitan Building Act.

ROYAL BOTANIC SOCIETY.—Saturday, 8.45 P.M.

ASSOCIATED ARTS INSTITUTE.—Saturday, 8.15 P.M. Discussion:—'Has the Street Architecture of London derived Benefit from the Introduction of Coloured Materials?'

THE INSTITUTION OF CIVIL ENGINEERS.—Tuesday, January 26, at 8 P.M.

THE INSTITUTION OF SURVEYORS.—Monday, January 25, at 8 P.M. Adjourned discussion on Paper, by B. B. Grantham, C.E.—'Parochial Assessments,' by Edward Ryde.

ARCHITECTURAL ASSOCIATION.—Class of Design. Friday, February 5, at 8 P.M. 'Architecture of Belgium.' R. Phéné Spiers.

ASSOCIATED ARTS INSTITUTE.—Monday, January 25, at 8.30 P.M. Sketches. Discussion:—'Question'—'Does General Mental Training tend to Develop Art Power?'

LONDON INSTITUTE.—January 25, 6 P.M.

INSTITUTE OF ACTUARIES.—Monday, January 25, 7 P.M. Paper, by the President—'On the Mortality Experience of Life Assurance Companies, collected by the Institute of Actuaries.'

BRITISH ARCHAEOLOGICAL ASSOCIATION.—Wednesday, January 27, 8 P.M.

ROYAL GEOGRAPHICAL SOCIETY.—January 25, 8.30 P.M.

SOCIETY OF ARTS.—January 27, 8 P.M.

EDITORIAL NOTICES.

No communication can be inserted unless authenticated by the name and address of the writer, not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

Our readers are invited to address us on subjects of interest to themselves or the public. We shall be always ready to insert letters asking for a solution of any suitable questions of a professional or practical nature, and to receive replies to such enquiries.

PUBLISHER'S ANNOUNCEMENT.

Advertisements cannot be received for insertion later than 2 P.M. on Thursdays.

Temporary Office, 4, Monument Yard, London.—GILBERT WOOD, Publisher.

THE GAZETTE.

PARTNERSHIPS DISSOLVED.

Samuel Pickins & Samuel Bywater, Stretford New Road, Manchester, painters and house decorators.—Alexander Perkins & Frederick Perkins, Clapham Road, Kennington, timber merchants.—Thos. Martyn & John Hopkin Morgan, New Pottery, Church Green, Derbyshire, tile manufacturers.—Silas Guest, Silas Griffiths, & Caleb Griffiths, Churchbridge, Oldbury, Worcestershire, brick and tile manufacturers.—John Pickard & Benjamin Price, Bridgnorth, Shropshire, builders.—William Puleford France & John Edward Hards, Bridge Wharf, Paddington, timber merchants.—John Williams & Edward Jones, Liverpool, brickmakers.—Richard Savadge Davenhill, John Edmund Thomas, & William Donaldson, Park Street, Westminster, engineering surveyors.—Thos. Bevington, Sydney Courtland, & Charles Stuart Baker, Spa Road, Bermondsey, manufacturing engineers.—Margaret Lumley & George Watson, Lower Shadwell East, engineers.

DECLARATION OF DIVIDEND.

William Lee, Honiton, Devonshire, builder—further div. of 3d. any Tuesday or Friday, at Mr. Carrick's, Queen Street, Exeter.

BANKRUPTS.

LONDON.—George Gregory, Church Road, Teddington, contractor, Jan. 29, at 1.—Ebenzer Warwick Howell, Crozier Terrace, Homerton, builder, Jan. 27, at 2.—William Leonard, Hawthorn Cottage, Kilburn, timber merchant, Jan. 29, at 1.—Edward Richard Palmer, Durham Place, Seven Sisters Road, Holloway, builder, Feb. 1, at 1.—Wm. Francis Reeves, Dulwich Road, Brixton, marble mason, Feb. 3, at 2.

TO SURRENDER IN THE COUNTRY.—John Fuke, late of Torquay, Devonshire, builder, Jan. 27, Exeter.—John Carey Kemp, Commercial Road, Exeter, timber dealer, Jan. 26, Exeter.—Isaac Linn, Cornbrook Terrace, Gorton Lane, West Gorton, Manchester, brickmaker, Jan. 27, Manchester.—George Adamson, Dartmouth, Devonshire, brickmaker, Feb. 6, Totness.—William Bryning, Terminus Place, Eastbourne, Sussex, decorative artist, Jan. 29, Lewes.

SCOTCH SEQUESTRATION.

John Brunton, Dalkeith, builder.

TENDERS.

REIGATE ESTATE (Red Hill).—For the Road and Drainage Works to be completed on this estate, belonging to the United Land Company (Limited):—

Table with 2 columns: Name and Amount. Includes T. R. Hooper, W. Higmore, J. Blackmore, H. Wesley, William Cook, R. Moxon, J. Pizzev, J. Coker, J. Symonds.

STANLEY PARK, LIVERPOOL.—For the Iron Railing, Gates, &c. (irrespective of stonework), forming the boundary of the Park. Mr. E. R. Robson, architect:—

Mr. W. H. Peake (accepted) . . . £3,646 0 0

SEPTON PARK, LIVERPOOL.—For the Plantations, Messrs. André & Hornblower, landscape architects:—

Messrs. Thomas Dickson & Co. . . £4,898 16 0 (accepted)

For Woolton Stone Plinthing to Boundary Railing:—

Mr. Pearson Lee (accepted) . . . £4,069 0 3

NOTTINGHAM.—For Factory, Robin Hood Street, for William Windley, Esq. Thos. Hine & Son, Nottingham, architects:—

Table with 2 columns: Name and Amount. Includes J. E. Hall, Barker, Dennett & Co., Fish, Stevenson & Weston, Wright & Johnson, Vickers, Bell & Son, Rest, Wool & Sligh, Wood & Son.

UPPER NORWOOD.—For House, for the Rev. E. Birch. Mr. Sextus Dyball, architect:—

Perry (accepted) . . . £2,800 0 0

Table with 2 columns: Name and Amount. Includes Wandsworth, Patrick & Son, D. Nicholson, Vliet, Ebbs & Sons, Anderson & Sons, Avis, J. Thompson.

LONDON.—For pulling down and rebuilding House, for Mr. J. S. Gover, City Horse and Carriage Repository, Barbican. Mr. R. Walker, Architect. Quantities by Mr. W. E. Stoner:—

Table with 2 columns: Name and Amount. Includes Lark, Brass, Hen-law, Sewell & Son, Prince, Kilby, Turner & Sons.

LIVERPOOL.—For Lancaster Buildings, Tithobarn Street, Messrs. Pickton, Chambers & Bradley, architects:—

Table with 3 columns: Name, Buildings, Vaults. Includes Campbell, Mullin, Hughes, Haigh & Co., Jones & Sons, Holme & Nicol, Rome, Nicholson & Ayre, Callie, Westmoreland, Urmsou (acptd.).

APPOINTMENTS VACANT.

HUNDRED OF WIRRAL, CHESTER.—District surveyor. Salary 160l. a year, and will be required to reside within the district of the Board, and to give his whole time and personal attention to the duties connected with his office. Applications to be sent to William Henry Churton, Eastgate Buildings, Chester, on or before Monday January 25.

LEWISHAM, KENT.—Surveyor of Highways. Salary, 300l. per annum. February 5. J. Edwards, Clerk to Local Board.

ROYAL ACADEMY OF ARTS.—National Gallery. For the best painting in Oil—or Model and Design in Painting, Sculpture, and Architecture. The Gold Medal and the Discourses of Presidents Reynolds, West, &c.; and for the best Copies of Drawings, Models of Life, the Antique in Landscape Perspective, &c. The Silver Medals, &c. November 1.

COMPETITIONS OPEN.

ROTHERHAM.—March 15.—For Plans, &c., for erecting a Public Hospital and Dispensary. A prize of 75l. is offered for the best design, 50l. for the second, and 25l. for the third. John Barras, hon. secretary, Rotherham, December 15, 1868.

VIENNA, AUSTRIA.—This Municipality require Designs, Plans, Estimates, &c., for the Erection of a New Hotel de Ville. Open to all Europe. For Particulars, Austrian Consul-General, 21 Rue Lafayette, Paris. (See ARCHITECT, Jan. 2, p. 12.)

SOUTH METROPOLITAN SCHOOLS, SUTTON, SURREY.—For Designs for the Erection of an Infant Establishment adjoining the present Schools. Premiums of 40 Guineas each for the three best designs considered the best. February 2. J. Burgess, Clerk to the Managers, Vestry Hall, Walworth.

KINGSTON-ON-THAMES.—March 1.—Design for New School and Master's Residence. Cost not to exceed 3,000l. F. Gould, Esq., Kingston-on-Thames.

PETERBOROUGH.—Feb. 3.—Plan and Estimate for Addition to the Corn Exchange. S. C. W. Buckle, Peterborough.

KIDDERMINSTER.—Feb. 9.—Designs, Plans, Specifications, &c., for an Infirmary and Dispensary. E. Morton, Hon. Secretary.

DOVER.—Feb. 20.—St. Mary's Burial Board. Designs for laying out 94 acres, for the purposes of a new Cemetery. Premiums 50l. and 20l. G. Fielding.

LEAMINGTON.—Feb. 10.—Royal Pump Room Gardens. Designs for a Memorial Fountain. A. S. Field, Leamington.

CONTRACTS OPEN.

NORTHAMPTON.—February 16.—For the supply and erection of a Gasholder, 100 feet diameter by 30 feet deep, with columns, girders, &c. John Eanson, jun., Northampton Gas Company, Northampton. See Advertisement.

BATH.—Grand Pump Room Hotel.—January 30.—For the Hydraulic Apparatus connected with the Lifts. Willson & Wilcox, architects. 1, Belmont, Bath. See Advertisement.

BOARD OF WORKS (Poplar District).—January 26.—Construction of 2 Cast Iron Pipe Shafts, 12 Gullies, and 568 feet of Jennings's Patent Pipe Sewer; also 1,773 feet of Jennings's 12-inch Patent Pipe Sewer with the necessary junctions. S. Jeffries Barth, 291, East India Dock Road, London, E.

LEIGH, LANCASHIRE.—February 6.—For erection of Primitive Methodist Chapel and Schools. E. Pritchard, C.E.

BORDEAUX, France.—Granite for Curb Stones for the supply of the year 1869, to the extent of about 2,000l. Deposit by way of security, 120l.; preliminary deposit, 40l. All particulars to be obtained at the Hotel de Ville, Bordeaux, Division des Travaux publics. Tenders to be sent in before February 4.

ROUEN, FRANCE.—Enlargement of the Palace of the Prefecture, estimate for the whole work about 28,000l.; and construction of a new wing to the Female Lunatic Asylum of that town, estimated at upwards of 40,000l. Amount to be deposited as security, 1,400l. in the former, and 1,600l. in the latter case. The tenders, as usual in France, to be made at a discount on the estimates. All particulars to be obtained at the Bureau des Dépêches in the Prefecture Rouen. Tenders to be sent in before February 11, when the adjudication will take place.

BIRMINGHAM.—Feb. 17.—Erection of Schools to accommodate 300 Boys, with Dining Hall, Workshops, Apartments for Masters and Teachers, and other Buildings. Martin and Chamlerlain, Christ Church Buildings, Birmingham.

SPAIN.—March 1.—For Submarine Telegraph Cable. Urbano Montego, 155, Fenchurch Street, E.C.

WARRINGTON.—Jan. 25.—Tenders are invited for construction of 2,000 yards of Brick and Pipe Sewers. R. Vawser, Borough Surveyor, Warrington.

GLOUCESTER.—Jan. 28.—For erection of New Buildings in connection with Gloucester Infirmary. A. W. Maberley, architect, 1 Brunswick Road, Gloucester.

HORWICH MOOR (near Bolton).—Feb. 6.—Erection of Primitive Methodist Chapel. Peter Butterworth, Horwich Moor, near Bolton.

GREAT HORTON.—Feb. 5.—For erection of Great Horton Church. Messrs. J. H. & F. Healey, architects, Bradford.

STRAND UNION.—Tanner's End, Edmonton.—For the Erection of a new Workhouse and Subsidiary Buildings, &c. Feb. 9. By order. G. Bow Street, Covent Garden.

GREAT GIDDING, HUNTINGDONSHIRE.—For the Restoration of the Parish Church. Jan. 30. T. Fowler, Louth, Lincolnshire.

ABERGAVENNY.—Erection of a town hall, with shops, offices, and other buildings, and the reconstruction of the general market place, with other works, Jan. 25, 1869. J. T. Rutherford, Abergavenny.

MONMOUTH.—For erection of new workhouse for the Monmouth Union, Feb. 5, 1869. Edwin Richards, clerk to the Local Board, Monmouth.

RADCLIFFE LOCAL BOARD.—Tenders are invited for a supply of Glazed Sewer Pipes, Tiles, Junctions, and Invert Blocks, of various sizes and descriptions, up to December 31, 1869. Jesse Haworth, Water Lane, Radcliffe.

GREAT WESTERN RAILWAY.—For supply of Fire Bricks, Fire Clay, Cement, Grindstones, Drain Pipes, Slates, Lamps' Glass, Carpenters' Work and Office Furniture, English Timber, Ironmongery and Hardware, Gas Fittings, &c. F. G. Saunders, Paddington Station.

METROPOLIS ROADS.—February 2.—Watering and Sale of Road Sand, North of the Thames. For Men, Horses, &c. February 2, 11 o'clock, A.M. 32, Craven Street, Strand, W.C.

WEYMOUTH AND MELCOMBE REGIS-DORSET.—For new Paving, Gutters, Curbing, &c. F. C. Steggall, Clerk.

CARDIFF LOCAL BOARD OF HEALTH.—Feb. 28.—For the construction of a New Outfall Sewer, Channel, and Works connected therewith. Geo. Salmon, Town Hall, Cardiff.

SHEFFIELD.—Feb. 10.—For the erection of Two Wings with Central Building and Offices for the new South Yorkshire Asylum, at Wadsley Park, near Sheffield. Bernard Hartley, West Riding Surveyor, Pontefract.

TONBRIDGE UNION.—Feb. 4.—For the erection of School Buildings adjoining the Workhouse of the Union at Sandhill, near Pembury, Kent. F. W. Stone, 4 Belvedere Terrace, Tonbridge Wells.

WALTHAMSTOW SOUTH-EASTERN SPECIAL DRAINAGE DISTRICT.—Feb. 8.—For the construction of the drainage works in the above district. The works comprised in the contract will be about as follows:—800 yards of 24-inch circular brick sewer, 730 yards of 18-inch pipe drain, 160 yards of 15-inch, 1,670 yards of 12-inch, 190 yards of 9-inch pipe drain. Wm. Houghton, Clerk to the Committee; Messrs. Houghton and Wragg, 15a, St. Helen's Place, E.C.

WORCESTER.—Jan. 23.—For Cast Iron Pipes for Water Mains for the Worcester Water Works. Richard Wood Guildhall, Worcester.

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# The Architect.

## THE SITE OF THE LAW COURTS.



THE question of the site for the Palace of Justice has taken firm hold of the public mind. It will no doubt form a subject of earnest and early discussion at the opening of the ensuing session of Parliament. At present, however, no other opportunity for a public discussion has been afforded than that given by correspondence and articles in the leading journals, and a discussion arising upon some observations made by the President of the Institute of Architects

(Mr. Tite), which will be found in another column, at the last meeting of the Metropolitan Board of Works.

We are indebted to Mr. Tite's practical sense and experience for a tacit—nay more than a tacit—recognition of the paramount claims of the Thames Embankment site. That gentleman, while deprecating the entire removal of the proposed building, is heartily in favour of the appropriation to the purposes of the Law Courts of so much land as the Metropolitan Board of Works, to whom he was then speaking, have to sell. So far so good; but why not go further? If for a limited portion of the legal building a limited site on the Thames bank be good, will not a complete site for the whole building be better?

Sir Charles Trevelyan, whose able advocacy has given to the public the most forcible statement of the case yet placed before it, has had the courage boldly to face the whole problem, and has so worked it out as to show how easily, how completely, and even how economically, public requirements may be met, and immense advantages secured, by an adoption of the Embankment site.

One suggestion, and one only, Sir Charles has failed to make; he has exercised more forbearance towards the Railway and its proposed station, than we think was needed, and, as we shall presently show, a considerable improvement may be effected in the whole scheme, by a removal of the station from its present intended site, with which, we believe, Sir Charles's suggestions have not interfered, to a site in proximity to the present steam-boat pier.

This important but slight modification made, let us try to imagine the building and its surroundings as they would be when erected and completed with all their surroundings upon the Thames Embankment.

The whole space between the Thames Embankment and the Strand—with the Temple east of it, and Somerset House on the west—would be occupied by The Palace of Justice. In front of the river face of this building, would run our magnificent embankment—the finest terrace in Great Britain—with its roadway and broad footways and river wall.

The building would show all its beauty from this side, and its rich play of sky-line—which none knows better than Mr. Street how to introduce—would be excellently well seen, with the addition of an unrivalled frontage towards the Thames, while an equally good road frontage of great extent would exist towards the Strand. And it may here be remarked that the long unbroken extent westward of the Strand would afford opportunities for seeing the street front of the building foreshortened, and from a distance such as can never exist with the present site.

Between the Strand and the Embankment some sort of footway and some carriage access would be desirable. No better proposal can be made than that of a footway between the new building and Somerset House—that is to say, west of the new Courts; and a carriage way between the Courts and the Temple—that is to say, east of the Courts. In order to preserve good access between the Temple and the Courts, it has been proposed to make this in some sense a covered way.

There is no difficulty in rendering this covered way a most attractive and elegant feature. It would preserve convenient access for the Templars to the Court and still give a valuable public thoroughfare passing below their feet, thoroughly lighted and ventilated. An arcade, as understood in this country, best describes the feature intended; and this covered carriage way may be termed for convenience the 'Embankment and Strand Arcade.' This feature would leave the Embankment at its very widest point, that is to say, where the Temple estate joins the proposed site, and in a line with the existing steam-boat pier. Here the railway station ought to be placed—there is more room for it here than elsewhere; it will be more serviceable here than elsewhere to professional men, as this spot would be equidistant between the New Law Courts and the Temple, and the general public would equally have the best access; for here the line of the Embankment is met from the north by the proposed arcade, and from the south by the steam-boat pier, and the station, sunk below the level of the ground, ought to occupy, half of it ground in front of the Courts, and half of it ground in front of the Temple.

The thoroughfare thus started would be continued northward in a direct unbroken line to Holborn. For this singular facilities exist; the

ground over which it would run has been purchased, or is in course of purchase, so that the Law Court Commissioners have it in their power at once to open a straight road from the Strand to Lincoln's Inn Fields. There remains nothing but to widen the Turnstile into a carriage road, and we should reach Holborn direct. At its southern extremity this thoroughfare would reach the Thames Embankment by the arcade we have referred to, and thus a direct and satisfactory access from the north to the Law Courts and the Strand and the Embankment would be rendered at once practicable. This, though only one of the minor features of the scheme, is not by any means a slight advantage, and it is obvious that a direct communication north and south at this point will be rendered impossible if the new Courts of Law are built on the Carey Street site.

On this site, of which every one can form a ready idea with the aid of any map of London, or better still by walking along the Embankment, Mr. Street's building, substantially as now designed, would stand easily. The material alterations necessary to fit it to its site would be very few, and only such as would tend to improve it alike in convenience and as a work of art.

The judges would enter from the Strand at the level of their courts, and the ominous flights of steps for them which have been brought forward, and very justly, as the great blemish in Mr. Street's present plan, would be needed no longer. As the site is a little larger, there would be rather more room to expand the buildings than at present exists, but, fortunately, the difference between the two areas is not so great as to allow the possibility of any other building for any other, or even any kindred purpose, being intruded on to that part of the Embankment, beyond those which are contemplated in the very complete scheme of the Commissioners, as embodied in Mr. Street's plans.

The Law Courts thus placed would have the two best thoroughfares in London, the Strand and the Embankment, running past them, and a new and most useful thoroughfare from the north running up to them. From the north-west they could be approached along Drury Lane, a thoroughfare, which enlarged and in parts straightened, would afford good access for as much traffic as may be expected to come from that quarter. In contrast to all this the present site has only one thoroughfare giving good access to it—the Strand, and though an access from the north could be as easily had as to the Embankment site, it is certain that very heavy expense would have to be incurred in gaining sufficient access from the west. In fact, though Sir Charles Trevelyan's estimate for this may have seemed extravagant, we do not think that those who have had experience of the work of enlarging streets of the metropolis will have much difficulty in accepting his figures.

The changes that would follow, though sweeping, are simple. There is no doubt that Somerset House will soon be abandoned by those branches of the civil service which now occupy that building: The benchers at Lincoln's Inn are, it is understood, fully prepared to appropriate the whole, if offered to them, for their own purposes, and thus the New Courts, planted between the two most powerful Inns of Court, would be more accessible than on the present site they can possibly be. The western half of the large space already cleared north of the Strand would be most appropriately occupied by the benchers of Gray's Inn, who would be great gainers by changing from their present remote locality to so central an one. We have already devoted an article to the advocacy of an appropriation of the remaining, or eastern, portion of the Carey Street site to a Palace of Industry.

Strange as it may seem, there is good reason to believe that the site south of the Strand can be procured at a price which will render it, acre for acre, barely, if at all, more costly than that already partly acquired; while the difference in cost of approaches leaves a balance in favour of the Embankment Site, which is, of course, at present only matter of estimate, but which has with great probability been placed at no less a figure than one million sterling.

If there were no other question open than the option between two sites, on the one side, one of which is imbedded among houses, badly accessible, unsatisfactory in its levels, its light and air, and separated from the Temple by a busy thoroughfare; and, on the other side, a cheaper, more roomy site, with infinitely better air, light, access and levels—one would think the question would decide itself. There remains, however, one further consideration, and one to which too much importance cannot be attached. It is this—The influence of this proposed building on the arts, and architecture, and taste of England for the present and the future.

There can be no doubt that this, the largest, the most complete, and the most important public building of our time, cannot fail to influence the art of England and the public opinion of Europe upon our art and our taste more than any other work of our time. Fortunately, the work is in the hands of a thoroughly able and an eminently representative architect. The best English work of the present day will be fairly and fully embodied in the Law Courts. And this building will form a kind of reference or starting-point for future work. What the Law Courts are our work will be for long. If they fail, if they are stifled among houses, and if the noble site which they ought to occupy be given up to speculative builders, it will be a sad day for Art in this country. If, on the other hand, this splendid opportunity is embraced, and the best building of our time is put on the best site, we have every reason to expect that an impulse will be given to our progress in Architecture, in Art, and

in fact in Tastes such as England has never yet received, and such as she sorely needs. This view of the case may have small importance in the eyes of some, but to others it will approve itself thoroughly, and there are we hope none who will not be at least willing to benefit Art; if at the same time they can also promote the efficiency of the Public Service.

### ARCHITECTURAL EDUCATION AND THE ARCHITECTURAL PROFESSION.

THE Architectural Association of London have lately had submitted to them an elaborate Report on the subject of Architectural Education, drawn up by four members appointed by them as delegates from their Society to a body of gentlemen representing the majority of the architectural societies in different parts of England and Scotland, and called the 'Architectural Alliance.' As this report seeks to suggest a scheme for the better education of architectural students, and by having been printed in one of the professional papers has necessarily been made known to a great number of students and architects in all parts of the country, it necessarily attaches to itself an importance which it would perhaps have been well for the Association to have considered more carefully before permitting it to go forth to the profession at large.

That the subject is one of vital importance there can be no doubt, and, while giving all praise to the careful thought that has produced this document, and willing to endorse many of the valuable suggestions made therein, the writer would venture to dissent from much that it lays down, because it fails to enquire into and recognise the causes which are in a great measure the reason of the present admitted faulty system of education.

As the subject is about to be discussed at the invitation of the Royal Institute of British Architects, by a Committee formed of several members of its own council, and delegates from all the other architectural societies in London, it is not intended now to discuss or enter upon the system of education suggested in the report, as this will *prima facie* be doubtless fairly and duly considered by them, and in all probability some scheme will be proposed and suggested for adoption throughout the country. We venture to think, however, this report is faulty for two reasons.

Firstly, because the suggestions made therein are evidently based on the foreign systems of education.

Secondly, because it suggests a system which may or may not be followed, and which, if followed, offers no tangible advantage to the student beyond going through a more definite and systematic course of study than that usually in vogue.

Before any definite system of art education can be laid down, it becomes essential that the profession itself shall be put on a better footing, and that the question of education shall not be merely a question of choice, to be carried out or not as each individual pleases, but that it shall be made compulsory, so that architecture may occupy a position similar to the other professions, and not be in that anomalous position in which it is at present.

In support of our argument let us briefly analyse the accounts of those various systems of foreign art education, upon which so much stress is laid, as they occur in the report in question.

Firstly, let us take the French school, which briefly is as follows:—A lad on leaving school enters as a student in one of the Government schools of design, where he is taught general drawing, and, by a course of lectures, mathematics and descriptive geometry. Next he enters an *atelier* or studio, where he finds, perhaps, from twenty to thirty other students, who make and work out various designs of their own, under a professor who is paid by each twenty francs per month for a supervision of some three or four hours three or four times in each week, the remainder of the time their works being supervised and looked over by each other; beyond working out designs, the students draw out the various orders of architecture to a large scale, and are taught the art of laying on flat tints, and projecting shadows. It can hardly be supposed that the paid professor can be of any great eminence, as the smallness of the sum paid would leave him but a very small remuneration after payment of room and incidental expenses. About the end of the second year the student, if possible, passes an examination in the various studies he has been hitherto engaged upon at the 'École des Beaux Arts,' and, if successful, attends a course of lectures on various subjects in mathematics, physics, and architecture proper; and although he has not yet seen anything of real practical work, he commences writing specifications and working out details of various ordinary work, in all of which he has to pass an examination; and after three or four years thus spent, he, if he be clever, fortunately succeeds in taking off the 'Grand Prix de Rome;' and, after three more years spent in study in Italy, comes back, perhaps to Paris, at the age of twenty-seven or twenty-eight, ignorant in a great degree of the rudiments of practical learning, a victim to the system of routine wherein, as the report admits, 'all is too theoretical'—a system, however, which, if not absolutely compulsory by law, is so by custom.

Next, in Prussia, the system is somewhat changed. The student, after leaving school, enters an architect's office for a year, having previously gained at school some knowledge of drawing, physics, and mathematics. After a slight examination, he studies for two more

years in the Academy, where he learns, as far as practicable, the theory and practice of architecture, and he copies the drawings of well known architects, and makes designs of his own, and where he also attends lectures on various subjects connected with his profession; after which he has to pass an examination to enable him to take the title of 'Bauführer,' or inspector of works. He then obtains, if possible, an appointment for three years as inspector or clerk of the works, and then studies for two years more in the higher branches of his profession, when he has to pass a final examination to enable him to take the title of 'Baumeister' or Architect. Thus, it will be seen, to enable a man in Prussia to become an architect, he has to go through a course of study for eight years, which is made compulsory by law.

In Austria the system is somewhat similar, but perhaps not quite so stringent; but this too is compulsory. Thus, then, it will be seen that the systems so elaborately treated of in the Architectural Association Report are really all compulsory by law or custom; and before we can hope to inaugurate any such system in this country, or fairly to raise the standard and position of the profession, we hold that it will be necessary to make our education not a matter of choice, but of necessity; and that every student of architecture, before being able to practise, shall be compelled, as in all other professions, to pass a distinct and definite examination. By what system or in what way it is desirable to gain the knowledge that will enable him to do this, is not our purpose now to discuss; but we do hope that the Institute will recognise the importance of the question, and draw up some proposal which may be submitted to all the Architectural Societies in England and Scotland for their approval and joint co-operation, and so that the whole body of architects and students may represent in proper quarters their claims to have such a charter as will place them on the same footing as the professions of Law and Medicine. It is not our intention in this article to discuss the many considerations that may fairly be urged to show why this should be done; but that the present anomalous position of the profession should be at once altered, would be, we venture to think, not only of enormous benefit to the profession itself, but to the public at large. That this much-desired consummation will take time to arrive at, we are of course aware; but the time has come when every man loving and respecting his profession should insist that it be put on a proper and recognised footing, and we naturally look to the Institute, as the parent society, after due and careful consideration, to take such steps as may, by the united co-operation and support of the whole of the societies in the country, bring about this end. It will be the fault of the committee now about to meet if something is not done, and we have every belief that they will fairly and conscientiously discuss the various serious questions in hand; and we have little doubt that they will have the cordial and unanimous support of every man in England, whether student, assistant, or practising architect.

Once let this end be attained, alteration and improvement of the present system of architectural education will of necessity follow, and in the mean time a *suggestive* course for the training and education of students could wisely be considered and issued under the authority of the Institute; for so soon as it shall be made compulsory for architects to pass an examination or be treated as quacks are in other professions, the studies of the student will, either by private or public teachers, be necessarily directed in such a way as will enable him to pass such examination.

In the mean time it may strongly be urged that preliminary steps, if the views here taken are supported by the profession, may be taken to forward such a system, the aim of which is the advantage and benefit of architecture as a profession; and it might be a question for consideration whether the Institute could not, after due notice, make it a matter of necessity for everyone wishing to join its body, except of course such as are elected honorary members, to have been articulated to an architect.

If possible let the Institute do this, and let it be urged upon all the various Boards of Works throughout the country to insist—as is now done by the Church Building Society, and we believe all diocesan societies, in any building coming before them—on proper plans and specifications being prepared by some competent architect. All these would, we venture to think, be steps in the right direction, and would tend to a more healthy tone of building throughout the country. We believe that such a course would gladly be accepted by the public at large, and be conducive to a better and more substantial style of architecture than that which at present pertains to the thousand and one speculative buildings run up and finished almost in a day, and which are a standing disgrace to the large cities and towns which they most affect. Let the question of architects' charges be also carefully considered; and although we would in no wise desire or expect any such question to be made absolute as the laws of the Medes and Persians, we hold that the architect should be paid according to the time employed in, and the class of work required to be done, and by the skill of the artist employed. It is, however, difficult to conceive a system more degrading to architects of education, or more open to painful suspicions of underhand meddlings with subordinate tradesmen, than the present tradesmanlike mode of remuneration by a percentage on the expenditure—a system which, as a writer in one of the early numbers of the *Quarterly Review* fairly says, 'seems to hold out a premium to increased outlay and extravagance.'

The time has come when all these questions should be looked

fairly in the face, and it behoves the profession to carefully and honestly take up these matters in a united and fair spirit, as affecting not only their direct interests, but their very well-being.

R. W. EDIS.

### AMATEUR CRITICISM.

WE live in a querulous age, when every matter of public import is sure to be met by question or complaint. There is nothing particularly hurtful in the prevailing disposition to criticise every subject which may arise either in politics, literature, or art: on the contrary, it only argues an increasing public interest in all that affects our moral and material progress. We are only too ready to admit that public discussion is essential to a condition of active progress, and mainly so because it tends to accelerate the accomplishment of much which is healthy and useful, while it often retards whatever is dangerous or unwholesome. At the same time one frequently has occasion to appreciate old Cobbett's description of criticism as 'a two-edged sword,' when one sees how often it recoils as severely on the critic as it strikes on his subject.

We verily believe that nothing is more acceptable to the great body of the reading public than well-weighed and skillfully expressed opinions on the various works of mind or matter in which the people are now so generally interested; but it surely follows that those who attempt to lead public opinion, especially in regard to presumed failures or successes in the technical arts, should, first of all, be able to bring to their work not only the powers of judgment necessary for genuine criticism, but the requisite skill which, while it satisfies those who know most, will not delude those who know least, of the subject which may be discussed.

We are led into this line of remark by an article which appeared a few days ago in the columns of a contemporary. It seems to furnish an apt illustration of much we have said. In treating of 'The New Law Courts' there are many ideas expressed in which we cordially join with the *Pall Mall Gazette*. At the same time we feel bound, in the interests of architectural art, to dissent strongly from the views by which the writer in that journal aims at influencing the question of the site and design of the New Law Courts. It is not uncommon, as we all know, to find opinions as to new projects advanced by abuse of works actually accomplished. The value of such criticism, however, obviously depends on the quality and character of the work reflected upon. In the present case the 'awful warning' selected by the *Pall Mall Gazette* is the New Houses of Parliament. We presume the writer imagined himself on pretty safe ground when he singled out that work for his caustic strictures; and mainly, no doubt, because it has become a kind of fashion among a certain class of casuals in criticism to speak of the Palace of Westminster as a work which, if not utterly devoid of taste and architectural design, is at least quite meaningless and useless for the purposes which created it.

It is not wonderful, therefore, if these views, smartly expressed in a popular journal, find many adherents, chiefly, no doubt, among those who know but little of the matter upon which they are asked to form an opinion. It is time, however, as we happen to think, that some protest should be made against this somewhat stale expedient of bringing in the Houses of Parliament as an example of all that is dreadful and dangerous.

So far as we can gather from the criticism of the *Pall Mall Gazette*, it is not the style of that building which is found fault with: otherwise there might, probably, be equally strong objections urged against the design accepted for the New Law Courts. The writer of the article in question boldly discusses the question of propriety and utility. Accordingly he asks us to 'imagine a visitor to London going to look at the Houses of Parliament, taking with him a general knowledge of the fact that the British Legislature comprises a House of Lords and a House of Commons. When he comes to Westminster Bridge, the first thing that he sees is an enormous tower with a very big clock to it. What, he asks, is that tower for? That is the clock tower. But what is it for? what is inside it? Most people of whom the question was asked would have to say that they had not the least idea!' In our opinion 'most people' would be quite content with the answer that this was a clock tower. And if, after all, it is desirable that a clock should be made visible, and its chimes audible for miles around in a city like London, it does not seem a very wild notion that it should be placed on a tower rather than against the wall of a three-storeyed building. If we take the merely architectural view of the question, we should like any amateur critic to tell us how many clock towers there are in Europe which can compare with that at Westminster. If a public clock is allowed to be a useless appendage to a building of this Imperial character, then the tower which carries it might well be reckoned as an absurdity. But we very much doubt if Londoners generally would endorse such an opinion. We never yet heard of any visitor to Florence, for example, being much staggered by the fact that the Campanile of Giotto had been reared to a great height. If some aerial device could be discovered by which the clock at Westminster might be suspended high up in air, the clumsy expedient of erecting a tower to carry it and its machinery might possibly have been avoided. But as constructive science is now understood, the complaint of the *Pall Mall Gazette* that 'an enormous tower' has been built to carry a clock rather vividly recalls the wail of that sapient correspondent in the columns of the *Times* some two or three years ago, who felt aggrieved that the spire of Chichester Cathedral had not been rebuilt, while all the money had been expended on the building of the tower!

This kind of criticism unfortunately extends far beyond the clock tower. The writer in the *Pall Mall* sees in every part of the Houses of Parliament features about which the visitor must be as curious as his guide is supposed to be puzzled. For instance, we are told that 'beyond the tower comes a long range of small windows several storeys in height. What, the visitor would naturally ask, are these? His guide would find a similar difficulty in answering, but he would probably make some remark about offices and committee rooms.' We heartily pity the unfortunate visitor who may happen to fall into the hands of such a guide as our critic

seems to have in his eye. There is no reason, that we can see, why there should be any vagueness in the remark that certain portions of a building required for offices and committee rooms are really designed for those purposes: the windows referred to may possibly be 'small,' but we suspect the writer in the *Pall Mall* would open his eyes if he were to measure them and compare them with those of his own rooms. We know well that many amateur critics continually get into their heads the delusion that because a building in its aggregate mass is very large, windows and doors must be on a corresponding scale. Those who study the art of architecture know that there is no such necessity. Windows, even in the most gigantic edifices, are usually intended to light what may be little more than ordinary sized rooms, while doors are usually designed for the ingress and egress of human beings. In neither case is it necessary to make extraordinary sized windows or huge doors, simply because they occur in a building whose whole mass may be very extensive.

Our contemporary makes indeed but a feeble point of the last quotation, probably feeling that if, after all, 'offices and committee rooms' were really required, it is well they should be really supplied in the building. The Victoria Tower seems to be the feature which brings the greatest disgrace on the Houses. The critic we are quoting indulges the conjecture that the same intelligent guide will inform his unhappy companion that this 'is a very splendid structure, the purposes of which are utterly unknown.' Now the Victoria Tower is, beyond all question, next to the Dome of St. Paul's, the finest architectural feature of the metropolis. It is difficult to understand why such a work reared in connection with a building representative of our national state should fall behind the principal feature of a building erected in the age of Queen Anne. There is surely the principle of *noblesse oblige* to be expected in great national works. Many things are right to be done when a powerful and wealthy nation undertakes to express its character in its monuments, which would be folly and extravagance in a small community. If mere utility guided every conception, the world would possess little or no history of art whatever. If the Victoria Tower of the Westminster Palace, the most national building of our time, a type of the royal state, is to be held simply as a splendid structure, the purposes of which are utterly unknown, it is, at least, difficult to discover what argument could justify, in another and less prosperous age, the erection of so splendid a structure as the Dome of St. Paul's.

With a similar fatuity of criticism the writer in the *Pall Mall Gazette* finds a blunder in the fact that the two Houses, of Lords and Commons, are placed quite *inside* the building. It would, as we believe, have been simply ridiculous to push the two Legislative Chambers on a street, or even river front, where their very uses would have been invaded by the din and traffic of a London thoroughfare. The two chambers are simply the kernels of two very thick shells, and no conception for such apartments could have so aptly suited their character and purpose.

The article we allude to concludes by a fair advocacy of the claims of Mr. Edward Barry to a share in the buildings connected with the Palace of Justice. It is not a little startling to find the claims of a son to a particular work advanced by a disparagement of the work of the father. We hope soon to hear the last of this cheap amateur criticism, which affects to discover nothing but failure in a building which is not only an honour to our own country, but is admitted by all educated foreigners to be a credit to the age. The kind of criticism we have been treating of is all the easier to a ready writer where the work reviewed is of a noble extent and quality; and in spite of it we will continue to entertain the wish, in the interests of modern architecture, that we had more architects like Sir Charles Barry.

### MEMOIR OF ARTHUR ASHPITEL, F.R.I.B.A., F.S.A., &c.

BY WYATT PAPWORTH.

THE Architectural and Archaeological world will not easily repair the loss of such a member as Arthur Ashpitel, whose decease occurred last week.

He was born about December 15, 1807, the eldest of six children of William Hurst Ashpitel, of Clapton, who retired early in life from practice as an architect and surveyor. At about twelve years of age, when the boys at school were as vehement partisans as their parents in the matter of Queen Caroline, he was engaged in a playground strife of parties upon her case; and, being thrown, had one leg so much injured as to be lame for the remainder of his days. Thence, considering himself to be a confirmed invalid, his active and intelligent mind saw the necessity for study. Dr. Burnett grounded him well; and, as his illness prevented him from going, as intended, to college, his own talents with industry completed the superstructure, rendering him a good scholar; while an excellent memory assisted common sense in making him a learned man on many subjects. He had some acquaintance with Hebrew, translated Greek with facility, was critical in Latin, spoke French and Italian, and had perused carefully the characteristic literature of England of all periods. The extent of his reading, and part of the use which he made of it, may be judged by the numerous communications signed 'A. A.' in *Notes and Queries*, which, if collected, would form of themselves a very interesting volume. His metrical compositions in Latin, and English, as in the *Owl*, rose above mere versification; but for the amusement of his friends (especially the 'Cocked-Hat' antiquaries) he wrote doggerel, and sometimes printed it. He played well on the piano-forte; and, having studied the complications of Thorough-base, was able to improvise an accompaniment or a fantasia. His creative faculties, however, were less directed in the fine than in the industrial arts: although he had as keen an appreciation of the beauties of nature as he had a quick sense of the ludicrous and sarcastic, yet painting and sculpture were not such familiar subjects in his talk as the rites of a printer's chapel, the mysteries of a shipbuilder's loft, the management of an estate, or the manoeuvres of a builder's workshop. To sail a cutter, or to snap at a rabbit, were recreations which suited his infirmity, and in which he was enthusiastic.

One of his earliest works in architecture, after establishing himself at

No. 5, Crown Court, Old Broad Street, was in 1845, when he designed the church of St. Barnabas, at Homerton, built at a cost of about 4,400*l.*; to which he added in 1848 the parsonage, and in 1852 the north aisle and vestry, at a cost of 1,200*l.* To his use of the Kentish rag-stone for these works may be ascribed his intimacy with a brother professional, Mr. John Whichcord, son of the late Mr. Whichcord, of Maidstone. He designed the Hutchison Markets, and the Palace Tavern in Gravel Lane, erected on the site of the Old House, which had been the residence of Count Gondomar while ambassador to the courts of Elizabeth and James I.; executed works to the amount of 2,500*l.* at the London Orphan Asylum at Clapton; and designed the Wellington Testimonial erected at the Southwark end of London Bridge, which was taken down under the pretence of its being an obstacle to the traffic, 1867-68, since which time the footway that was around it has been considerably enlarged in area, so as to lessen the carriage-way. He entered into partnership with Mr. Whichcord at No. 8, Carlton Chambers, Regent Street, removing in 1852-53 to Poets' Corner. Amongst their joint works they designed Baths and Washhouses at Maidstone, at Lambeth, at Bilston, at Tynemouth, and at Kidderminster; Kent Ophthalmic Hospital, Kentish Chronic Lunatic Asylum, Kent Infirmary, and Kent Asylum Chapel; the church erected among the ruins of St. Dogmael's Abbey, near Cardigan; churches at Blackheath, Platt, Postling, and Vernham Dean; Godmersham and Teston bridges; schools at Bexley, Milton, Rainham, and Pontardawe; Cranbrook Union; parsonages at Maidstone, and at Lamberhurst; with several villas; all these works, with others, were collected in a picturesque manner into a large drawing, and exhibited in 1855. Subsequently Mr. Ashpitel was engaged on designs for schools at Lea Bridge, near Clapton; the Gravel Pit Chapel at Hackney; model cottages for superior artisans at Hackney; the churches at Ripple, near Deal, in Kent, and at Aldborough Hatch, in Essex; the restoration of the church at Sutton, in Kent; the schools, costing 1,680*l.*, for 650 children of Holy Trinity district at Hoxton; and a vicarage, with the enlargement of the church built about 1825, and a new tower, at Great Ilford in Essex; and the Gothic front in stone of a public-house in Redcross Street in the City; besides the drawings for a church at Oamaru, in New Zealand, to be built of wood, plastered between the timbers and to be roofed with shingles, so that his practice was Pointed or Classic, as he thought might be appropriate. He aided Mr. E. M. Barry, R.A., in hunting up the authorities according to which Charing Cross was reproduced at the Terminus in the Strand; and with Sir Charles Barry's sanction, he designed the ornament cast on the Westminster bell, so familiarly known as 'Big Ben.' His design for the restoration of the church of St. Margaret, Westminster, has been under consideration since 1860. Any list of his many executed designs for fountains, sepulchral memorials, and occasional decorations, is beyond the scope of this notice.

Two studies which specially evinced his artistic talents were 'Selections from Palladio,' made 1860; and a design (1851) for rebuilding Blackfriars Bridge, and throwing open the west front of St. Paul's; they were surpassed by the two splendid drawings printed by Messrs. Koll a few years afterwards as chromolithographs, with a small explanatory pamphlet. These were 'Ancient Rome,' being a view from the terrace of the Imperial Palace on the Palatine, looking along the Forum as he imagined it should be restored; with 'Modern Rome' from the same eminence, but looking a little more across the Forum; these drawings were carefully made from studies when at Rome (for he visited Italy after the death of his father, which occurred 20 April, 1852), and were exhibited respectively 1858 and 1859. As he became in some degree familiar with the characters and phrases occurring in the manuscripts of the sixteenth century in Italy by his extent of reading during 1853 and 1854 in the Italian libraries for the purposes of his enquiries for the restoration so shown, he was invited to examine the mass of architectural drawings in the Royal Library at Windsor Castle: his manuscript notice of its contents was graciously accepted by the Prince Consort. In that collection was a plan of the remains of an edifice which had covered a space equal to three times the area of Westminster Hall, and had been half as high again as that structure: Mr. Ashpitel was so much impressed with its value as a very old record of the Basilica of Constantine and Maxentius at Rome, that he carefully studied these materials for his drawings in restoration of the exterior and interior; these were exhibited respectively in 1864 and 1865.

As a member (elected 1851) of the Royal Institute of British Architects, he served on the Council and as Vice-President, besides acting on various committees; during several years he usually presided, and took great part in the preparation of the questions to be put to the candidates, at each meeting of its Board of Examiners of candidates for certificates of competency to act as district surveyors under the Metropolitan Building Act. When the request made by the Architectural Association for a Voluntary Architectural Examination was propounded, 1860, by the Council of the R. I. B. A. in a form not quite acceptable to the members of the Institute, a committee was appointed to investigate the subject; the services of Mr. Ashpitel as chairman of that committee were not confined to the duties of attendance at its numerous meetings, for his personal acquaintance with gentlemen officially connected with other public examinations procured to the committee the results of their experience; and when, out of the rather discordant schemes which are understood to have been proposed, one was issued that secured the adhesion of all the advocates of such an examination, its appearance was due in great part to his example of that forbearing compromise of unessential points which is so necessary in the conduct of public business. His influence with those whose dislike to a 'diploma' rendered possible the rejection of any scheme of examination, as well as with those who thought that examination would not be acceptable without the 'diploma,' offered an opportunity for his reconciliatory powers. The ultimate adoption of the Committee's plan may be fairly ascribed in great part to his subsequent energetic advocacy of it. After that point was gained he compiled the 'Sketch of Form of Examination Paper,' with the attached remarks; and cleared the way for his colleagues, Messrs. G. G. Scott, R.A., and M. D. (now Sir M. D.) Wyatt, in the labours of the first Examination, 1863. The report by the Examiners on that occasion, and also by himself, with Messrs. Scott and T. H. Lewis as Examiners, 1864,

and also by himself, with Messrs. E. Nash and J. W. Papworth, 1866, as Examiners and as Revisors of the regulations, show that, amongst many who talk much and (more or less) well on the subject of the education of the young architect, the rising generation has found none of its seniors more liberal, more helpful, more earnestly practical, than Arthur Ashpitel. Had his life been prolonged, it may be safely said that any indifference to those efforts which the younger members of the profession might show in not availing themselves of the Examination would have been the means of vexing his declining years by an ingratitude that might discourage his successors in the cause of professional education. His evening on 'Masons' Work and Masonry' with the members of the Examination class in the Architectural Association will not be forgotten by those who were fortunate enough to attend it.

When Mr. G. G. Scott's idea of a 'School for Artistic Architectural Education' was borne from the Architectural Association to the Council of the Institute and other bodies for co-operation, Mr. Ashpitel was one of those who were requested by the Council to act on behalf of the Institute. In this matter also his services as chairman were given with zeal and tact. If his dislike to pushing aside another had been conquered, and if his health had not been attacked, there is reason to believe that something like progress with the plan, which obtained the title of the 'School of Art Accessorial to Architecture,' would, ere this, have occurred. Mr. Ashpitel's disbursements in professional matters should not be forgotten: for example, the existence of the Architectural Exhibition, 1850-60, was secured by the guarantee of his providing the funds, as treasurer, without care that the balance was a chronic deficit on the part of the Exhibition. The subscription lists for many other purposes connected with art and science attest the liberality with which he used his income.

The 'Sessional Papers' of the Institute contain an Essay, contributed in 1857 by him, very much in consequence of Commendatore Canina's request that he would propound in England the views of the Italian antiquary 'upon the different theories respecting the Forum at Rome;' and another in 1860, on the 'Origin and Development of the use of Crypts in Christian Churches from the earliest periods.' His observations during the discussion in 1861 on 'the Mode in which Light was introduced into the Greek Temples' forms almost another paper; and in 1862 he supplied the notes 'on the Italian architectural drawings found at Windsor,' already mentioned. His address, November 23, 1862, to the Architectural Association on the Voluntary Examination was printed at his own expense for circulation among students. In the 'Archæologia' of the Society of Antiquaries, to which he also belonged, he contributed in 1857 a paper 'on Choirs and Chancels, particularly as to their use in Southern Europe;' and another in the same year, 'on the City of Cumæ and the recent Excavations there.' To the British Archaeological Association he gave in 1845 a paper on the 'History and Position of Organs in Churches,' as well as 'Suggestions upon Chancels;' and to its 'Journal' the following discourses, delivered at the annual meetings: 1849, 'on Worcester Cathedral;' 1850, 'on the Cathedral;' and 'on St. John's Church, at Chester;' 1851, 'on Manchester Cathedral;' 1852, 'on the Priory and Church at Repton;' and 1854, 'on Newstead Abbey,' as well as 'on the Castle, the Cathedral, and the Church of All Saints at Rochester.' The interest of these discourses was heightened by original research for the purpose, in the British Museum and elsewhere, among mediæval documents. Amongst his avocations he found time for the description of a vase engraved in C. J. Richardson's 'Studies of Ornamental Design,' 1849-51; for re-writing Nicholson's 'Handrails and Staircases,' in 1851; for the essay on 'Baths and Washhouses,' 1853; for another essay called 'Town Dwellings,' advocating the erection of fireproof houses in flats, 1855; and for editing Nicholson's 'New Guide, or Book of Lines, for Carpenters, geometrically explained,' 1857. In 'The Fine Art Quarterly Review' appeared notices by him of C. Texier and R. P. Pullan's 'Principal Ruins of Asia Minor,' 1866; and of G. E. Street's 'Gothic Architecture in Spain,' 1867. The key to the plates of 'Ancient and Modern Rome' already mentioned was printed 1866; and in the following year appeared his edition of the 'Treatise on Architecture,' extracted by the proprietors of the 'Encyclopædia Britannica' from that work, and originally passing under the name of the late W. Hosking, whose treatises on 'Architecture,' on 'Building,' and on 'Construction' still form, with T. Tredgold's on 'Joinery' and on 'Stonemasonry,' and T. Young's on 'Carpentry,' and J. Robison's on 'Roofs,' on 'Arches,' and on 'Strength of Materials,' the staple of the edition; but Mr. Ashpitel, besides revising (to such extent as was allowed) those treatises, supplemented them with the sections on 'Egyptian, Jewish, and Assyrian Architecture,' adding a chapter on 'Indian and Chinese Architecture,' with a 'Glossary of Terms used in Mediæval Architecture,' and also supplemented the articles on 'Acoustics,' 'Joinery,' 'Roofs,' 'Stonemasonry,' etc., to bring their information down to the present time; and he supplied the material for numerous additional plates of illustrations. The discretion of the proprietors was perhaps less shown in repeating the issue of these stereotyped materials than in their selection of him to succeed Lord Macaulay in writing several biographical articles, as those on Vanbrugh, Wren, Wyatt, and Wykeham; in the last of these he adhered to the traditional view of his subject. His contributions to the 'Architectural Publication Society' commenced 1853 with the 'History of Ancient Baths, and their Development in the Modern Baths and Wash-houses.' He supplied to its 'Dictionary' another essay on 'The Manufacture of Brick,' and from that time (1855) to within six weeks of his death that work received his zealous assistance as a contributor, and his earnest cooperation as a revisor; he seldom returned a proof-sheet without two or three foolscap pages of criticism and suggestion, besides affording, at any time, the advantage of two or three hours' discussion on points that seemed to require particular consideration; his pleasure in the progress of that work was evinced by his even pencilling his notes whenever, unable from weakness to leave his bed, he could not write in ink. The assistance which he gave to other Societies and Literary Journals must be recorded in some more elaborate memoir.

He spoke with precision and fluency in public. The elegance of each step of his mathematical investigations was remarkable. The bent of his inventive faculty seemed to be to a rapid application of his familiarity with



technical details; in his numerous professional cases and important arbitrations that accomplishment made its effect apparent; while his knowledge of theoretical and practical construction in building was highly prized. Professors of the various sciences found in him a conversable companion, who understood their terms and phrases, and could give valuable assistance in an adjudication upon a theory, an experiment, or an operation. Lively in general society, his most joyous moments never went beyond the limits of a becoming mirth; and the indelicate topics of the day were treated by graver men with less modesty than by him. In a professional and private intercourse with him for twenty years, the only circumstance that seemed really able to provoke him was a misrepresentation of his views. Almost all who knew anything of him were aware of the acquaintance existing between him and Mr. Edmeston, which nearly dates from the time when Mr. Ashpitel first went to Crown Court to practise. Mr. Edmeston was observing last week that he had, for about twenty-five years, been in the most confidential and friendly relation to Mr. Ashpitel, although for many years disconnected with him in business, and could say, on quitting the bedside just before the final attack commenced, that exceeding kindness of heart, great disinterestedness, and a disinclination to speak ill of any one, were main features of the character which had so long been subject to Mr. Edmeston's close observation. His movements were gentle, partly regulated by his lameness; and his considerate treatment of animals caused cats and kittens to be familiar occupants of his studio; so that it is not wonderful that when such favourites in Canina's library at Rome (for the Commendatore had a similar partiality) had found their way on to Mr. Ashpitel's knee and shoulders before he had finished telling the object of his tour, that renowned Italian archæologist was prepossessed in favour of his visitor. Neither of the two antiquarians, when wishing, in the warmth of conversation, to refer to a valuable drawing upon which a large white cat was asleep, appeared inclined to wake it by removal; so Canina smiled and suggested that the Englishman must return the very next day, when that drawing, and Canina's collections, and Canina himself, should be at his disposal. The liking was sure to be mutual; and between Canina and Emil Braun, hotly disputing, Mr. Ashpitel stood on each spot in Rome that interested the trio. Of course it will not appear surprising that, when the Italian worthy accepted Professor Donaldson's invitation to his house for his visit to England in 1856, Canina seemed, day after day, to prefer to every other bachelor's 'receptions' the library, the pets, and the piano of one who was so much his *confrère*, which were aided, as Mr. Ashpitel's receptions ever were aided, by a liberal and considerate, though unpretentious, hospitality. He liked to get committees to meet at his house.

The effects of the fever and ague which attacked him at Airole in Piedmont during his return from Italy never entirely left him. Energetic in rendering assistance in the matters in which he interested himself, he did not pay sufficient attention to his delicate constitution: his health, therefore, caused much anxiety to his relatives and friends. Early in last year he took up his residence, first at Reigate, and then at Ramsgate, whence he was brought home in the autumn in the very weak state from which he never rallied. He died on the afternoon of the 18th, and was interred on Monday last in the family vault in Hackney churchyard. A medallion head was executed at Rome by Sig. Amici, and a very successful photograph portrait was taken not long since for exchange among the members of the Surveyors' Club, to which he belonged for many years.

### OBITUARY.

The late Mr. George Smith, Surveyor to the Mercers' Company, whose death took place on January 5, was born on September 28, 1783, at Aldenham, Herts. He was articled to Mr. Brettingham, afterwards was clerk to Mr. Alexander, subsequently to Mr. Beazley, and he eventually settled in business for himself in the neighbourhood of St. Paul's. He was appointed District Surveyor of the southern division of the City in 1810, and was elected Surveyor to the Mercers' Company in 1814; both these appointments he held till his death. He formerly held the office of Surveyor to the Coopers' Company, but this he resigned to take his place in the Court, and he served the office of Master twice. Among his works, as an architect, may be mentioned St. Paul's School, New Corn Exchange, the tower and entrance of the Old Royal Exchange, the Whittington Almshouses at Highgate, the Church in Blackheath Park, Hornsey Church, except the tower, Gresham College, and the Mercers' School. He was a member of the Royal Institute of British Architects, of which society he was elected a Fellow in 1834; member of the Surveyors' Club from the year 1807; and a Fellow of the Society of Antiquaries. He had recently built for himself a house, 'Newlands,' at Cophthelm, in Sussex. During his long professional career Mr. Smith had earned and obtained the esteem and confidence of all who knew him or had to enter into business relations with him, and his loss will be sincerely regretted by very many.

**Max Lohde, the Fresco Painter.**—The subject of this brief memoir was born at Berlin on February 13, 1845. He was a pupil of Schnorr von Carolsfeld at Dresden, and afterwards an improver in the studio of another well-known fresco painter, Peter von Cornelius. In 1866 Lohde gained the Berlin Academy prize for a design depicting the last scene of Schiller's 'Bride of Messina,' and then applied himself to the study of Sgraffito, following Semper's able leadership in the art. At the early age of twenty-two Lohde was commissioned to execute the frescoes in the grand staircase of the Gymnasium at Berlin, and in six months produced the four large compositions which now decorate those walls, and which have for their subjects scenes taken from the Iliad. His next work was the fresco in the gables of the new riding school of the Prussian War Office, the subjects being 'A Chariot Race in Olympia' and 'A Fight of the Centaurs and Lapithæ.' Upon the suggestion of the Minister for Commerce, Lohde was then offered the means to study in Italy, whither he went in June last; but the hopes which the art lovers of Prussia had entertained were not to be realised, for at Naples this promising young artist fell a victim to typhus fever on December 18 last.

The Prussian Government have taken steps to collect and preserve the sketches of one who, had he lived longer, would have been one of the greatest fresco painters of the age.

On January 3 died at Stockholm an architect well known and honoured in that city. Mr. Axel Nyström was Hon. and Corr. Member R.I.B.A., a member of the Imperial *Académie des Beaux Arts* of Paris, &c. &c., and attained the age of 75.

The Death of Sir William Newton is announced. The deceased artist was a celebrated painter of miniatures, but the introduction of photography considerably lessened his popularity. He received the honour of knighthood in 1837, and was born in 1785 or 1786.

### MR. TITE ON THE NEW LAW COURTS.

At the usual meeting of the Metropolitan Board of Works held on January 22 at the office in Spring Gardens, Sir John Thwaites in the chair,

Mr. TITE moved the following resolution with respect to the Site for the New Law Courts.

'Whereas it appears by certain public documents emanating from the Commissioners for building the New Courts of Justice that the actual cost of the site purchased in the Strand will amount to 785,000*l.*, and that the additional land now proposed to be purchased, according to Mr. Pownall's estimate, is 668,000*l.*, so that the total cost of the ground will be 1,453,000*l.*, and the expenditure on land and buildings together, as appears from the same document, will be 3,250,000*l.*, of which 1,395,150*l.* is proposed to be advanced by Government, at 4 per cent., on the security of a redeemable annuity; and whereas the Equity, Common Law, and other courts could easily be accommodated on the site already purchased by the Commissioners, the Probate Court, Masters' and Registrars' Offices could be placed on the site afforded by the Thames Embankment, with such supplementary acquisitions as the nature of the proposed buildings may require, by which means a considerable reduction would be effected in the cost of the land to be taken, and a position would be obtained superior to any, in regard to free circulation of air, unimpeded light, and in the facility of access by road, river, or rail; that it be referred to the Works and General Purposes Committee to consider the extent required for the suggested buildings, the area at present at the Board's disposal, and what additional property would require to be taken adequately to provide for the several offices enumerated, and that the committee be authorised to confer with Her Majesty's Government as to their willingness to negotiate for the acquisition of such a site for the purposes above indicated.'

In bringing forward the motion, he said he owed the Board some apology for having done so, but being confined at home by illness, and having some desire to see the embankment of the Thames continued on to Chelsea, and turning to the necessity for the Board obtaining funds for important public improvements, it led him to consider whether the Board could not advantageously dispose of some of its surplus land. He therefore saw their chairman upon the subject; and without going into the question as to whether or not it was an appropriate site, he found that selected by the Commissioners for the new Courts of Justice would entail a cost for its purchase of no less an amount than 785,000*l.*, and that the supplemental land that would be required would bring up the amount to 1,453,000*l.* This was a matter in which the public were deeply interested, but he (Mr. Tite) had no particular interest in the matter, because the money required for the land would be found by the Treasury; but it made him recur to a suggestion he made in the House of Commons some time ago, that some of the buildings should be placed on land belonging to the Metropolitan Board of Works, and such as they could spare on the Thames Embankment. He applied to the chairman (Sir J. Thwaites) to give him all the information he could upon the subject, and the result of his inquiries was the plan that was then before them. It was a great mistake to suppose that the Metropolitan Board of Works had any great amount of vacant land on the Thames Embankment, as the principal part of it had already been disposed of. At Blackfriars Bridge the land taken from the river had been given to the gasworks. The next piece was of very little value, but that following it, 800 feet long, had been allotted to the Temple for the actual or imaginary damage done to them for taking their water frontage. They then came to a piece of land of 350 ft. in length, which was at their disposal, and was to be appropriated to a station for the Metropolitan District Railway. The next land extended to Somerset House, where there was nothing to deal with; but between Somerset House and Hungerford Bridge there was a large space next to that, tinted blue on the plan, which was given to the Crown in exchange for the foreshore of the river. He then came back to the suggestion he made in the House of Commons, that, as he had been assured by a very competent authority that the land already obtained for the new Courts of Justice would be insufficient, and not equal to their wants, they should go again to Parliament for additional land marked red on the plan, unless they were to put some portion of the offices in connection with the Law Courts on the Thames Embankment. He would state a few facts on the plan which was then on the table. The land already purchased would cost 785,000*l.*, and the additional land proposed to be acquired would cost about 668,000*l.*, so that altogether the site according to the estimate, which was a very

different thing from the actual cost, would be much more than a million and a-half sterling. Then they were to take the buildings, architects' fees, furnishing, &c., which would bring up the total cost to three and a-quarter millions, of which sum 1,395,000*l.* was to be advanced by Government at 4 per cent. on the security of a redeemable annuity. About an acre on the Thames Embankment might be appropriated to some of the offices, for it would be advantageous that they should be divided from the general business of the Law Courts. For instance, persons who came to examine wills in cases before the Probate Court would be in the way, although it was necessary that the courts should be so situate that access should easily be had to barristers attending to them. Mr. Tite here quoted a very strong opinion corroborative of his own from the *Pall Mall Gazette*, written, as was supposed, by one of our leading barristers, showing that such a division was most desirable. Having alluded to the plan of Sir Charles Trevelyan, who had brought to bear a great amount of intelligence and talent, which had made a great impression on the public mind, he had proposed that the site should be changed, and that it would be a great mistake to put the buildings on the site selected in the Strand. His plan was that they should put the buildings on a site near the Thames Embankment, but that would not take a single foot of the land that the Metropolitan Board of Works might have to sell, as it kept all the buildings beyond the Thames Embankment line, although it would have a frontage towards the Thames. After a few other observations, the hon. member concluded by submitting the motion he had proposed.

Mr. PHILLIPS wanted to know whether the Board was not prevented by Act of Parliament from building on any portion of the Thames Embankment.

Mr. LE BRETON said he should move an amendment, but it was not hostile to the motion which had been proposed by the hon. member (Mr. Tite). He thought there were certain offices which might be separated from the Law Courts, such as the large offices for the deposit of wills; but they, as the Metropolitan Board of Works, could hardly at once agree to the disposal of the surplus land. He moved an amendment, which was as follows:—

'That it be referred to the Works and General Purposes Committee to confer with Her Majesty's Government and the Law Courts Commissioners as to the acquisition by them of any land which can be obtained on or adjacent to the Embankment for the purpose of affording additional space for any law offices which it may be deemed expedient to erect thereon.'

Mr. COOKE protested against any portion of the Thames Embankment being built upon. They had got a small open space and a few green trees, and he, for one, would say he would never consent to any buildings being placed on those open spaces which they had obtained with so much difficulty.

Mr. NEWTON supported the motion, and said that the Embankment was at present fringed by some of the worst houses in the metropolis, and it would be a great improvement if large, stately buildings were erected that would harmonize with the external appearance of Somerset House. As to the prohibition of buildings on the Embankment, that was done to prevent the erection of shops and other buildings of that class, but would not apply to such erections as would be in connexion with the Law Courts.

Mr. FREEMAN also supported the motion.

Mr. TITE expressed his willingness to accept the amendment of Mr. Le Breton, and withdrew his motion in favour of it.

The motion so substituted was then put and agreed to.

## BUILDING CONTRACTS.

BY A LONDON CONTRACTOR.

**A** MOVEMENT has been set on foot by the builders and contractors of London and the principal provincial towns, having for its object the revision of some of the clauses usually inserted in building contracts and specifications of works. Some alterations are also suggested in other details of the business in which architects and builders are mutually engaged. The object of the present article is to explain the questions which are, it is to be hoped, rather under discussion than in dispute.

The authorship sufficiently indicates that this Journal is not to be considered as necessarily committed to the views now put forward.

The first suggestion made by the builders is that the 'general conditions of contract' now usually attached to the specification of works shall, for the future, be kept distinct; that the specification shall include only the detailed description of the work to be done; and that all clauses containing legal powers or liabilities shall be transferred to the 'contract.' In a very great number of cases a description of the work on the one side, and a letter undertaking its execution for a stated sum on the other, are all that is required, at any rate between parties having a knowledge of, and confidence in, each other. Where anything more is necessary, the edged tools of the law should not be meddled with by the uninstructed hands of architects and builders. The one in preparing and the other in signing the clauses now usually adopted are in most cases profoundly ignorant of the full legal bearing of the words and

forms employed, or of the vast importance of others that are omitted. Probably few architects are aware that unless they are made parties to the contract between their client and the builder, or in the absence of a special clause in the contract bearing on the point, the builder has absolutely no power at common law of obtaining redress should the architect, through infirmity of temper or judgment or from collusion with his client, refuse to issue his certificate. Whether a court of equity could or would interfere is, in the opinion of an eminent Chancery barrister, extremely doubtful; but it may be safely assumed that a less formidable remedy would be satisfactory to the great majority of the architectural profession. Again, are there many builders who know that in contracts where the payment is to be made on completion, unless there is a provision for suspending the works, they will be compelled to complete the contract, however large, before a debt will have been created, although in the mean time they may have become aware of the insolvency of the employer?

That all points in contracts having reference to legal questions should be settled by the lawyers, and not the architects, of the parties interested, appears so reasonable a proposition that the foregoing illustrations seem hardly required to enforce it, were it not that daily experience shows in how few cases it is acted upon.

It will be admitted that in drawing up an ordinary contract, the builder, on the one hand, must not refuse to secure to his employer that the work agreed upon shall be properly executed for the stipulated sum, and it will no doubt be equally admitted, on the other hand, that he must be protected from the employer seeking to obtain any excess in quality or quantity over the work described. Further, the punctual payment of the amounts agreed upon must be secured; and, lastly, all questions not foreseen or provided for should be settled on terms equitable to both sides. With these principles as a guide, there should be little difficulty in deciding on the merits of any particular clause.

One of the most prominent clauses objected to by the contractors is the one referring to orders for 'extra works.' In its most objectionable form, it provides that no 'extras' will be allowed unless an order in writing, headed 'extra work,' signed by the architect, the employer, or both, shall have been given previous to the execution of the work, and that drawings shall not be considered as orders. The sting of this lies in the words 'previous to the execution of the work.' It may well be doubted whether it is fair to insist that the contractor shall know all the details of the work sufficiently to detect at once from a working drawing that it is in excess of the agreement, and that, if the builder unwarily carries it out, no charge can be made, or that an employer may repudiate the payment of work for which only a verbal order may have been given; but there can be no doubt as to the injustice of making it possible that, where a builder shall have executed work in accordance with the instructions of the architect, sanctioned by the employer, the employer shall be able to refuse payment on the ground that the written order was not given 'previous to the execution of the work.' And yet this clause is in frequent use and has been frequently acted upon. The builders, therefore, urge that every contract should provide that the authority of the architect for extra, altered, or omitted works, shall be sufficiently evidenced by any order or subsequent approval in writing signed or initiated by him, or by any drawing furnished by him.

With reference to the clause respecting undefined works, the builders consider that they should not be bound to execute within their contract price works not shown on the drawings or mentioned in the specification, but necessary to complete the buildings as intended, unless the same can be fairly and obviously inferred from the drawings and specification. In the absence of this latter qualification a contractor may find himself legally bound to execute, without payment, additional works not contemplated either by himself or the architect, and payment for which the latter, however justly disposed, may be powerless to obtain for him, because it must be borne in mind that an arbitration clause, unless very wide, will afford no remedy, nor will a condition that questions are to be left to the architect to decide, as his decision must be based upon the terms of the contract.

With one signal exception the remaining clauses which are now called upon to justify their *raison d'être* are not of sufficient importance to warrant the space which their discussion here would occupy. That exception is the arbitration clause, which will be the subject of a subsequent notice.

## ILLUSTRATIONS.

### ST. PETER'S CHURCH, HEDENHAM, NORFOLKSHIRE.

The whole church has been restored and rescaled. The chancel has not been rebuilt, but the roof is entirely new, and the reredos and stalls shown in the drawing are new. Our view represents the chancel looking east. The new works have been designed and superintended by Mr. E. J. Tarrer, A.R.I.B.A.

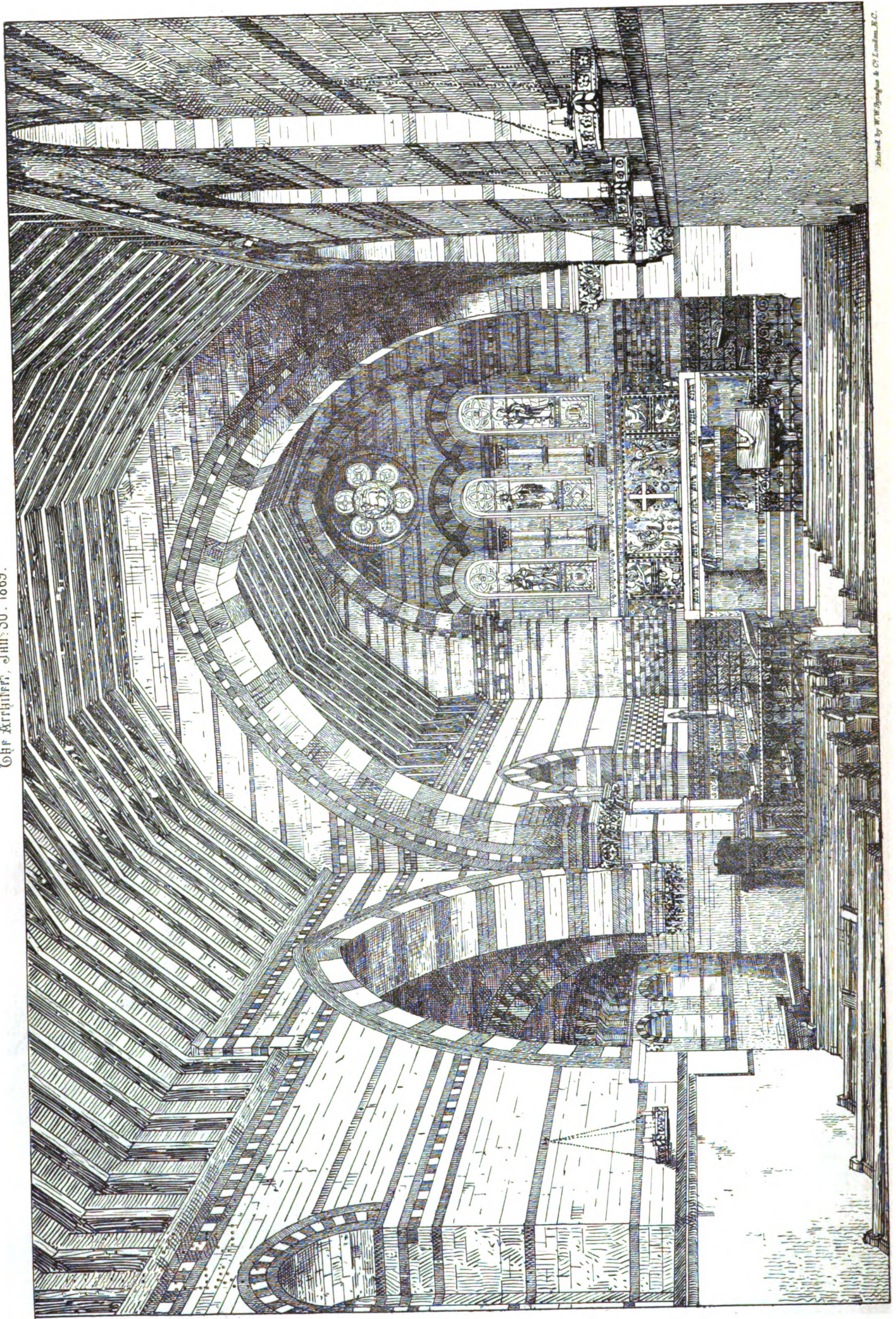
### ALL SAINTS' CHURCH, UPPER CALDECOTE, BEDFORD.

This church (of which we give an interior perspective view, showing the chancel) has been erected from the designs and under the superintendence of Mr. A. W. Blomfield, M.A. The chief interest which attaches to the church arises from its success as a work of art, and the very moderate amount of its cost. For a sum extremely modest

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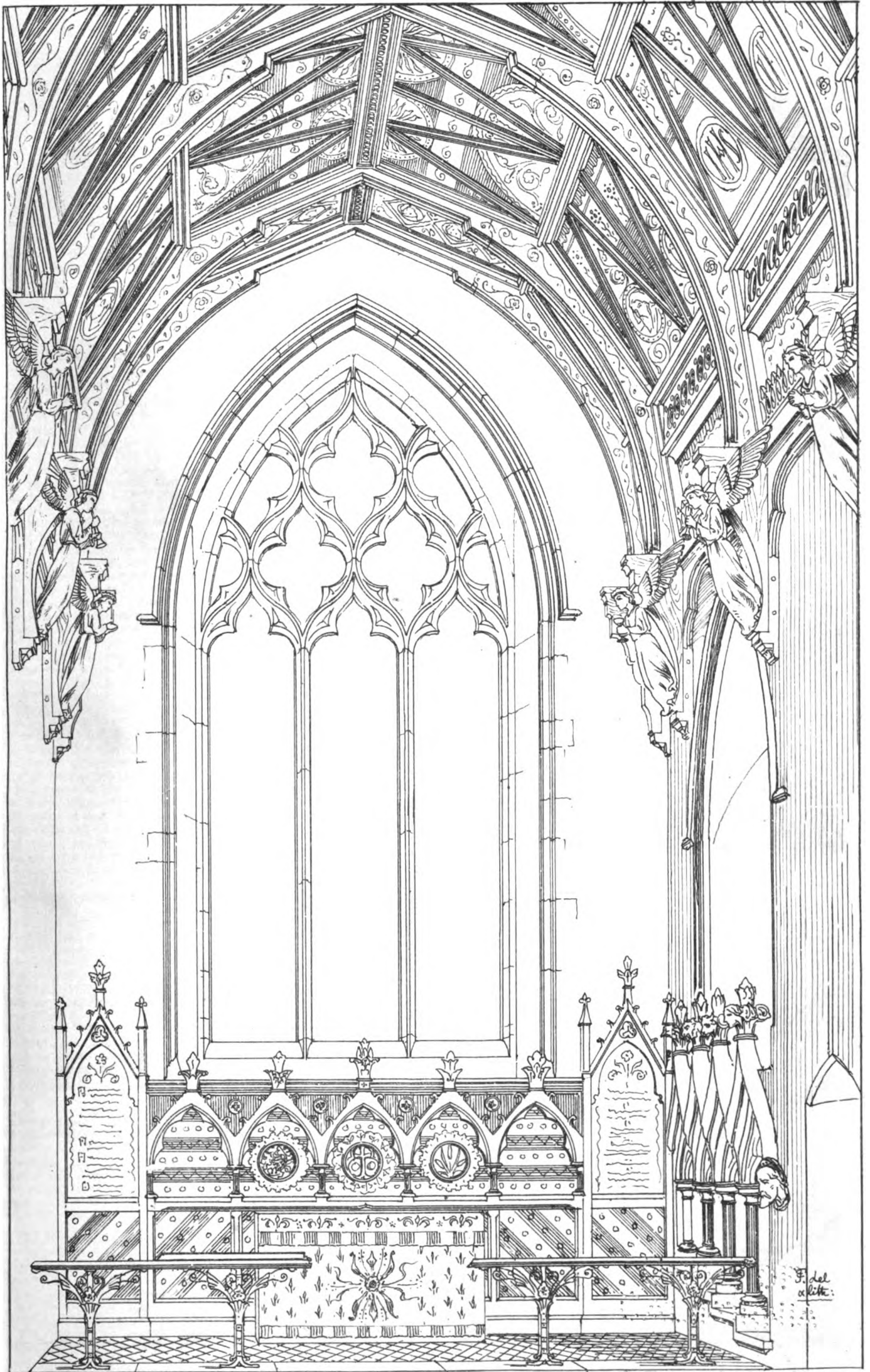
The Architect, June 30<sup>th</sup> 1869.



Engraved by W.W. Symonds & Co. London, E.C.

All Saints Church • Upper Calderote • Bedford • A. W. Blomfield, M. A. Architect.





Printed by W. W. Spangue & Co. London, E.C.

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when reckoned at so much per sitting, or when looked at as the cost of a complete church, Mr. Blomfield has succeeded in producing a building which, as our illustration shows, has good claims to be looked upon with admiration.

The proportions of the church are not lofty, and the materials are chiefly brick, stone being very sparingly introduced. Coloured decoration has been to some extent employed to heighten the effect of the chancel, and, though not spread over a large surface, yet combines well with the simple patterns produced by the use of bricks of different colours. This design is a good example of that class of church which is often called for where means are narrow, and at the same time a certain amount of beauty and grace is indispensable.

## SOCIETIES.

### The Institution of Civil Engineers.

JANUARY 12, 1869.

Charles Hutton Gregory, Esq., President, in the chair.

The paper read was 'On Coal Getting Machinery, as a Substitute for the use of Gunpowder,' by Mr. C. J. Chubb.

It was remarked that the improvements now needed in the art and practice of coal-mining might be thus specified:—first, to ensure greater safety to the men employed in working; and secondly, to obtain the coal in better condition, and, by preventing as much as possible the loss arising from waste, to make more fully available all the remaining resources of the coal fields. It was contended that the use of gunpowder and the operation of blasting must be altogether abandoned; and the problem to be solved was, what force could be applied which should be equally effective, and at the same time break the coal in a more perfect manner. The author thought some more simple and practicable means of getting coal by mechanical power could be devised than the costly, but skilfully contrived, coal-cutting machines. His first idea was to apply wedges, acted upon by hydraulic force, but he was induced to abandon that system, owing to objections to the use of wedges, and to adopt instead an apparatus consisting of twelve plungers, set side by side in a steel bar, which plungers, when acted upon by water from a hydraulic pump, would separate the bar in which they were set from another bar, formed in the shape of a cover upon the plungers. The pressing apparatus was 25 inches long, and it was attached to a hydraulic pump by a tube 2 feet in length, so that it might be inserted into the coal to a depth of about 3 feet 6 inches. The apparatus, with the cover on, was 4½ inches in diameter. When, by the action of the pump, the plungers had reached their limit of 2¼ inches, and further expansion was needed, the plungers were readily brought back to their first position by opening an escape-cock for the water, when a liner could be inserted between the plunger and the cover; and this process could of course be repeated. In practice, however, it was found that the first expansion to 2¼ inches was more than sufficient. It was stated that the collective area of the plungers was 24 square inches, and as the pump could exert a pressure of 12 tons on the square inch, a total pressure of 288 tons could be brought to bear on the coal.

This apparatus had been tried in the South Wales district, where the coal was of the most varied description. It was observed that by the present system of blasting, it occupied, on an average, two men ten hours to break down and fill into trams 4 to 5 tons of coal, of which 20 per cent. was 'small,' and the remainder much shattered. On the other hand with this apparatus two men could readily break down 20 tons in one hour, which could be filled, when loosened, at the rate of 10 tons per man per day, the whole of the coal so obtained consisting of large solid pieces. Again, by the present system, in order to break down 500 tons of coal a day, from a 'four-foot' seam, a 'face' of 600 yards was required, whether as 'pillar and stall,' or as 'long work;' whereas with this apparatus the same quantity could be worked from 300 yards of 'face.' In this way there would be less space requiring to be ventilated, the working operations could be concentrated, and facilities would be afforded for effecting economy in other respects.

The discussion was then resumed upon Mr. Bidder's Paper in conjunction with Mr. Chubb's, and not being concluded it was announced that it would be continued at the next meeting, when, time permitting, the following Paper would be read: 'On New Ferry and New Brighton Piers,' by Mr. H. Hooper, Assoc. Inst. C.E.

At the Monthly Ballot, the following candidates were balloted for and duly elected: as MEMBERS, W. Anderson and F. W. Kitson; as ASSOCIATES, C. J. Clarke, E. N. Clifton, T. Dyke, R. M. Greene, T. Hennell, A. H. Kessner, F. L. O'Callaghan, W. W. Phipson, L. W. Pritchard, W. Stevens, W. H. Treverton, and M. Vidler.

A report was brought up from the council stating that, under the provisions of Section IV. of the bye-laws, the following candidates had been admitted Students of the Institution since the date of the last announcement: J. Addy, J. Baumann, J. Brunlees, A. G. Fowler, A. C. Robson, R. Sharland, G. Stevens, and J. J. Stiles.

### Associated Arts' Institute.

The fortnightly meeting of this Society was held in the rooms at 9, Conduit Street, on Saturday Evening, January 9, the President, Professor Westmacott, R.A., F.R.S., in the chair. After the ordinary preliminary business had been transacted, a paper was read by Mr. H. Ellis Wooldridge 'On the Cultivation of Artistic Feeling.'

Mr. WOOLDRIDGE, in opening his subject, remarked, that in the art productions of the more highly gifted races—those of the Greeks, for instance, or the Venetians—there existed certain qualities which our own efforts always failed to attain; and from this he concluded that the capacity of

those who produced them for receiving delicate impressions must have been more extended than our own. Our deficiency might, he thought, be attributed to something of the spirit of asceticism still lingering among us—to our regarding the gratification of the senses as something ignoble in itself, and as being a bar to intellectual progress. Those mistaken views had their origin in the relation of the senses to the mind not being properly understood. That they were inconsistent with the laws of human nature was shown by the fact, that whenever the enjoyment of the pleasures of the senses had been rigidly prohibited—as during the supremacy of Puritanism—reaction, developing itself in excess, had been the result. On the other hand, the full and indiscriminate cultivation of the gratification of the senses had produced no less pernicious consequences, as was seen in its disastrous effects on the societies of Greece and Rome. The true mean was only to be found by a more philosophical investigation of the relation of the senses to the intellect than had yet been attempted.

After these somewhat general observations, Mr. Wooldridge proceeded to speak more particularly of that division of the sensuous organisation of man which enables him to receive impressions from nature, and to reproduce them as art. At the close of the sixteenth century this power had reached its greatest development. It then steadily declined, till, in the first half of the present century, there came in this, as in other things, a reaction. We shall do Mr. Wooldridge greater justice by allowing him to give his own words:—

'The first evidence of this reaction in painting—the first at all events which was apprehended as such by the world at large—was, what is called the "pre-Raphaelite movement." We hear very little of the pre-Raphaelites nowadays. One, their chief, Mr. Rossetti, has withdrawn himself altogether from the public; another, Mr. Millais, is more prominent than ever, but his present work, noble as it is in some respects, by no means represents what we mean when we speak of pre-Raphaelitism; others have ceased to paint; only one, Mr. Holman Hunt, still comes forward, from time to time, with a picture which is yet true to the principles of his early faith. The name is being forgotten; if it is ever revived it is but to point the finger at it still. And yet what a debt of gratitude we owe to them; what a flood of light came in through the door which they opened! They have been accused, perhaps justly, of interpreting the visible side of nature in too literal a way, of trying to make painting do something it cannot do, and was never intended to do; but we must not forget that they were the pioneers of a reaction against a school of painting which was not only unlike nature but had even lost every ray of sympathy for nature, and it is scarcely to be wondered at, if in their enthusiasm they laid down rules for an almost servile adherence to real life which have been long since disregarded by the greatest of them. But, though what was unstable has not stood, there was after all so much stability in their work that we may be said to owe to them almost all that is admirable in the painting of to-day. Certainly they awakened the artistic sense, stimulated it, excited it; and, whatever they may have intended, they sent men to the study of Phidias, Titian, Raffaele, and Michael Angelo, with purged eyes. Hitherto men had gone to the Greek and Italian masterpieces, influenced not unnaturally by a generous admiration of the works of their contemporaries, but with their perceptions necessarily dulled and blunted by such an influence; and as it is the property of a masterpiece to give pleasure to all, but to each one only so much as he brings the capacity for, what wonder if they found in Phidias, in Titian, in Raffaele, in Michael Angelo, only those qualities they were accustomed to admire in Canova, in Haydon, in Hilton, in Benjamin West. But men came from the study of pre-Raphaelite pictures to the study of great masters, not only with new and definite ideas about them, but with their minds made highly sensitive and ready to find new qualities in them; and surely they may be said to have found many new qualities in them. When we think for instance, of the works of Benjamin West, who revered the old masters as deeply as a man well could, and who thought he sympathised with them too; when we compare his work and the small amount, as it seems to us, of real appreciation of the great masters we find in it, with the curious perception of some of their finest qualities which we see in the work of Mr. Burne Jones, Mr. Legros, Mr. Whistler, and others of our own time.

'And the mention of one of these names reminds me that the reaction, among its various forms, has even taken, in some directions, the form of a cultivation of the *purely* artistic sense. I, for my part, believe it to be—as yet, at all events—a healthy form of reaction; indeed, I do not see how it could be otherwise, while it produces work so lovely as this of Mr. Whistler and of Mr. Albert Moore. For in their delightful creations we have certain qualities of colour, and certain graces of form, given in a way so new and perfect, that they have fairly taken every one whose opinion is worth having by storm. And yet, even while we are admiring their work, we become aware of the danger that hangs as much upon the skirts of this development of a particular sense as upon the development of the senses in general. I mean the danger of pursuing it too exclusively, if not too far; the danger of preferring to work for a few, instead of as many as possible; the danger of forgetting the duty which painting owes to the intellect. For painting has a duty to the intellect just as poetry has; not, perhaps, to such an extent, because poetry, by reason of its nature, can carry more to the intellect than painting ever could. But still, to some extent, and since it is possible—as by all great work it is certainly proved to be possible—to appeal at the same time both to the artistic sense and to the intellect, the philosophic spirit, it seems, to say the least, a misfortune that both should not be appealed to. I do not want to find fault with the works of Mr. Whistler and Mr. Albert Moore because they have not something which they do not pretend to have; I am content to take them most thankfully upon their own ground, and to enjoy them unreservedly; only I say it is their very beauty that forces me upon reflections of this kind, that suggests irresistibly the danger of believing that to be complete art which in reality exhibits, however exquisitely, only one form of it. I do not think a man should deny himself the expression of any purely artistic idea that may occur to him; indeed, I think he would be wrong to do so; and that we, on our side, should be wrong if we were not grateful to him for it, since it will go to make up the sum of artistic progress; only we must not forget that if his work is to be of real importance to the world at large, if it is to live

not only in the memories of the few who know what quality in painting really is, but also in the memories of that vast army of cultivated men and women who are not educated in the subtleties of art, it must have in it something more—some dealing with a human problem—some recollection, at least, of an intellectual idea—something, in short, which, while satisfying the artistic sense, shall also satisfy, to some extent, the philosophic spirit.

I say to some extent, because it is just as retarding to run into excess in performing a duty as in following a pleasure, and it is almost as easy; and unless the extent to which the intellectual part of a picture may best be carried be rightly felt, we shall be in danger here also. It seems like a truism to say that in art the artistic sense is most important, and that the intellectual idea, though necessary, is only of minor importance; and yet, I think, we cannot look, for instance, at such pictures as Bronzino's "Allegory" in the National Gallery, or one by Tintoretto at Hampton Court—a bird's eye view of a labyrinth of human life with people wandering in it—and not feel that the painters have in some way failed to apprehend the true place of the intellect in painting—that they have allowed their fondness for thinking to carry them a little beyond the true limits of their art. There is a discord somewhere; we are puzzled, distracted, unsatisfied; and I think the cause is what I say—the claims of the intellect are put forward over strongly: they are made to demand too large a share of our attention, at least as large a share as the claims of the artistic sense. It is this just perception of the true position of thought in relation to art that makes the allegories of the great master of that kind of subject—Albert Dürer—so successful, and it is the want of it that makes the Allegory of Bronzino so unsuccessful; in the one we are attracted first by the nobility of the art, and only fall back upon the Allegory afterwards; while in the other, from the moment we begin to look at it, we are racking our brains to find out what it means. I do not stop to ask how far this just perception may be acquired, or how far it is innate. I only say it must be there, if we are to have great art; the want of it is always characteristic of a declining school. In the decadence of Greek and Roman art it was very remarkable, and the schools both of Florence and Venice had seen their best days when Bronzino and Tintoretto were painting these allegories in which we find it. It is true the tide had only just turned in Florence and Venice when Bronzino and Tintoretto were prominent; but it is very interesting to find these instances of an over allegorising tendency just at the turn, and it suggests the question whether an inclination towards reflection existing in society has not always, sooner or later, had a fatal influence upon the art of that society. I think that hitherto it has. For the artistic history of a nation is very closely connected with its political and religious history, and depends quite as much as they do upon the conditions of national life; and, in the early life of a great nation—such a life for instance as that of Greece in her best days—all that is said and done in politics, in religion, in art, will seem perfectly natural, perfectly spontaneous, the necessary expression of a happy, harmonious, noble life.

'The perfect artist is no hermit, shutting himself up from everything that does not seem to bear immediately upon art; he is influenced constantly in all sorts of ways by everything that goes on in the world; so that I make no apology for dealing with the subject in this inexclusive way, nor for directing your thoughts, not to the study of any one school of art, not even to the study of art simply, but to the study of all those influences which have determined the actions of men, and especially—as being most important to ourselves, and as determining in a great measure our actions—the study of the Modern Spirit.'

After some further observations, in which Mr. Wooldridge urged the desirability of attaining by means of philosophical enquiry, in accordance with 'the Modern Spirit,' to that state of artistic sensibility which was in Greece of spontaneous growth, he brought his very thoughtful and carefully written paper to a close.

After a few brief remarks from members,

The CHAIRMAN expressed his admiration for the paper just read, and his concurrence generally with the views advanced. He thought, however, that too much importance was attached by Mr. Wooldridge to the sensuous qualities of art. It was remarkable that whenever in the history of art those qualities had gained ascendancy over the intellectual, art had at once declined. Such was the case when the luscious beauty of the school of Praxitiles became the great feature of Greek sculpture. As to the claims of the senses to be cultivated to their fullest power of perception and enjoyment, he agreed with Mr. Wooldridge, since it was through them alone that the mind could hold communication with the external world, and unless they were highly cultivated by the artist his work must be inferior. He thought that Mr. Wooldridge had somewhat over-estimated pre-Raffaellism. Real pre-Raffaellite art—the work executed before the time of Raffaele—was most interesting. It expressed the feelings of its age, and embodied all the art-knowledge of its producers. Not so nineteenth century pre-Raffaellism. Still, earnest work was always valuable work, and he acknowledged that much earnestness was shown in many of the paintings of this school. He believed, however, that the abandonment of pre-Raffaellism by its most eminent professors was a proof that its principles were of small value. The pre-Raffaellites deserved praise chiefly for having boldly protested against the wrong, and followed Nature, though they might perhaps have done so in a mistaken manner. A great difficulty at the present day was, how to make art elevating, and at the same time generally attractive. It could not be said that the public showed no interest in art. As a member of the Council of the Royal Academy, he (Mr. Westmacott) had recently been going through some of the accounts of that institution. He found that during the last ten years the average receipts, from shillings taken at the doors, had amounted to no less than 11,000*l.* per annum. It was obvious, therefore, that the British public did feel some interest in art, and found pleasure in the works shown to them. But how much of that art was elevating in its character? How many of all the pictures exhibited would live? The best means by which popular art might be made noble was a subject on which he hoped a paper would be read before the Institute.

The elevating and the attraction might be reconciled, and the duty of reconciling them rested with the younger men.

A vote of thanks to Mr. Wooldridge having been briefly responded to by that gentleman, the proceedings of the meeting terminated.

#### Institute of Surveyors.

The usual fortnightly meeting of this Institution was held on Monday evening, Mr. J. Clutton, the President, in the chair.

After the routine business of the meeting had been disposed of, the discussion on Mr. R. H. Grantham's paper on 'Arterial Drainage,' commenced at the last meeting, was resumed by

Mr. EDMUND JAMES SMITH, who said that he had moved the adjournment of the debate less for the sake of speaking himself than for giving other gentlemen an opportunity of making observations on Mr. Grantham's very able and practical paper. He would, however, go into the question, what form the taxation of the area within any drainage district should assume. His experience, which was of thirty years' standing, tended in favour of an *ad interim* acreage charge during the construction of the works, supplemented by an assessment of the advantage which each part had received by the improved outfall. Basing the assessment on the poor's rate, by which the fields which got the most advantage from the improvement would be put at the lowest rate, was a fallacy which no man with ordinary common sense would support.

Mr. BAILEY DENTON wished to add a word or two which he thought might be of historical interest with reference to the Act of 1861. He considered that Act was the result of a public meeting held in London in February, 1861, convened at the instigation of Sir Henry Vavasour, and of a great deal of correspondence and description of evils which were then being made known in the agricultural press by the pen of Mr. Algernon Clarke. He (Mr. Denton) had also taken an active interest in the question, and he felt that his friends and himself had (no doubt most unintentionally) been rather put on one side in Mr. Grantham's note of the origin of the Act. Passing from this, he urged the formation of Conservancies for each river basin in the country. Speaking from his own experience, little would be effected by this Act till such boards were formed. As a rule, the districts are small, and the work (if it is to be done well) is costly. Landowners are not at present in a condition to agree to any very heavy expense. Still the work is progressing; and he believed that, if Conservancy Boards were established, many other improvements would be set on foot under their supervision. Coming to the question of rating—which was one of importance to surveyors—he could not quite agree with Mr. Smith. He thought that, instead of an *ad interim* charge of any kind, there should be a uniform acreage charge, to be supplemented by an improvement charge. This might be a distinction without much difference; but that if the latter form was adopted, we should be doing what was wise.

Mr. FRANCIS VIGERS thought the meeting was taking too narrow a view of the question, which was not who was the originator of the 1861 Act, but what could be done towards the improvement of the natural arterial drains of the country. It is well known that, from neglect, or for the purposes of trade, there is not a river in this country which does not offer a bar to the efficient drainage of the district surrounding it; and he thought that, if the members, who were to be found in all parts of the country, would but sink their differences of opinion and unite together, and make observations of the rivers in their neighbourhoods, a fund of information would be collected, not only creditable to themselves, but which would be of service to Government when it came to enquire into the matter. He lived on the Mole—perhaps knew more about it than any other river in England—and he would undertake to make a survey of that river, to show that he meant what he preached.

Mr. R. C. DRIVER was of opinion, judging from his experience in Gloucestershire, that mills were a total obstruction to the proper cultivation of land.

Mr. J. W. BARRY said that mills and drainage would always be antagonistic, and the point to consider was which of the two was most valuable. Again, the question of navigation came in opposition to drainage: there also the same consideration would apply. Any proposal which omits these considerations will be useless, and any gentlemen who gave them surveys ought also to furnish particulars as to the value of the mills and the navigation, as well as that of any improvement which might result from the drainage.

MESSRS. FRANCIS FULLER, SQUAREY, and F. CLARK having addressed the meeting, Mr. GRANTHAM very briefly replied to the observations of the various speakers, and stated that though Mr. Bailey Denton's statement was perfectly correct, he had not in any way raised the question as to the originator of the Act of 1861, nor did he propose to discuss that point.

The CHAIRMAN thought all present were much indebted to Mr. Grantham (hear, hear) for having brought this large and important subject before the meeting. He believed that the discussion would forward the drainage of the large valleys of the country. He thought his friend Mr. Vigers was right in his observation that we ought to discuss this matter on broad principles. Mr. Barry, too, hit the mark when he said that the value of the mills and the navigation must be weighed against the presumed value of the improvement. The Chairman then gave two or three illustrations of this fact, stating that the valley of the Thames was the worst drained in the country, and that if a really great flood should come, many of the locks are so rotten that they would be swept away. The Thames valley would afford work for six engineers and a dozen surveyors. There was one advantage in possessing the Act of 1861, as it affords the majority the power to override the minority. This is a great boon, for in land matters obstructions as a rule are caused by some obstinate owner who has but little interest at stake. With reference to the Leadon valley, mentioned by Mr. Grantham, it must be borne in mind that at least half the cost of the undertaking was incurred in purchasing the mills, and that out of the total cost but 30 per cent. was occasioned by the works and improvements. It had been asked during this



discussion how far below the surface was it necessary for the water to be taken for the proper cultivation of land. That was a question which could only be answered relatively. If the land was to be used for grazing purposes, it would not require to be taken very low; but if the land is to be arable land, then you must go at least four feet below the surface. Sometimes in pasture land the drainage would destroy all the grasses which had hitherto been nurtured by the floods; and he knew of cases in Lincolnshire where land used to fetch, as pasture or meadow, 3*l.* per acre, and which sunk to 20*s.* after being drained, but when broken up and utilised as arable land it recovered its value. He thought, as regards the rating, it should be on the improvements conferred. In Ireland the land is both valued before the commencement and after the completion of the works. This is obviously the best method, as it must be very difficult to estimate the improvements by merely going over the ground after the work is finished. Natural drainage must, of course, be preferred to steam power wherever it was possible. He was glad to see that the Government had taken this matter up, and he trusted that if this Institution could furnish any information it would do so to the utmost. He had now to call upon Mr. Edward Ryde to read his paper entitled 'Parochial Assessments.'

Mr. RYDE said he had originally intended to deal with the subject of 'Parochial Assessments' in all its phases, viz.:—1. To give 'Historical Notes' of the legislation on the subject, and of the purposes for which the various rates and taxes have been authorised. 2. To point out in respect of what property they are imposed, or what is subject to them; and the mode in which such property is to be valued for assessment. 3. To consider the form, allowance, publication, and collection of the various rates, the persons who are liable for their payment, the remedies of parties against unfair and incorrect assessments, and the tribunals to which appeals have to be made. It was found, however, that the subject was too large to be treated in one paper, and Mr. Ryde on the present occasion confined himself to the Historical portion of the subject. Without doing the author injustice, it would be impossible to abridge the paper: we will therefore content ourselves with a record of the fact, that considerable applause greeted the conclusion, that a vote of thanks was accorded to its author for its ability, and that the discussion on this paper will be the first real business of the next meeting, on Monday, February 8.

Afterwards a paper, by Mr. J. Bailey Denton, will be read, entitled 'The Future Extension of Railways with Reference to their Influence on Landed Property and Agriculture,' and which it is thought will afford plenty of scope for variety of opinion, and lead to an animated discussion.

## REVIEW.

**SPRAGUE'S POCKET DIARY AND ARCHITECT'S AND SURVEYOR'S MEMORANDUM BOOK.** LONDON: W. W. Sprague & Co., 14, Sherborne Lane.

This is an excellent idea carried out in a compact and most creditably got up shape. To a small pocket diary and almanac, such as almost every busy man finds it necessary to carry in order to register appointments, Messrs. Sprague have appended a calendar and a few items of that general information which accompanies every ordinary diary. This is fitted for the special use to which its name points it out by the addition of a compact series of such tables and memoranda as are supposed to be most often required in practice. The idea is, we believe, a novel one, and is certainly a happy thought. The principal drawback is, that it is not carried far enough. We would willingly exchange the list of London bankers for a list of district surveyors, Her Majesty's Ministers for the Members of the Metropolitan Board of Works, the proper lessons for every Sunday in the year for the tables of 'useful memoranda in matters of land valuation' which a very well-known London surveyor has printed for private circulation, and the Stamp Act for an abstract of the Building Act. A table for turning measures on the metrical system into feet and inches would be a most useful addition, and so would reliable tables relative to wrought and cast iron girders; but they would be better ones than those for wooden girders here given. Having thrown out these hints for a future edition, it is only fair to say that the contents of the present one, as it stands, are very useful, and that it will probably be found the most satisfactory *vade mecum* in small compass that an architect or surveyor can possess. This venture can hardly fail to be successful.

**ATCHLEY'S BUILDER'S PRICE BOOK; LAXTON'S BUILDER'S PRICE BOOK.**

These two very valuable annuals keep up their character for usefulness and reliability. We believe that an Architect's, Engineer's, or Builder's Office is incomplete without them. Atchley's 'Price Book,' which is well got up and well bound, consists of 348 pages, and on nearly every page something may be found of importance to the class of readers in whose interest it is published. It contains a great amount of information that is to be found nowhere else, and we can cordially recommend it to our readers. Laxton's 'Price Book' maintains the high character which a half-century of usefulness has won for it.

## NEW BUILDINGS AND RESTORATIONS.

**A New Lecture Hall**, erected on the estate and at the sole expense of J. S. Garrett, Esq., was opened on Friday last at Cavendish. The building, which is situated close to the Cavendish Railway Station, contains on the ground floor a main hall, 50 feet long by 24 feet broad, and 20 feet in height. Leading from the lecture room is a class room, 20 feet by 13 feet, fitted up with every convenience, and a private room, 15 feet by 10 feet, with door opening on to the platform. There are besides two rooms over the entrance hall, which may be used as a residence for the hall keeper. Mr. Salter, of Sudbury, was the architect of the building, which was erected by workmen in the employ of Mr. Garrett.

**A New Theatre**, to be called the Theatre Royal (Stockport), has just been erected, and will be shortly opened.

**The Parish Church** of Camden Town has undergone some extensive alterations and improvements, which have had the effect of changing its previous dreariness to elegance and comparative cheerfulness.

**The Mechanics' Hall** at Nottingham, which was destroyed by fire last spring, has been rebuilt, and was opened a few days since. It is now, perhaps, one of the finest buildings in the Midland Counties.

**Christ Church, Wolverhampton**, which had been temporarily closed for additional improvements, has been re-opened.

**The new Wesleyan Chapel** has been opened at Lower Broughton, Manchester. It is built in the Italian style of architecture, at an expense of 6,200*l.*

**Plans for building cottages**, each containing living room and three bed rooms, have been approved by the Agricultural Employment Commissioners. The cost of construction is to be 85*l.*

**A noble building** has been publicly opened at South Shields for the education of seamen in navigation. It comprehends class rooms, lecture hall, and observatory, and is quite complete in its details.

**The parish church of St. Feock**, Cornwall, has been re-opened. The whole fabric was put in repair more than twenty years ago. Some portion of it was then rebuilt, and great improvements have just been effected in the chancel.

**The new church of St. Gabriel**, in the parish of St. Bartholomew, Birmingham, has been recently opened. The cost of the edifice, including fittings and lands, was 4,200*l.* Of that sum 3,000*l.* were contributed by the Ryland Fund, and the remainder has been defrayed by voluntary donation.

**The old parish church at Warkworth** has been renovated and restored at the sole expense of the lady of the manor.

**The parish church of South Weald** has been re-opened. The nave, south aisle, and upper portion of the tower were taken down; but the latter has been restored, the old lines and details still remaining. The body of the church now consists of nave and chancel, south aisle, and lay rector's chancel; the additions being the new chancel, organ-chamber, and vestry. The entire work has cost about 7,000*l.*

**Bristol and Gloucester Cathedrals.**—The building of the new nave in Bristol Cathedral is steadily advancing. A complete restoration of the choir of Gloucester Cathedral has commenced. The work will extend over at least two years, and involves an outlay of at least 13,000*l.* The restoration of the south transept has just been completed; it is to be followed by the restoration of the south porch. The original estimate was 45,000*l.* Out of this, work, mainly external, has been completed to the amount of 10,000*l.*, and work is now undertaken to the amount of 13,000*l.* There remains, therefore, about half the work to be taken in hand.

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

### Decorations at the Cutlers' Hall, at Sheffield, for the Duke of Norfolk's Majority.

On Tuesday evening, January 26, the Duke of Norfolk presided at the first of a series of banquets in the handsome new hall of the Cutlers' Company, at Sheffield, to celebrate his accession to his paternal inheritance. The decorations of the hall are elaborate in character, and are intended to portray the history of the noble and ancient House of Howard, whose armorial bearings are displayed on shields and bannerets along the sides and at the upper end of the hall. From the cornice are suspended on each side six bannerets emblazoned with the coats of Warren, Plantagenet, Mowbray, and Howard, and on the pedestals of the columns, on red cloth panels, are shields of arms chronologically arranged. The principal and central point is, however, at the upper end of the hall, behind the chair, where a trophy has been arranged, consisting of a great banneret surmounted by the Winged Coronet (Crest of Howard), and having upon it the Lion (De Brotherton), the White Horse (Arundel), and the famous motto 'Sola Virtus Invicta.' The ground is red, and from its imposing size this composition, supported and grouped with the Union Jack and the Red Cross of St. George, and rising from the dais to the principal cornice of the hall, is very effective. Tall trees in baskets are arranged on each side, the dark green Irish yew contrasting well with the rich drapery and quaint colour of the heraldry. The descent of the Lords of Hallamshire is exemplified by the shields of Lovetot, Furnival, Nevil, and Talbot. Placed on either side of this trophy, and at the four corners of the room, are bannerets on which are emblazoned the full arms of the House of Howard. Mr. Edward Eadon, of Fargate, has carried out all the decorations from the designs and under the personal superintendence of the architects, Messrs. Hadfield & Son.

### New Town Hall, Wareham, Dorset.

It is in contemplation to pull down the old Town Hall at Wareham, in Dorset, and to erect a new and much more commodious one on the site.

### Destruction of Valuable Pictures by Fire.

A fire lately occurred in the picture gallery of Messrs. Hodge & Co., High Street, Exeter, resulting in the destruction of valuable oil paintings by some of the most eminent artists, as well as plates and other articles, to the value of between 2,000*l.* and 3,000*l.* The gallery is situated behind the shop, and is approached by some steps. About nine o'clock one of the neighbours, finding that smoke was entering his premises, gave an alarm. The fire, it was evident, had been burning for some time and, after the flames had been subdued an examination was made in order to ascertain the damage done. The whole of the pictures were destroyed, amongst them being a very large one by Rubens, valued at no less than 1,000*l.*

Amongst the charred remains were discovered the plates of the engravings of the portraits of Lord and Lady Portsmouth. These were entirely spoilt, and were said to be worth 800*l.*, but they were insured in the sum of 100*l.* only.

#### Philadelphia and Liverpool.

A steamship line between Liverpool and Philadelphia has been projected. Philadelphia is probably the leading manufacturing city in the United States, and, as a large portion of the raw materials are imported, there seems to be no reason why a well conducted steamship line should not meet with success. The Pennsylvania Railroad Company, it is said, has been making great exertions to impart to the export of bread stuffs and provisions from Philadelphia the same force that has been given to the petroleum shipment. It was for this mainly that the grain elevator was built at Washington Avenue, and the bridge across the river Schuylkill erected.

#### An Interesting Architectural Discovery.

The demolitions in the old island known as the Cité de Paris have brought to light the existence of the old chapel of Saint Agnan, which was supposed to have been destroyed long ago. This edifice was built about the commencement of the twelfth century by Etienne de Garlande, Chancellor of France. The chapel was suppressed with many others in 1790, and sold as national property in the following year. It is situated in the court of a house, No. 19, in the Rue Basse des Ursins, a portion of it—the apsis—being built into an adjoining house. About half only of the original edifice remains intact. The columns are clustered, three in a group, and the capitals are varied, and present a capricious arrangement of foliage and figures of animals. The soil has been raised so much that nearly one-third of the height of the columns and walls is at present concealed. There is no doubt that this interesting relic of the period of the decline of Roman architecture will be carefully preserved.

#### The Borough Surveyor of Blackburn v. George Stones.

At the Town Hall, Blackburn, before James Thompson and Thomas Bury, Esqrs., Mr. Smith, borough surveyor, summoned Mr. George Stones, contractor, and the owner of property in Addison Street, for the sum of 26*l.* 7*s.* 9*d.*, due under the Blackburn Improvement Act, for sewerage and paving executed by the Blackburn Corporation in that street.—Mr. Smith stated that on September 21, 1866, the Highway and Drainage Committee ordered Addison Street to be put under notice, and on December 18 the committee sat the usual hour to hear any objection that might be urged against it. On the 29th tenders were accepted, and the work was commenced. Witness had measured the work, and found it to be correct.—Anthony Hall deposed that in 1866 he was a clerk in the Town Clerk's office, and served the usual notice on the defendant.—Michael Keogh, clerk in the Borough Surveyor's office, deposed that he served a notice similar to the one produced on the defendant in November, 1866, and that the defendant was very saucy. (Laughter.)—Mr. Watson and Mr. King, collectors, deposed that they had demanded the account of the defendant, who had refused payment.—Defendant did not appear.—The bench made an order for the amount with costs; in default, distress, or three months' imprisonment.—*Blackburn Standard.*

## General.

The Members of the Royal Academy meet on Saturday, the 30th, to fill up two vacancies in the ranks of the Associates. There are no restrictions as to the order, whether of painting, architecture, or sculpture, from which the selection should be made; but, in accordance with the course hitherto pursued, it is believed that two painters will be elected. Among the candidates in this class are to be found the names of Messrs. Marks, Mason, Poynter, Prinsep, Vicat Cole, Leader, and other popular favourites.

The Members of the Artists' Corps (composed chiefly of painters and architects) have elected for their commanding officer Frederick Leighton, Esq., R.A., in the room of H. W. Phillips, deceased. Mr. Leighton receives the rank of Major.

The Dudley Gallery General Water-Colour Society open on Monday, February 1, their Annual Exhibition of Water-colour Paintings and Drawings; and the collection this year is of more than average merit, especially in the department of landscape.

The Report of the London Permanent Benefit Building Society, to be presented on February 2, states that a profit of 3,610*l.* has been realised. Of this, 2,831*l.* has been placed to the credit of the members in respect of their deposit shares, being interest at the rate of 6*l.* per cent. per annum on their paid-up capital; 389*l.* has been added to the reserve fund, which now amounts to 1,264*l.*; and the remainder is carried to the bonus account, and will allow of a bonus of 5*s.* per share on the deposit shares that have remained fully paid up throughout the twelve months ended December 31, thus making the profits on such shares equal to 7*l.* per cent. per annum.

Report states that the South-Eastern Railway Company have consented to erect a station for the benefit of Halstead, Knockholt, &c. (Kent), providing a site is obtained and a guarantee from the district raised for the cost of building.

It is anticipated that in the course of next month the Solway Junction Railway, which has been for several years in course of progress, will be sufficiently completed to enable an engine to run over the entire line from Kirtlebridge to Brayton. The viaduct, which is a fine specimen of engineering, is already finished.

Great Improvements have been recently made in the great School-room at Westminster. Several of the Norman windows of Edward the Confessor's Dormitory have been cleansed, and an idea can now be formed of their original appearance.

**New Painted Windows in Westminster Abbey.**—Two new painted windows of more than ordinary interest have lately been erected in Westminster Abbey; the one in memory of Isambard Kingdom Brunel, in the north aisle of the nave, not far from the windows put up to the memory of Joseph Locke and Robert Stephenson; the other on the eastern side of the south transept, in 'Poets' Corner,' in honour of Geoffrey Chaucer, just above the poet's tomb. The Brunel window consists of two lights, surmounted by a quatrefoil opening; along the bottom runs a legend giving the dates of Brunel's birth and death (1806-1859). Over this are allegorical figures of Fortitude, Justice, Faith, and Charity; and the upper part of the window consists of six panels, representing three subjects from the Old and three from the New Testament. Above, in the head of each light, are angels kneeling, and in the quatrefoil is the Saviour in Glory, surrounded by angels. The design was executed in glass by Messrs. Heaton & Co., of Garrick Street, from the designs of Mr. R. N. Shaw, the figure subjects being drawn by Haliday. The colours are of sober rather than a brilliant tone, which contrasts not unpleasantly with the colour so prominent in the Locke and Stephenson windows. The Chaucer memorial window has been erected by the gift of a single donor, who wishes to remain anonymous; it was designed by Mr. J. G. Waller, and executed by Messrs. Baillie & Mayer, of Wardour Street. The window itself is intended to embody the intellectual labours of Chaucer, and to record his position among his contemporaries. The portrait of the poet occupies the centre of the tracery above, between those of Edward III. and Queen Philippa, his wife; below them are those of Gower and John of Gaunt; and above them Wycliffe and Strode, his contemporaries. In the borders are disposed the following shields of arms, alternately—England, France, Hainault, Lancaster, Castile, and Leon. At the base of the window runs the simple legend—'Geoffrey Chaucer, died A.D. 1400,' with four lines selected from his poem, 'Balade of gode counsaile.'

There appears to be very little probability of the sewage of the metropolis being turned to profitable account, at least for some years to come, in connection with the Metropolis Main Drainage scheme. So long ago as March 1, 1867, the Metropolitan Board of Works received tenders for a concession of the sewage on the southern side of the Thames, which were referred to the Works and General Purposes Committee. That committee has now reported to the Board that various circumstances have militated against their efforts to carry into effect arrangements with any of the gentlemen who submitted the tenders. The financial embarrassments consequent upon the crisis of 1866 had, and their effects still continue to have, an adverse influence on commercial schemes in general, and especially on such as present new and comparatively untried features. For this and other reasons the committee have from time to time been obliged to adjourn the consideration of the tenders in the hope that the time may speedily arrive when the question may be definitely and satisfactorily dealt with. So far, however, this has not been the case; and having regard to this, and to the fact that the construction of the works of the Metropolitan Sewage Company on the north side of the Thames has been in abeyance for some time, and that the position of that company is now under the consideration of the committee, they report that it would be advisable for the Board to postpone the question of utilising the southern sewage to a future and more favourable opportunity, and to discharge the present reference to the committee. To this the Board has assented.

Messrs. Agnew and Sons, of the Exchange Fine Arts Gallery, Liverpool, are exhibiting a collection of water-colour drawings, comprising examples of the best artists.

Elton, Bury, Lancashire.—In a limited competition for St. Stephen's Schools, the plans of Messrs. Farrar and Styan, of Manchester and Bury, and of Messrs. I. Medland and H. Taylor of Manchester, were selected for further consideration, and after most careful examination those of Messrs. Farrar and Styan were adopted by the Committee. The works will accordingly be immediately carried out under the direction of these gentlemen.

New Asylum, Hornsey.—The Committee of the Aged Pilgrims' Friend Society, having received designs from the eight architects invited to compete for the New Asylum at Hornsey, have selected the design of Mr. Robert Edgar, 18 Great George Street, Westminster. It is intended that the work shall be immediately commenced.

The annual distribution of prizes won by pupils of the Leeds School of Art took place last Tuesday in the Mechanics' Institute. The Rev. Canon Woodford, the vicar, was in the chair, and Mr. Baines, M.P., and other gentlemen, addressed the meeting. Amongst the resolutions adopted was one urging the continuance of the facilities for art education afforded by the National Exhibition recently closed, approving of the steps taken by the Mechanics' Institution to found a permanent art collection, and soliciting the loan and bequest of works of art in support of the project.

Great Improvements are contemplated to the Harbour at Ilfracombe in the shape of widening the quay on the south side, and building a new east quay.

The Houses at the rear of Her Majesty's Record Office in Fetter Lane, which formerly blocked up the entrance to the central yard of the Parcels Delivery Company, are being removed for the purpose of enlarging the building. On the south front of the Record Office, where an unsightly 'toothing' has for long been a conspicuous object, is being added a new oriel window.

Mr. Sedding, architect, of Penzance, read a very interesting paper a few days ago before the Exeter Diocesan Architectural Society upon the interesting churches of St. Buryan, St. Levan, and St. Sennan.

A Splendid Gift.—Sir Paul Molesworth is about to give St. Mary's Roman Catholic Church, Penzance, a splendid altar, to be composed of the choicest polished granites, serpentines, &c., of the county, and at a cost of 350*l.*

We hear that Mr. Davies, nurseryman, of Grosvenor, Bath, has obtained leave of the committee of the Assembly Rooms in that city to build a con-

servatory on the small space of vacant land adjoining that handsome elevation. If done in good taste, we conceive the erection will be an improvement to the appearance of the premises externally; whilst the local advantage of the vicinity of flowers and shrubs to the interior is manifest, as they are continually wanted to adorn the rooms when they are required for private balls and parties. We understand Messrs. Greenman and Son (who lately altered and improved the Guildhall of Bath so much to the satisfaction of the Corporation) will commence the work at once.

**Sir John Cass's School.**—The Trustees of this foundation have purchased of the Corporation, at a cost of nearly 9,000*l.*, premises in Jewry Street, Aldgate, for the purpose of fitting them up as a new school-house, under the superintendence of Mr. G. R. Wales.

**The Direct Islington Railway,** the Brighton and Metropolitan Railway, and the Hyde Park and City Railway have been abandoned for the present session.

**City District Surveyor.**—The Metropolitan Board of Works has appointed Mr. G. W. Williams Interim Surveyor of the southern division of the City, the appointment being vacant through the death of Mr. G. Smith. The income of the office for the last year amounted to 143*l.* 18*s.* 9*d.*, and the Building Act Committee have now under consideration the subject of the proposed re-arrangement of the several districts in the City, the income of the whole of them being much below the average of other metropolitan districts.

In clearing the ground for the foundation of some additional building to the Bishop's palace at Lichfield, Staffordshire, the ashlar facing of the old palace was laid bare at a few feet below the present garden level, and a strange discovery was made. Built up against this wall were found the remains of a pipe manufactory. The flue and the floor of the kiln were very apparent, formed of bricks of a larger size than the present common Flemish pattern. Mixed with the surrounding soil were pipes and fragments of pipes to the amount of one or two hundred, portions of the unbaked clay still quite moist, scoræ and lumps of coal, and in one case a fully-formed pipe-bowl in its unburnt state.

**The Inhabitants of Lochmaben,** Dumfriesshire, who claim for that locality the nativity of King Robert of Bruce, have decided to erect a monument to his memory.

**Staircases,** whether of wood or stone, will wear out; but a remedy has been found by M. Cazeau, who says he has found a durable covering in thin plates of aluminium bronze. He proposes to try his covering on the column of the Place Vendôme, and reports the experiment has been made in a factory, where plates of common bronze on the stairs  $\frac{1}{2}$  inch thick were worn out in six weeks, while plates of aluminium bronze  $\frac{1}{2}$  inch thick remain just the same as when new, after eleven months of service. Aluminium bronze is not too expensive if it will bear this amount of usage. It is merely copper, with from eight to ten per cent. of aluminium.

A new Tower has been added to the parish church of Stalbridge.

**Filey Brigg** has at last given way. Some thousands of tons of rock have fallen. One of the blocks is stated to be 20 ft. in length, 14 ft. in breadth, and 3 ft. thick. Great consternation was caused to the inhabitants by the terrific noise of the falling mass.

**Mr. James Gilles Brown,** architect, formerly of Sunderland, has been elected surveyor of the North Riding of Yorkshire, at a salary of 300*l.* per annum. The election was made at the Quarter Sessions of Northallerton. Mr. Brown was nominated by the Earl of Zetland, and his nomination was seconded by Mr. Challoner.

**A New Wing to Chester Castle,** containing eighty-four separate cells for prisoners, has just been completed by Mr. Lovatt, contractor, of Wolverhampton, at a cost of 5,339*l.* Mr. R. Griffiths, county surveyor of Stafford, was the architect.

**A Most Extraordinary Accident** is reported at the mills of Messrs. Martin and Johnson, Bolton, by which damage has been done to the extent of some 6,000*l.*, and 700 people thrown out of employment. Whilst the works were in full operation, the mill engine 'ran away,' scattering destruction, but fortunately not death, in all directions.

**A Discovery at Guildford Castle** has been made by Corporal Macdonald, of the Royal Engineers, who has recently sunk shafts in different spots, and succeeded in finding, about 220 yards from the castle, in a direct line, the arch of a passage communicating with a vaulted chamber 75 feet long, 60 feet wide, and 15 feet extreme height. The total depth from the surface is about 100 feet. On the walls of this subterranean chamber many ancient dates are inscribed in rude characters, and bottles and other old rubbish have been found within it.

**Wife House, Whitehall,** is being demolished by order of the Commissioners of Her Majesty's Works. This, together with part of the United Service Museum, several adjoining houses, and the Tudor-arched entrance to the Palace water stairs, will be gone in a few days.

**The Blackburn and East Lancashire Permanent Building Society** at their last meeting declared a dividend of seven per cent. per annum, still leaving a large balance at the banker's.

**A Curious Report** reaches us from Naples. Signor Fiorelli, under whose superintendence the excavations at Pompeii are being conducted, proposes to give a grand fête, in classic style, in honour of the Crown Prince and Princess of Italy. The interesting remains of what some eighteen hundred years ago was a flourishing and fashionable town of the Romans are once more to be the scene of Roman life on a Roman holiday. The streets, the temples, the forum, the shops, even the very houses themselves, are once more ('for this occasion only,' as the playbills would say) to be peopled with real live *toga'd* inhabitants, and the festival is to last without intermission for twenty-four hours. At noon the public games will begin, the victors to receive their prizes at the Temple of Fortune. Competitive singing and other amusements of ancient Pompeii will follow, and in the afternoon there will be the performance of a Greek tragedy ('done' into

Italian) in the Circus, the day to close with another exhibition of music and dancing in the amphitheatre, which will be lit up with thousands of torches. Signor Fiorelli estimates the costs of this 'little amusement' at 300,000 francs (12,000*l.*)

**The Committee** for the erection of a monument in honour of the late Emperor Maximilian of Mexico at Trieste has received the handsome donation of 5,000 francs from the French Emperor as his contribution towards the expenses.

**Professor Piloty,** of Munich, has been offered the post of Director of the Royal Academy of Arts at Berlin; but it is very generally expected that he will decline the honour, and will remain at Munich for the present.

**The Studio at Rome** of the celebrated American sculptor, Mr. Rogers, has been crowded lately to view a colossal figure in clay of the late lamented President Lincoln. The figure, which is 12 feet high, represents the President sitting, with a pen in the right hand and a scroll in the left. The face is turned slightly upwards, and has an expression of deep earnestness. The likeness is stated to be perfect. The pedestal will be 14 feet high, and enriched with bassi-relievi and emblematic ornaments. It will eventually be cast in bronze at Munich, and, when complete, will probably adorn one of the public squares in Philadelphia.

In Chicago a tunnel has been completed under the river, at an expense of 328,500 dollars; the length of the work is about 1,605 ft., and it connects the south and south-west divisions of the city.

**The Foreign Coal and Iron Trades.**—Several important facts may be noted this week in regard to the French and Belgian iron trades. Thus the Northern of France Railway Company has let a contract for 10,000 tons of rails to the Anzin Forges Company; the terms are stated to range between 7*l.* 16*s.* and 7*l.* 18*s.* per ton. In Belgium a contract for 35,000 tons of rails for Hungarian railways has been definitely let, and another contract for 20,000 tons of rails (for the Eastern or Hungary Railway) is now in the market. Another contract for 9,600 tons for the Belgian State Railways has been divided among the leading Belgian works, at terms ranging from 7*l.* 16*s.* 3*d.* to 8*l.* per ton. The Selessin, Châtelineau, and Couillet Works have taken conjointly a contract, to be executed before October, for 15,000 tons of rails for a Russian railway; the terms have not transpired. An order for sixty locomotives is about to be given out for a Russian railway. Messrs. Neilson & Co., of Glasgow, have obtained a foreign order for twenty-two locomotives at 2,320*l.* per engine, delivered at the port of debarkation. M.M. de Dorlodot have obtained an order for 6,000 tons of rails for the Victor Emmanuel Railway; the terms are 6*l.* 8*s.* 9*d.* per ton, deliveries to be made at Antwerp before the close of June.

The following interesting 'Notes' are from the pen of Mr. Mechi:—  
**Deep and Shallow Drainage.**—I observe that after a dry summer, the fields drained 5 feet deep at 30 and 40 feet apart, in stiff clay, do not discharge water through the drains so early in the season as those of 30 inches deep, at closer intervals. The reason appears to me to be obvious. The 60-inch drains take the surplus water from 6,000 tons of earth, the 30-inch drains only lay dry 3,000 tons. It is easy, therefore, to understand that when the autumnal rains come, the 6,000 tons take longer to supersaturate than the 3,000 tons. The deep drained lands had only commenced running to-day (January 8), after the recent heavy rains. Are not those extra 3,000 tons more available for the roots of plants than the same quantity undrained under the 30-inch drains—for the roots of plants descend several feet? P.S.—One inch deep of earth gives over 100 tons per acre.

**A Good Suggestion.**—Our contemporary the *Daily News* says:—'Is it not time the paper-knife was condemned as obsolete, or classed among the useless ornamental lumber with which our ladies love to load their drawing-rooms? That this is not possible for the reason that books and periodicals are still sold uncut is no slight reproach to the publishing trade, and one which it behoves their customers to bring home. It is the singular conservatism of the members of that trade which makes a paper-knife necessary at all, and we should be glad to know if there be any grounds upon which what seems to be a stupid anachronism can be defended. Why should the onus of completing the mechanical operations which make reading possible be thrown upon those who buy, and why is not cutting the leaves of a book made as much the duty of the binder as sewing them together? It is clear that the act of paper-cutting can be performed on a large scale at an infinitesimal cost, and that the whole of the uncut books and magazines now issuing from the press are so many encroachments upon the good-nature of the public. For no excuse of difficulty or want of knowledge or of means can be advanced. Our booksellers should really condescend to spare us this needless and petty worry, and war to the paper-knife should be the constant cry of every buyer of books.'—[The readers of THE ARCHITECT must have experienced the convenience of having the edges of the paper carefully cut for them. There is no difficulty whatever attending the process. By the powerful steam-cutting machines of the Messrs. Spottiswoode a very large number of papers can be cut in the course of a few minutes.]

MEETINGS OF LEARNED SOCIETIES.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Monday, February 1, at 8. Special, for discussion of proposed modifications of the Metropolitan Building Act.

INSTITUTION OF CIVIL ENGINEERS.—Monday, February 1, at 8. Adjourned discussion upon the papers by Mr. Bidder and Mr. Chubb. Paper 'On New Ferry and New Brighton Piers,' by Mr. H. Cooper.

INSTITUTION OF SURVEYORS.—Monday, February 8, at 8. Adjourned discussion on paper by Mr. Ryde. Mr. J. Ballej Denton on 'The Future Extension of Railways with reference to their Influence on Landed Property and Agriculture.'

ARCHITECTURAL ASSOCIATION.—Friday, February 5, at 7.30. Paper by R. Phené Spiers, Esq., on the Architecture of Belgium.

ASSOCIATED ARTS INSTITUTE.—Friday, February 5. Robert Bateman, Esq., on The Beautiful.

ROYAL ARCHAEOLOGICAL INSTITUTE.—Friday, February 5, at 4.

ROYAL INSTITUTION.—Tuesday, February 2, at 8. Mr. Westmacott, on Fine Art. Thursday, February 4, at 8. Prof. Rupert Jones, on Protozoa. Friday, February 5, at 8. Mr. Ruskin, on the Flamboyant Architecture of the Somme Valley.

SOCIETY OF ARTS.—Wednesday, February 3, at 8.

EDITORIAL NOTICES.

*N.B. The demand upon our last impression was so great that we were obliged to go to press a second time in the course of the week. Applicants who were unable to obtain that number of THE ARCHITECT are now informed that any copies they may require can now be obtained on application at the Office, or through the usual Newsagents.*

*No communication can be inserted unless authenticated by the name and address of the writer, —not in every case for publication, but as a guarantee of good faith.*

*The authors of signed articles and papers read in public must necessarily be held responsible for their contents.*

*Our readers are invited to address us on subjects of interest to themselves or the public. We shall be always ready to insert letters asking for a solution of any suitable questions of a professional or practical nature, and to receive replies to such enquiries.*

PUBLISHER'S ANNOUNCEMENT.

*Advertisements cannot be received for insertion later than 2 P.M. on Thursdays.*

*Temporary Office, 4, Monument Yard, London.—GILBERT WOOD, Publisher.*

THE GAZETTE.

PARTNERSHIPS DISSOLVED.

William Short Batley, William Bass, and Samuel Clark, New Parkgate, Rawmarsh, Yorkshire, brick manufacturers; so far as regards William Bass—John George Poulton and Thomas Abbotts, Banbury, Oxfordshire, cabinetmakers—William John Cunningham, Frederick Marcus, and Nicolas Alphonse Aubertin, jun., engineers; so far as regards Nicolas Alphonse Aubertin, jun.—Thomas Bagbird and Thomas Jones, Carnarvon, contractors—William Teasdale and Thomas Holmes, Newton-Lane-End, near Wakefield, Yorkshire, brickmakers.

BANKRUPTS.

Charles Bool, Bradford Road, Wells Road, Sydenham, builder, Feb. 8, at 2—Charles Parrish Dixon, late of St. Peter's Cottages, Hammersmith, builder, Feb. 3, at 1—Robert Stanton Harding, late of New Broad Street, City, furniture dealer, Feb. 8, at 11—Thomas Harvey, Pantons Street, Cambridge, builder, Feb. 10, at 1—Frederick Daymond Billings, late of Rodney Cottages, Bristol, civil engineer, Feb. 11, at 1—Charles Norman, Great Barton, near Bury St. Edmunds, Suffolk, brickmaker, Feb. 11, at 1—Charles Jesse Watts Russell, Cambridge Heath Bridge, Hackney, builder, Feb. 10, at 2—Thomas Moulding Taylor, Newbury, Berkshire, engineer, Feb. 8, at 1—John Welton, late of Ledbury Street, Peckham, builder, Feb. 8, at 11.  
**TO SURRENDER IN THE COUNTY.**—Richard James, Water Street, Castletown, Stafford, builder, Feb. 8, Stafford—James Trowsdale, Bishopton Road, Stockton, Durham, architect, Feb. 3, Stockton-on-Tees.

TENDERS.

12 Cottages upon the Arthog Hill Estate, for Thomas Taylor, Esq. W. R. Williams, Dolgelly, Architect.  
 J. Jones & Co. . . . . £1,865 0 0  
 H. Jones & Co. . . . . 1,820 0 0  
 J. Evans & Co. . . . . 1,824 0 0  
 Henry Jones & Co. . . . . 1,800 0 0  
 O. Owen & Co. . . . . 1,795 0 0  
 J. Griffith & Co. . . . . 1,790 0 0  
 R. Jones & Co. . . . . 1,752 0 0  
 T. Richards & Co. . . . . 1,674 0 0  
 G. Ellis & Co. . . . . 1,620 0 0  
 G. Williams & Co. . . . . 1,560 0 0  
 Let to G. Williams & Co.

For Rebuilding 124 Wood Street, Cheapside, E.C., including Fittings throughout, for M. Meyer, Esq. Mr. Herbert Ford, Architect. Quantities supplied by Messrs. Hovenden & Hoath.

Scrivener & White . . . . .	£6,933 10 0
Myers & Son . . . . .	6,843 0 0
W. Henshaw . . . . .	6,828 0 0
Webb & Sons . . . . .	6,763 0 0
G. Pritchard . . . . .	6,693 0 0
W. Brass . . . . .	6,546 10 0
Brown & Robinson . . . . .	6,540 0 0
E. Conder (accepted) . . . . .	6,432 0 0
A. Kilby . . . . .	6,405 0 0
Crabb & Vaughan (error of £369) . . . . .	6,197 0 0

For Erection of House at Luton, for Richard Brown, Esq. Quantities by Mr. John Scott. Mr. Thos. Charles Sorby, Architect.

Patuan, L. & W. D., Enfield . . . . .	£3,698 0 0
Kimberley, A., Banbury . . . . .	3,675 0 0
Patman & Co., London . . . . .	3,585 0 0
Spencer, H., Atherstone . . . . .	3,581 0 0
Smart, Bros., Luton . . . . .	3,555 11 8
Nixon, Thos., London . . . . .	3,442 0 0
Dennett & Co., Nottingham . . . . .	3,396 10 0
Farnell & Son, Rugby . . . . .	3,107 10 0
Osborne, Bros., Leicester . . . . .	3,100 0 0
Brown, Luton . . . . .	2,991 10 0
Neale & Sons, Leicester . . . . .	2,964 0 0

Tenders for the Buildings of the London Orphan Asylum, to be erected at Watford, Herts. Mr. Henry Dawson, Architect. Quantities by Mr. Roberts, and Messrs. Hovenden & Hoath.

Bromwich, Rugby . . . . .	£72,554 2 9
Hill & Keddell . . . . .	71,390 0 0
Perry & Co. . . . .	71,020 0 0
Ashby & Son . . . . .	70,347 0 0
Smith & Co. . . . .	70,280 0 0
Trollope & Sons . . . . .	69,970 0 0
Patrick & Son . . . . .	69,770 0 0
Colls . . . . .	69,400 0 0
Mansfield, Price & Co. . . . .	69,230 0 0
Dove . . . . .	69,230 0 0
Brown & Robinson . . . . .	68,680 0 0
Potman & Fotheringham . . . . .	68,595 0 0
Conder . . . . .	67,986 0 0
Jackson & Shaw . . . . .	66,801 0 0
Gannon . . . . .	65,967 0 0
Webb, Birmingham . . . . .	65,460 0 0
Higgs . . . . .	63,088 0 0

APPOINTMENTS VACANT.

LEWISHAM, KENT.—Surveyor of Highways. Salary, 300l. per annum. February 5. J. Edwards, Clerk to Local Board.

ROYAL ACADEMY OF ARTS.—National Gallery. For the best painting in Oil—or Model and Design in Painting, Sculpture, and Architecture. The Gold Medal and the Discourses of Presidents Reynolds, West, &c.; and for the best Copies of Drawings, Models of Life, the Antique in Landscape Perspective, &c. The Silver Medals, &c. November 1.

BOARD OF WORKS, LEWISHAM.—Surveyor of Highways for the district. Salary, 300l. per annum. Application to be made on or before Feb. 5. Samuel Edwards, Grove Place, Lewisham.

COMPETITIONS OPEN.

ROTTERHAM.—March 15.—For Plans, &c., for erecting a Public Hospital and Dispensary. A prize of 75l. is offered for the best design, 50l. for the second, and 25l. for the third. John Barras, hon. secretary, Rotherham, December 15, 1868.

VIENNA, AUSTRIA.—This Municipality require Designs, Plans, Estimates, &c., for the Erection of a New Hôtel de Ville. Open to all Europe. For Particulars, Austrian Consul-General, 21 Rue LaFitte, Paris. (See ARCHITECT, Jan. 2, p. 12.)

SOUTH METROPOLITAN SCHOOLS, SUTTON, SURREY.—For Designs for an Infant Establishment adjoining the present Schools. Premiums of 40 Guineas each for the three designs considered the best. February 2. J. Burgess, Clerk to the Managers, Vestry Hall, Watlington.

KINGSTON-ON-THAMES.—March 1.—Design for new School and Master's Residence. Cost not to exceed 3,000l. F. Gould, Esq., Kingston-on-Thames.

PETERBOROUGH.—Feb. 3.—Plan and Estimate for Addition to the Corn Exchange. S. C. W. Buckle, Peterborough.

KIDDERMINSTER.—Feb. 9.—Designs, Plans, Specifications, &c., for an Infirmary and Dispensary. E. Morton, Hon. Secretary.

DOVER.—Feb. 20.—St. Mary's Burial Board. Designs for laying out 9½ acres, for the purposes of a new Cemetery. Premiums 50l. and 20l. G. Fielding.

LEAMINGTON.—Feb. 10.—Royal Pump Room Gardens. Designs for a Memorial Fountain. A. S. Field, Leamington.

HUMFORD MILL, NEAR BEDDINGTON.—Plans and Specifications for a new Mill-dam. John Aynaley, Hartford Cottage, Bedfordton.

SMARDEN, KENT.—Feb. 10.—For Reseating and Restoring Smarden Church. Rev. F. F. Haslewood, Rector, Smarden.

SOUTHSEA.—For Erection of Three Houses and Stores in Buckland Road. Mr. C. M. Houghton, Architect, Elm Grove, Southsea.

GLOUCESTER.—For supply of 2,000 tons of Stone, various kinds, and best quality. George Whitcombe, Clerk to the Local Board, Gloucester.

CLIFTON, near BRISTOL.—For the supply of 1,000 tons of large Stone ('Black Rock' or other stone of equal quality), to be delivered at the rate of 50 tons per week. Robert Mercer, 45 Picton Street, Bristol.

TOPSHAM, DEVON.—February 8.—For Construction of a Storage Reservoir to contain about 10,000,000 gallons, together with Filter Beds, and other works attached thereto. Also for providing and laying about 95 tons of Cast-iron Mains, and about 34 tons of Cast-iron Distribution Pipes. Mr. William Serena, Topsham, Devon.

BATHENEA PARK.—February 5.—Erection of Church in Queen's Road. Mr. James Knowles, 1 Raymond Buildings, Gray's Inn.

CARDIFF.—February 10.—For Construction of a Brick Gasholder Tank, the interior diameter of which is 112 feet, and the depth 29 feet 6 inches. Henry Bowen, Gas Light Company, Cardiff.

HALIFAX.—February 1.—For Surveying and Mapping the borough of Halifax, which covers an area of 3,768 acres, to a scale of 80 feet to 1 inch. Printed specifications, &c., may be obtained on payment of one guinea by applying to Mr. B. Borrie, Borough Engineer, Halifax.

INDIA OFFICE.—February 1.—Proposals for the supply of Bolt and Sheet Copper. Director-General of Stores, India Office, Westminster, S.W.

PADDINGTON.—February 1.—For Carting Materials for Repairs of Roads in the Parish. Also for supply of Men, Horses, and Carts, at per day; supply of Gravel at per ton; Relaying and Repairing the Foot and Carriage-ways; each contract to be for 12 months. Apply, Vestry Hall, Harrow Road.

WARRINGTON.—Feb. 2.—For Well, Shaft, Tunnels, and Borehole on Sand at Winwick. James Riley, Water-works Company, Warrington.

TUTBURY.—February 1.—For supply of Gas for the Town District up to December 16, 1871. Inspectors, Church Sunday School-room, Tutbury.

BURSELEM.—February 2.—For a new Fire-engine of such power as to require 22 men to work it. Also offers for the fire-engine 'Hero,' for which a more powerful one is to be substituted. Joseph Lowndes, Town Hall, Burselem.

BIRKENHEAD.—February 3.—For Quarrying Stone in the Sutton Cutting on the Hooton and Helsby Branch of Birkenhead Railway. J. Wait, Cathcart Street, Birkenhead.

BURTON-ON-TRENT.—February 17.—Contract for Locomotive Engine Shed, with necessary Offices and Workshops. Plans, &c., to be seen at Mr. H. Woodhouse's Office, Stafford Station. Tenders to be sent to S. Reny, Secretary, Euston Station, London.

OXFORDSHIRE.—February 9.—For Purchase of Pudlicote Estate, either in lots or for the whole property. James Cooper, Esq., 5 Billiter Street, E.C.

ST. MARY, NEWINGTON.—February 1.—For six new galvanised Water Carts. For hire of seven Water Carts. Also for sale of three old Water Carts. H. and H. Chester, Vestry Hall, Walworth.

BRADFORD.—February 8.—For Erection of Church at Great Horton. T. H. Healey, Tyrril Street, Bradford.

TOWN MALLING.—March 11.—For Repair of Roads from March 25, 1869, to March 25, 1870. W. South Norton, Town Malling.

ST. MARY ABBOTT'S, KENSINGTON.—February 10.—For Carting and Carrying away Dust, &c. Reuben Green, Vestry Hall, Kensington.

BRIXTON (Loughborough Road).—For Erection of Nine Houses. Mr. Alfred R. Pite, Architect, 38, Bloomsbury Square. See Advertisement.

BRECON.—March 1.—Plans and Estimate for Alterations of County Gaol. A premium of 30l. is offered for best plan. Edward Williams, Clerk of Peace, Brecon.

CONTRACTS OPEN.

NORTHAMPTON.—February 16.—For the supply and erection of a Gasholder, 100 feet diameter by 30 feet deep, with columns, girders, &c. John Bunson, jun., Northampton Gas Company, Northampton. See Advertisement.

LEIGH, LANCASHIRE.—February 6.—For erection of Primitive Methodist Chapel and Schools. E. Pritchard, C.E.

BORDEAUX, FRANCE.—Grants for Curb Stones for the supply of the year 1869, to the extent of about 2,000l. Deposit by way of security, 120l.; preliminary deposit, 40l. All particulars to be obtained at the Hôtel de Ville, Bordeaux, *Division des Travaux publics*. Tenders to be sent in before February 4.

ROUEN, FRANCE.—Enlargement of the Palace of the Prefecture, estimate for the whole work about 28,000l.; and construction of a new wing to the Female Lunatic Asylum of that town, estimated at upwards of 40,000l. Amount to be deposited as security, 1,400l. in the former, and 1,600l. in the latter case. The tenders, as usual in France, to be made at a discount on the estimates. All particulars to be obtained at the *Bureau des Dépêches* in the Prefecture Rouen. Tenders to be sent in before February 11, when the adjudication will take place.

BIRMINGHAM.—Feb. 17.—Erection of Schools to accommodate 300 Boys, with Dining Hall, Workshops, Apartments for Masters and Teachers, and other Buildings. Martin and Chamberlain, Christ Church Buildings, Birmingham.

SPAIN.—March 1.—For Submarine Telegraph Cable. Urbano Montego, 155, Fenchurch Street, E.C.

HORWICH MOOR (near Bolton).—Feb. 6.—Erection of Primitive Methodist Chapel. Peter Butterworth, Horwich Moor, near Bolton.

GREAT HORTON.—Feb. 5.—For erection of Great Horton Church. Messrs. J. H. & F. Healey, architects, Bradford.

STHAND UNION.—Tanner's End, Edmonton.—For the Erection of a new Workhouse and Subsidiary Buildings, &c. Feb. 9. By order, G. Bow Street, Covent Garden.

MONMOUTH.—For erection of new workhouse for the Monmouth Union, Feb. 5, 1869. Edwin Richards, clerk to the Local Board, Monmouth.

CARDIFF LOCAL BOARD OF HEALTH.—Feb. 28.—For the construction of a New Outfall Sewer, Channel, and Works connected therewith. Geo. Salmon, Town Hall, Cardiff.

SHEFFIELD.—Feb. 10.—For the erection of Two Wings with Central Building and Offices for the new South Yorkshire Asylum, at Wadley Park, near Sheffield. Bernard Hartley, West Riding Surveyor, Pontefract.

WALTHAMSTOW SOUTH-EASTERN SPECIAL DRAINAGE DISTRICT.—Feb. 8.—For the construction of the drainage works in the above district. The works comprised in the contract will be about as follows:—800 yards of 24-inch circular brick sewer, 730 yards of 18-inch pipe drain, 160 yards of 15-inch, 1,670 yards of 12-inch, 190 yards of 9-inch pipe drain. Wm. Houghton, Clerk to the Committee; Messrs. Houghton and Wragg, 15a, St. Helen's Place, E.C.

LEEDS.—Feb. 4.—For supply of 17,600 tons of Cast-iron Socket Pipes, of 30-in. diameter. Mr. C. A. Curwood, Town Hall, Leeds.

ACTON, MIDDLESEX.—For Erection of Concrete Homes. Mr. E. Wyndham Tarn, Architect, 34 Mecklenburgh Square, W.C.

HIGH WYCOMBE.—For Reconstruction of Roof of Hughenden Manor House, Bucks. Mr. Arthur Vernon, Architect, High Wycombe.

BATH.—Feb. 4.—For reconstruction of Sewers in North and South Parade, &c. Mr. Alfred Mitchell, 3 Fountain Buildings.

ST. JOHN, HAMPSHIRE.—Feb. 4.—For Paving and Kerbing and Road Materials. William Gribble, Vestry Clerk, New End, Hamstead.

DOVER.—Feb. 10.—For Reflooring and Roofing the Church of St. Margaret at Cliffe. Mr. Christian, 8a Whitehall Place, S.W.

WADLEY PARK, NEAR SHEFFIELD.—Feb. 10.—For Erection of Two Wings, with Central Building and Offices, for the new South Yorkshire Asylum. Mr. Bernard Hartley, Pontefract.

RADELL & SAUNDERS have much pleasure in informing their friends, and the Building Trade generally, that to facilitate building operations during the winter season, they have provided a large stock of well-seasoned Corsham Down Block Stone. Bath Stone Office, Corsham, Wilts.—[Advrt.]

STONE BROTHERS are now supplying Corsham Down Stone—Well seasoned, fit for immediate use, and of the best quality. Box Ground Stone—Matchless for even texture and durability. Farleigh Down Stone—Matchless for good quality and large sizes. Combe Down Stone—Fine in texture, free working, and very durable. Prices, and cost of transit to any part of the kingdom, on application to the Bath Stone Office, Bath.—[Advrt.]

**WM. OLIVER & SONS,**  
 MAHOGANY, WAINSCOT, DEAL, AND  
 TIMBER MERCHANTS,  
 120 BUNHILL-Road, LONDON, E.C.  
 The most Extensive Stock of every kind of Wood, in Planks and Boards, dry and fit for immediate use.



# The Architect.

## TWO LITTLE BILLS.



**A**T the conclusion of every session of Parliament it is common to witness what is called the 'slaughter of the innocents,' and the sacrifice is submitted to by those interested in the victims, with some hope of future life; for it frequently happens that the same innocent has to be born and born again, to die as frequently, more or less innocently, and at the last no practical result is secured. Important interests, not of a national character (though otherwise public enough), are constantly being set aside for the exigencies of more pressing business, and crying evils have consequently to be endured long after every one has seen that they ought to be abated, and vested interests, long after they are condemned, continue to override public rights.

One advantage, it must be allowed, rises from this delay. Matters are thoroughly investigated, opinions expressed, opposition has time to show and exhaust itself, difficulties are pointed out and overcome, and all manner of counter-propositions get 'ventilated,' as is now the term. Happy is it, however, if the 'end is peace.' A good working measure is not always the result of this process; injurious compromises and hasty arrangements but too often mar a good work, and jobbery completes what common sense has begun.

Amongst those innocents to be revived this session there are two little Bills (little only in the sense of being local rather than national) which affect, or may affect, all dwellers in this Metropolis; those who build houses, and are called fools for their pains, equally with those who are called wise men and occupy them. The Bill for the Improvement of the Local Government of the Metropolis,\* whether by the carrying out of the idea of the municipalities or otherwise, and the Metropolitan Buildings and Management Bill,† together affect in all their provisions the pockets or the personal feelings and comfort of every inhabitant of this vast city; and as the promoters of these Bills are buckling on their armour for the fight, and intend to press on the warfare, even during this busy opening session of Parliament, it becomes our duty briefly to draw attention to the proposals contained in both Bills.

The Municipalities Bill is a definite plan for establishing an organisation in the whole Metropolis, similar to what is enjoyed in large towns, such as Liverpool, Bristol, &c., and, indeed, in the City of London itself, with the hope of effecting thereby such desirable reforms as improved gas and water supply, increased efficiency in police arrangements, real cleansing and watering of streets, more perfect representation of the ratepayers who find the money, and more direct responsibility in those who spend it—in fact *economy* and *efficiency* combined.

Whether the establishment of separate municipalities in connection with, or centralised in, the ancient one, which would remain enthroned at the Mansion House—increased in glory, as a sun or a planet by its revolving satellites—be the best mode of effecting these reforms, may be an open question; but we note with satisfaction that the Home Secretary replied distinctly on this head to a deputation which waited on him last week, that he was in favour of municipal government, for a decided tone and a definite policy is much wanted in home affairs.

As to the principle of the Bill as it now stands, a great deal can be said in its favour from an antiquarian or historical point of view, and this is never lost upon an English community. There can be nothing to urge against the fitness of Londoners for the same kind of local government which a portion of them have carried on for ages and maintain with steadfast faith, and for the same institutions which are found suitable for their fellow-countrymen wherever they are assembled in sufficient numbers to make it desirable to have any real local government at all. With reference to the necessity for some such measure, it is a deplorable fact that the postal, political, police, parochial, and the many other divisions or districts necessary for or at least existing in this Metropolis, differ from each other in such a manner that it baffles even a Home Secretary to arrange the details of any comprehensive scheme. Mr. Bruce even has gone so far as to say that in drawing out certain educational plans, he was obliged to omit the Metropolis itself for want of sufficient organisation therein, or because of the conflict between the immense variety of organisations therein existing. How can we be surprised, then, if vestries cannot hit upon any form of combination, except in so far as they are compelled by the Metropolitan Board of Works; or if the lighting, paving, and so on, of the Metropolis are conducted in the most haphazard, uneconomical, and inefficient manner?

The arguments in favour of some remedial measure appeal to the purse, the heart, and the very life of all ratepayers and others. To

the purse, in the waste of means and the exorbitant demands necessary to meet its increasing proportions; the heart, in the bold beggary seen at the corner of every street where stand a boy and a broom—often, alas! a grown-up man or a girl—to pretend to earn the coppers they beg, and yet live far better than honest workmen with families at home; to the life, when the police are paid ever increasingly—though not too well—yet without repressing violence and robbery, or even securing the thief or the property after the deed is done. We have satisfaction in noting that the tide of public favour seems setting in favourably for this branch of those administrative reforms so sorely needed in this land of liberty and vested interests.

For the other measure referred to we must bespeak equal attention, though it can hardly in any sense be called an 'innocent,' sinning as it does in many very important particulars against the public good. Of course, if the municipality scheme is at all adopted, it will become a question what is to happen as to the Board of Works, its very existence being affected; but, meanwhile, this Board is pushing on (more, as it seems to us, for the sake of personal power than for public advantage) a new Building Act, in many respects inferior to the one now in force (that of 1855), and in which—where it improves upon this one—the improvement is so complicated with other clauses for the worse, that it would be far better to add a few good clauses, embodying amendments, to the present Act than to bring in a new Act abolishing that of 1855 altogether.

That this is the feeling of many who know most about the matter we are in a position to assert; and in fact the resolutions upon the Draft Bill passed by the District Surveyors' Association, and the Report of the Royal Institute of British Architects, are sufficient to condemn the Bill as a whole. Individual paragraphs which contradict each other, or which are impracticable, are pointed out in detail in these papers.

One contradiction especially is so glaring that it must be referred to, if only to point out to what an absurdity the pursuit of one idea—without further consideration—will reduce the best intentioned legislation. The proposed definition of 'fire-resisting materials' is evidently framed after the ideas thoroughly understood amongst the profession, that in most cases of fire, iron is worse than useless for *fire-proof* purposes, and that stone, even granite, is crumbled and split up by great heat or the action of the flames. Yet who would dream of saying that iron and stone were not *fire-resisting* materials, while wood was of that nature?

It is certainly well known that beams of oak or teak, or other hard wood, are often more likely to save a building and the goods therein, and possibly the lives of the firemen, than beams of iron and floors of stone; but would this narrow view of building operations and this restricted idea as to building materials lead to improved construction, or even improved insurance rates? Let the fire offices reply—we believe not. On the contrary the condemnation of stone as a material unworthy to be used where fire-resisting buildings are to be erected is simply absurd, for surely it is something against the spread of fire to have unflammable walls and staircases. Walls must be used to carry stone and ironwork, whereas woodwork can be made independent of walls.

To leave this remarkable contradiction, which is after all but the embodiment of some professional crotchet of the Fire Brigade, we proceed to object to the manner in which the Bill seeks to deal with the district surveyors, at present a body of gentlemen independent and yet responsible—not mere salaried clerks to attend to the letter of the law, so much as directors for good, as far as in them lies, of the buildings of the Metropolis, and often by their counsel and advice able and willing to do more for the assistance of the builder than the value of the fees received. Yet the aim of this Bill seems to be to get the whole of the districts under the direct control of the Board in such a way that a district surveyor after his appointment will not know his position, and, liable to be superseded at pleasure, may at any time be forced either to give up his position without compensation (for such are the hard terms of engagement of all new appointments) or to accept any salary the Board may direct, while he still collects the fees to hand over to the Board. If paid by salary, he is to give up all work on his own account 'within the limits of this Act or elsewhere.' It is needless perhaps to observe that we hope and believe the Legislature would never sanction such arbitrary powers, which may be exercised harshly by a body of men who in their individual capacities perhaps would not do an unkind action.

It is curious to find, also, the Board seeking powers to appoint an assistant district surveyor to take any part of the fees (how much to be decided by the Board alone), without even the consent of the original holder of the district himself. Thus, not even the present possessor of an income derived from an office which he may have held years before the Board was appointed would be safe; but at any time he might have an assistant thrust upon him, taking such part of his income as the Board may think proper, not only entirely without his consent, but against his will. That the Board might do better by conciliating its best officers, by placing them in the position of superiority rather than dependence, we firmly believe. No representatives of the Board can be of higher class than those who have given their faithful services so long to the establishing of a comprehensible Building Act. It must be remembered, too, that should this class of officer cease, the administration of the Act will be very different for all buildings from what it has been, and strict officialism will be a poor substitute for enlightened professional knowledge enlarged

\* Lately under the charge of Mr. Mill, now taken up by Mr. C. Buxton.

† Brought in by the Board of Works.

by that sympathetic feeling which is derived from having personally to feel the same bonds as those upon whom they must be imposed.

It is in the interest of all we speak, and not that of the district surveyors alone. That the Bill is to be improved and amended before being submitted to Parliament we are aware, and for this reason we have been the more careful to point out its chief faults as they appear to us. It is our earnest hope that the framers of this measure, taking in good part the criticisms which have been made, will eliminate without regard to personal predilections anything which does not directly tend to simplify the Act itself—encourage really good building and do justice to its band of district officers.

The Board has done immense service to the Metropolis, and the very faults of the Bill prove the energy and good intentions in most respects of its framers; but paving materials of a different nature than good intentions are required for the Metropolis.

## HISTORY OF ARCHITECTURE, ENGINEERING, AND ART IN EGYPT.

TO the Architect, the Engineer, and the Decorative Artist, the study of Egyptian Art offers an equal interest. We find in the valley of the Nile the most ancient buildings in the world of which we can ascertain the date. We can trace the gradual modification of their architecture for three thousand five hundred years. We find the remains of engineering works as admirable for their audacious magnitude, as they are venerable for their extreme antiquity. We can trace the operations of Nature herself, for a period of apparently undisturbed continuity, of which we have no similar example in the Old World. We may watch, at the present moment, the progress of a French engineer in repeating, and improving on, the work of Pharaoh Neco. We shall have an opportunity before long of watching the results of the struggle of modern engineering with the sands of the desert on one hand, and with the silt of the Nile on the other.

To study Egyptian learning is not easy. Few can command the time to do so on the spot; and a hasty visit to the Pyramids or to the tombs, unless guided by some special instruction, is more effective in kindling the imagination than in informing the intelligence. It was the conquest of Egypt by Buonaparte that first opened the stores of its antiquities to the view of Europe. Some of us can remember the interest excited by the exhibition, at the Egyptian Hall, of Belzoni's models and drawings. Since that time the labours of English travellers have succeeded one another with some rapidity. But the French, the Germans, and the Italians, have far exceeded us, in the patience of their investigations and in the beauty and value of their delineations. It is to a Frenchman that we owe the discovery of the key to the long-lost learning of the hieroglyphics. It is to a Frenchman that we owe the discovery of that series of sepulchres of the God Apis, under his successive incarnations, that has restored a positive value to the chronology of the famous dynasties of Manetho. It is to a German that we owe what we may consider as almost the only truly admirable attempt to reduce the ancient history of Egypt to the precision of date.

It is a matter of humiliation to those who have some better acquaintance with what is known, and with what has yet to be known, of Egypt, to witness two of the recent English lucubrations on the subject. In one the author, starting from the assumption that his own reading of sacred history must outweigh any positive testimony of the Egyptian monuments, has piled together, as contemporaries, long lines of successive dynasties. In another, a man of science, starting with an hypothesis as useless as it is incapable of verification, has come to the conclusion that a rude sarcophagus, the contents of which can only be admeasured approximately, and that by a most complicated process, was a standard measure of capacity. The learned professor has given us a measure of his judgment in the fact that, while measuring with the utmost accuracy the widths of courses of masonry in which no one but himself takes any great interest, he was content to determine a matter of real geodesic importance, the length of the base of the Great Pyramid, by the reliable aid of—A TAPE!

It is therefore a matter of congratulation to all interested in this important subject, that the French Government, at the enlightened instance of the late M. Fould, has subscribed for a sufficient number of copies of a noble work on the history of Egyptian art, now in course of publication by M. Prisse d'Avennes, to ensure the completion of the series. This publication will contain, when complete, 180 chromo-lithographs of folio size, printed with the utmost perfection attainable by this constantly-improving process. These fine plates will be accompanied and explained by a quarto volume of text, freely illustrated by vignettes.

As far as the sheets have yet proceeded, the chief interest of the engineer will be directed to the very beautiful surveys. At a time when the directors of our own Ordnance Survey, which we may justly regard as a triumph of cartography, are introducing a new style of *hachure*, in which positive information is given in pictorial form, it is especially interesting to trace the progress of our neighbours, the engineers of the *Ponts et Chaussées*. The island of Philæ and the ruins of Thebes are represented by what we are in the habit of calling brush drawing. We are not able to derive from this method of representation the same definite degree of acquaintance with actual differences of level that may be attained by the use of contour lines, or even by the Ordnance *hachures*; but, on the other hand, the perfect representation of the country resembles that of a bird's-eye view. Were we to look down on the shores and islands of the Nile from a balloon, we should see something exactly resembling the beautiful drawings of M. Prisse d'Avennes—exactly, that is to say, in all but one particular. Where the traveller would behold half-buried and scarcely distinguishable ruins, the student of the plates sees the defined outlines of temples, and avenues, and tombs, sharply and clearly brought before him, as they would have been to an aerial spectator in the time of the great Diospolitan kings. The works and the ruins of nature are represented by the free-hand artist;—the masonic labours of man are defined by the mechanical draughtsman.

The greatest Egyptian engineering works date from a very remote antiquity. The founding of Memphis, by Menes, is placed by Brugsch 4455 years before the Christian era. After the close of the first and second Thinite dynasties, the seventeen monarchs composing which reigned for 555 years, five dynasties reigned at Memphis for a period of 1,046 years before the seat of the monarch was transferred to Thebes; two successive collateral dynasties reigning at Heracleopolis. The excavation of Lake Moeris, the most famous engineering work in the world, dates from the close of what is called the Old Empire, being attributed to Ameses, the seventh king of the 12th dynasty, which was the second Theban or Diospolitan house. This monarch died 2207 B.C. The Labyrinth bears the name of his predecessor Lamares, the fifth king, who was the immediate successor of the famous Sesostris, or Ousertesen the Second. But the Pyramids reach to a far remoter date, the Great Pyramid having been indisputably erected not later than the reign of Souphis I., the Cheops of Herodotus, who died 3528 B.C. Although this pyramid is entirely unsculptured, in that course of blundering demolition which moderns call discovery, a set of relieving apertures, which were constructed over the central chamber, has been broken into, and at the back of the enormous stones, which perform functions similar to those of relieving arches, are to be seen, traced in red pigment, the well-known hieroglyphic of Souphis. The explanation given by M. Prisse d'Avennes of his plates is not yet forthcoming, but in one of the chromo-lithographs we recognise the famous red monogram of Cheops.

It would occupy too much space for us now to enter further into the description of so much of this splendid work as is already presented to the public. It is unnecessary to say that the architectural information will be fuller and more detailed than that which relates to ancient hydraulic works, or other branches of engineering. Slow as has been the process of change, still, to one acquainted with the subject, there is no confusion between the architectural characteristics of the successive periods of the advance or decline of Egyptian art. With all our modern appliances, with railways for the transport of building material, with the invaluable service of the auxiliary steam engine and of the hydraulic ram at our command, the engineers of the nineteenth century after Christ must stand in respectful awe in presence of the relics of the mighty works of their Egyptian brothers, who preceded them by no less than fifty-four centuries.

## MR. RUSKIN ON FLAMBOYANT ARCHITECTURE IN THE SOMME VALLEY.

A PAPER on the above subject was read by Mr. Ruskin at the Royal Institution on Friday, January 29; Sir Henry Holland in the chair. Mr. Ruskin said that he should omit the introduction he had prepared, 'for there is more to be said on this subject than can be got into the limit of one hour, and I am anxious to get you at once into the Valley of the Somme. You all know perfectly well that Gothic Architecture lasted for three hundred years, and no more. It was born in 1200 and expired in 1500. There are, roughly speaking, three schools into which it may be divided, and those three schools are, a massive school, having heavy stones, first, like Stonehenge; and then carved on the surface—which is the beginning of all Gothic; a school where carving has become important and organic forms are well represented—this is the central school of Gothic; and a school where organic forms are disliked and structural ones pursued.

'It is a vital question for architects and an interesting question for other people, by what fault did Gothic Architecture fall? did other styles take its place because they were better, or because no more could be got out of Gothic? And for that reason I wanted to show you pure Gothic Architecture at its last form, and the last good Gothic that I could find in Europe I knew was in the Valley of the Somme. This is a long valley cut in the chalk—perhaps a little more regularly than our English valleys—surrounded on both sides with pasture land. It is covered with larkspur and blue bells, and the valley itself is full of peat, aspen trees, and churches, and all the churches are good, and are either Flamboyant or before it. The four important Flamboyant churches of the Somme valley are, 1. St. Wulfran of Abbeville; 2. The Church of the Holy Sepulchre, Abbeville; 3. St. Riquier, five miles north of Abbeville; 4. Chapel of St. Esprit at Rue, two stations west of Abbeville. The village of St. Valéry, at the mouth of the Somme, was more or less connected with the history of the fall of three dynasties—of Charlemagne, Saxon England, and Suabia. With the latter, however, only because the decisive battle in Italy was decided by the courage of a Count of St. Valéry, trained in these Norman wars. It was in this valley of the Somme that pure Gothic expired, for it had failed fifty years before in Flanders, and had ceased in England for more than double that period.

'Are you not inclined to ask how it came to pass that a thing which had existed for three hundred years should fail, and what were the means of its fate? It is said that Gothic Architecture perished before the conjunction of the Reformation and the revival of letters. But the two were not allied. The Reformation was an illiterate movement, which, if it could, would have destroyed Gothic and all other kinds of Art. But revived Literature ignored Gothic because it was not fine Art enough, and because it thought it could put something better in its place. Yet supposing that these things had happened earlier, that the invention of printing, the revival of letters, and the Reformation had occurred in the reign of Louis IX., and had met Gothic in its youth—for there was nothing in the nature of things to prevent it occurring—that would have happened which did happen at Florence, where the revival met Gothic art in full vigour. The Gothic would have received the Classic into itself—would have

incorporated it as Dante did classic literature. Gothic architecture was rotten to the root, so that no more grafting of branches was possible, then it fell. And the form of this Christian architecture that I have to show you is its last, when its hours were numbered by its own weakness. I have asked by what faults Gothic fell. The faults of the work of art are those of the workman, while manufacture is the work of hands only. Art is the work of the whole man; all art is either infection or education.'

Here Mr. Ruskin referred to the illustrations hung up; and pointed out a bit of perfect Gothic naturalistic sculpture of living foliage from Bourges, illustrated by a fine drawing (enlarged from a photograph by Mr. A. Burgess), and, as a contrast, a bit of perfect Flamboyant from the west porch of St. Wulfran at Abbeville (enlarged from a photograph by Mr. Allen). He then continued, referring to the Bourges foliage: 'You know Michael Angelo would never have carved such a thing, beautiful as it is. He would have thought his time wasted in such fantastic work. You know also that the man who built Stonehenge could not have done it. Do you believe that Fagan or the "Artful Dodger" could have cut it? No; you feel that the man, and nobody but the man, who carved it could have done it. When you understand it you understand the man. Art is but the exemplification of the spirit of man, by which his powers are displayed and reproduced, and I hold it as one of the most sorrowful facts that English gentlemen should be led into the fallacy of denying this fact. Their confutation is written in the history of all great nations, which has always run the same course, and the faults by which Gothic fell were the faults of the men who built it.'

'Now concerning this Flamboyant architecture of the valley of the Somme, let us enquire what are its mere physical properties? What is it built of? It is built of chalk, a material that can be cut deep, fast, fantastically. It is black and white; sketching as against true form; it is chiselled painting rather than carving. A perfect knowledge of effect is shown; the touch is deliciously proportioned to the distance from the spectator. Going up the spire at Abbeville you find the work constantly getting less and less delicate, always perfectly sufficient to give the required effect from below.'

'Flamboyant work, if of stone in churches, was of wood in houses. That is another physical condition, and its foliage is such as can be happily rendered in wood. A bunch of withered oak leaves makes a perfect Flamboyant crocket. The leaves of the Abbeville work are shrivelled, at Bourges smooth.'

'The next characteristic has mingled physical and moral causes. This is the architecture of a damp climate; each statue, consequently, had to be well protected. Morally, men's houses grew more and more important; solitude was more and more valued; so the statues were no longer grouped in vast numbers, but each statue had its own tabernacle, and tabernacle work became a characteristic of the style.'

'The next character is not a physical one—excess of ingenuity. The subtle contrivances of late Gothic construction are delightful, but there is no room in them for human passion.'

'Next, this is interwoven work, and it is separated from our English Perpendicular essentially by this characteristic. This involution exists in all the arts—in music as well as sculpture:

The moon on the East oriel shone  
Through slender shafts of shapely stone  
By foliaged tracery combined,  
Thou wouldst have thought some fairy's hand  
Twixt poplars straight the osier band  
In many a freakish knot had twined;  
Then framed a spell when the work was done,  
And changed the willow wreaths to stone.

'The next and the essential character of Flamboyant is a bad one—Relaxation—a delight in fluttering lines in preference to the elastic lines of organic life.'

'The contemplation of death, a refuge from the life of the times, was a characteristic of Flamboyant art. Albert Dürer's work shows its noblest phase. Sir Walter Scott has caught the character of that Northern gloom in the contemplation of death in his Rosabelle.'

'The main fault of this architecture was not that it was florid—all true art is rich—but that it became unreal; its profusion became heartless; it had ceased to be sincere. There is just now a crusade against sentiment, but it is none the less true that Gothic fell because it had lost its sentiment—its sensibility. True architecture can only be built by—(1) a thoughtful nation; (2) a pure nation; (3) one that has a common pride; and (4) one that has a common wealth.'

1. A thoughtful people. Art cannot be built by clowns or bores.

2. A pure people. Art can only be gained by men as men distinct from brutes. Art is not the work of lambs, or swine, or serpents, but of men.

3. Good architecture cannot be built by a modest people; but your pride must be in what you all are to be, a common pride. We, on the contrary, want to do ourselves what others do not do—to be what they are not.

4. For common well-being, perfect unity among all the workmen is needed. It is the greatest glory of a head craftsman to be poor. Nothing is possible for us in architecture where the master workman has a commission on the cost. Pay him a salary—a high one if you will, but not a commission.

'Common well-being must be common as regards those for whom you build. You must not build for pleasure in the front of the

house, when there is want at the back; nor neglect the true meaning of the precept of Ellesmere in Mr. Helps's "Realmah," "Never mind the outside."

'Never mind the houses which look towards the Park, but those which face to Seven Dials. You have just heard from Dr. Hawkesley that you are paying seven millions a year for your London poor, and yet that pauperism is on the increase. Now the *Pall Mall Gazette* seemed much pleased with this fact of the seven millions, for to them it showed what an interest you take in the poor. On the contrary, it shows how much you don't care for them—how much you are prepared to pay as a fine for neglecting their misery. If you would but spend the half of it in love, if you would leave off burning candles by day in your churches, and spread instead a light over the darkness which prevails, you will be able to spend the other half of this seven millions in magnificence. Then again there will be true shrines, true saints, and true tabernacle work; then you will be able to erect a grand Flamboyant Dragon with a triumphant St. George over every poor man's dwelling.'

This lecture was illustrated by a magnificent collection of studies, paintings, photographs, and sketches, fifty in number, of which about fifteen of the most exquisite were by Mr. Ruskin's own hand. These included a noble study from the remains of the fresco of St. Catherine by Luini, in the Monasterio Maggiore at Milan, shown as a perfect type of the rare unison of ideal purity of conception with consummate decorative and pictorial power—as 'Purist art of the highest school.' With this were grouped examples of high realistic art in painting, and studies of the highest class of Gothic art. As illustrations of Flamboyant art in the valley of the Somme, numerous sketches and some drawings from photographs were shown; but in addition, splendid studies of the Flamboyant element in Greek art, in Central Italian art, in German art (Dürer and Holbein), and in natural form were shown, together with several illustrations of 'Northern Gloom in the contemplation of Death,' shown in its noblest phase in Dürer's well-known Night and Death; other illustrations, as for example, a Dead Christ, by Holbein, 'were intended to show the dark and sad manner of contemplating death which gradually corrupted both the religion and art of the Northern nations.'

## ARCHITECTURAL EDUCATION.

(Continued from page 13.)

IN our first article on this subject, we drew the attention of our readers to the great necessity for some extension of the narrow sphere within which the education of architectural students at the present day had been gradually allowed to decline. From the description we gave, it will be observed that the changes which have been brought about from the rapid advance of science and art, and especially science, during the last fifty years, have been effected so gradually, that, although they have not entirely escaped notice, no provision has yet been made to engraft them on the old system of pupillage; and the consequence is, that, at the first onset, the difficulties which beset us on every side are so great as to call for, as it were, the labours of a Hercules to cleanse this Augean stable of the accumulated neglect of forty years. And when we say the first onset, we do not mean to assume for an instant that we are now, for the first time, bringing forward new or original ideas, for the subject has been one of constant inquiry and demand during the last twenty years; but that, as the changes to be effected must be radical, the first onset or attempt to carry them through will involve many difficulties, and can only be undertaken under the most serious consideration. As long ago as 1843, Mr. Bartholomew, in a book on Specifications compiled by him, suggested the establishment of a Royal Masonic College, with professors on every subject connected with the architectural profession; his scheme was somewhat indefinite and wild, and presented a strange contrast to the practical information contained in the rest of his book: it seems, nevertheless to have caused the formation of a society, called the 'Freemasons of the Church.' A number of meetings, or chapters, were held, in which the members confined themselves, at first, to the nomination of various professors, without, however, giving them any work to do; and afterwards, proceeding to the discussion of archeological questions chiefly, abandoned their first apparent intention of establishing an educational college.

The first real step taken for the improvement of architectural education was the formation of the Architectural Association, in 1847; a society which has since maintained its position as one of the most useful in the promotion of self-education; and the immense increase in its numbers during the last three or four years may be regarded as the clearest index we have of the maturity of the question of reform at the present day. It was not to be supposed, however, that a society composed only of students, with limited means, and meeting only one evening in the week, could effect much material change or attain any important status in the profession; but we believe that its continued existence in so prosperous a condition has been a living protest against the anomalies and defects of our present system of education.

This seems to have been felt by some of the more energetic members of the Royal Institute of British Architects, who in 1860 conceived the idea of establishing examinations, partly to create a stimulus for work by laying down a curriculum of study, and a test of proficiency or distinction in the same, and partly to increase the power and position of the Institute by constituting in that body an University to which all recognised architects in future must belong. As might have been expected, this latter intention was at once quashed, not only by members of the Institute itself, but by all the Architectural Societies throughout the kingdom to whom the Institute appealed for support; and this had the effect of cooling at first somewhat of the enthusiasm with which the question would otherwise have been taken

up. However, the scheme was established, and the first examination took place in December, 1862, with a certain amount of success. Two other examinations have since been held, the number of candidates diminishing each time; so that thus far the whole scheme has certainly been a failure, the reason for which we shall inquire into at some future opportunity.

The next measure of importance (though indirect in its bearing upon the profession with which we are concerned) was that undertaken by the Commissioners appointed to inquire into the Royal Academy. Their Report, issued in 1863, seems as yet to have had but little effect, except so far as it may have led to the removal of that body to Burlington House; but the evidence given by the two architects who were examined is interesting, if only for its strange and contradictory nature. Mr. Tite, for instance, frightens the Commissioners by telling them that, 'in order to learn architectural drawing, large boards and squares, and large means, are required, such as he hardly imagines an institution like the Academy could make the students avail themselves of;' and when asked whether the Royal Institute of British Architects supplied everything that was required in the more technical part of architectural drawing, answers 'Yes; I attach the greatest possible value to the technical and scientific discussions at the Institute, which could not of course be introduced into a general establishment. At the Institute men of large experience meet to discuss questions in a language which they thoroughly understand, which is not generally understood in the world; and by putting our experiences together, great knowledge is communicated to the younger members who attend. That could not be done at the Academy; nor do I see how the mechanical teaching of architectural drawing could be managed in any other place than where it is generally managed—namely, in the office of the architect himself.'

Of course, with such opinions as these coming from the present President of the Institute, it is almost useless to look for much reform from that body unless there be a sufficiently strong adverse opinion on the council. We believe that at the present moment there are two students only in the Institute, and the drawings sent in last year in competition for the students' prizes were, it is said, so bad, that the council were ashamed to have them hung up in the room of meeting. There was one point, however, of importance elicited in the evidence, viz. that it was Mr. Tite's custom (and he it said to his honour) always to send his pupils to the Governmental School of Design, or to a private master, to learn drawing. If this were the customary practice nowadays, we should not probably be so energetic in our present movement. The evidence of Mr. Tite unfortunately nullified that of Mr. Scott, who strongly urged the establishment of an architectural drawing school within the walls of the Academy; and doubtless feeling that the result of such contradictory evidence as his own and that of Mr. Tite would be nil, as in fact the Report of the Commissioners shows, Mr. Scott read an admirable paper before the Architectural Association, in 1864, in which he deplored the defective state of artistic education as existing in the pupilage system, and earnestly advocated the establishment of a school, which was eventually termed the 'School of Art accessorial to Architecture.'

In order to forward this scheme, delegates from the Institute, the Royal Academy, the Architectural Museum, the Architectural Exhibition, and the Architectural Association were nominated to serve on a committee. There seems, however, to have been some secret opposition, or at all events lukewarmness, towards the scheme, either on the part of the delegates or the Institute to whom they sent in their report, for the matter was allowed quietly to drop; until Mr. Burges during the last session repeatedly called attention to it, and early in this session letters were sent to the secretaries of the four latter societies, above named, from the Institute, asking them to reappoint their delegates to meet their own. This has just been done, and a committee of twenty-seven gentlemen representing the various institutions specially connected with architecture will now proceed to the reconsideration of this scheme, which it is to be hoped will be taken up in earnest. What the result will be, it is of course impossible to say; but we cannot help thinking that if four years ago the numerous advantages which could, with slight modifications, have been obtained from existing institutions, such as the Royal Academy, South Kensington Schools, and King's and University Colleges, had been turned to account, we should now have been in a position to establish at once a special school such as that mentioned in the report sent in to the Institute in 1864, which comprised instruction in the drawing and modelling of organic forms with a view to the attainment of such an accurate knowledge of their structure as shall enable the student to apply them in architectural decoration with power and truth, and to form an intelligent comparison of their treatment by the masters of every period in art, and in the monuments whether of ancient or modern times.

It is now four years and a half ago that this report was drawn up, and so much progress has since been made in the liberal advance of this question, that a school of ornamental drawing only will scarcely be sufficient to meet the present wants of the profession: and besides, inasmuch as architectural ornament is, and always has been, subservient to architectural style, the latter must be taught first to enable the student to understand and appreciate the former, and, in fact, to form the foundation on which alone a proper distinct knowledge of the various styles of ornament can be based. What therefore is wanted, is a school in which architectural drawing, the characteristics of style and its development, and the elementary principles of composition and design, would be taught practically, not by lectures, but in the solution of various problems given from time to time; the study of the figure and of ornament would form also a very essential part of this course.

It might also, and we believe will, form part of the province of this Committee which represents so many societies, to take up the whole question of architectural education. Mr. Edis, in an able article which we printed in our last number, urges the consideration of two very important points bearing upon the general question of education:—1st. Compulsory examinations, and, 2nd, a revision of the scale of charges lately issued by the Royal Institute of British Architects. It is certainly unfortunate, with regard to this latter question, that so soon after the publication of a fixed scale of 5 per cent. on all works, several of the members of the Institute should have been

willing, in the numerous competitions for hospitals and unions which have lately taken place, to accept less; and still more to be regretted that a circular should have been sent round to all the members, calling their attention to the infallibility of the 5 per cent., as being the custom not only in England but abroad, when it is well known that throughout Germany the scale of charges varies according to the nature of the work and its extent, and that in France Government architects receive only 3 per cent., their inspectors and clerks being paid by Government. With regard to the compulsory education which exists abroad, and which Mr. Edis advocates in England by the establishment of compulsory examination, it must be remembered that it is in consequence of the academical system which prevails throughout France and Germany, and which Mr. Edis affects to repudiate, that architectural education has become compulsory either by law or by custom in these two countries; and, therefore, until some such definite course of instruction for architects as that laid down abroad exist in England, it would be impossible to establish compulsory examinations here.

The subject, however, is by no means new, and was carefully considered by the Institute in 1860-62, at the time when they established their voluntary architectural examination. Whether since that time any change of opinion has taken place, the labours of the committee, to which allusion has been made, will be able to find out. We are sure that there is no architect who would not wish to see his profession placed on the same footing as those of law and medicine; at the same time, it must be patent to all that the education must be as systematic and good in architecture as it was in the above two other professions at the time of their obtaining their charter.

## BUILDING CONTRACTS.

By a LONDON CONTRACTOR.

IN a previous article on this subject the importance attached by contractors to the insertion of a full and fair arbitration clause in contracts was pointed out. Practically, it will be found that all questions which arise on building contracts are submitted to some form of arbitration. In cases where no reference clause has been inserted, an application to a judge at chambers will obtain the appointment of an arbitrator. Where this method is not adopted, but an action is brought, the same result will be arrived at by a somewhat longer and more expensive process. No sooner will the presiding judge have ascertained that the case before him relates to a builders' account than it will be summarily referred. In both these cases the referee will be a barrister, and in this arrangement there are certain manifest advantages, the arguments in its favour being at least as old as the Platonic Dialogues; but it would be useless to discuss them here, since nine tenths of the builders and nineteen twentieths of the architects are in favour of an architect as arbitrator. As this result can only be obtained by a special clause to that effect, all sides will be agreed as to the necessity of its insertion, and the only point left for discussion would appear to be as to who should be appointed arbitrator, the architect of the works or an independent one? *Solitur ambulando.* The question is answered in stating it. In favour of appointing the architect of the works it is urged, however, that in his present position he stands between the employer and the contractor as an independent umpire, and that he has no pecuniary interest which would be liable to bias his judgment in any questions which may arise between them. Granting that architects, as a class, are a high-minded set of men who would not lend themselves to any proceedings they considered unjust, this only places them on a level with the best men in the other professions; but it is to place them above that level to require that in all matters between the contractor and the employer by whom they are nominated and paid, they shall bring to bear the mind, not of an advocate, but of a judge. Moreover, it is extremely doubtful whether employers generally would agree to this view of an architect's duties, a view not entertained with regard to any other professional man. If it were true, however, in practice as it is in theory, that the questions of difference which arise on a building contract were between the employer and the contractor, the objection to the architect being also arbitrator would probably be first raised by the architect himself, who would generally prefer to be relieved from an invidious and unpleasant position, but in reality nine out of ten such questions arise between the architect and the contractor: practically, therefore, where the contract provides that the former is to be the final referee on all questions in dispute, it provides neither more nor less than that he shall be judge in his own cause. Few architects, perhaps, require that power altogether to this extent should be left in their hands; but many desire to retain sole jurisdiction over certain points, the most important of which are the quality of the materials and workmanship, the right interpretation of the drawings and specification, and the issuing of the final certificate. It is urged that in allowing a reference on the first of the questions above alluded to, the door would be opened to endless litigation, with its attendant delay and expense. Why should this be so in building more than in any other business transaction? In all other dealings a man trusts to the inducement of further custom, or the desire to acquire or maintain an honourable reputation, or, as a last resort, to the protection which the law will give him, to obtain his due; but in building alone he desires to set himself above that law, and, sitting in judgment on his own cause, decide in his own favour. This arbitrary course is the less required since all the cost of disputing fair objections will fall on the builder, as it is he who is necessarily the loser by delay in the execution of the work, and the postponement of the stipulated payments.



With regard to the right interpretation of the drawings and specification, one would as readily expect an unbiassed opinion from an architect as to these productions of his, as from a father as to the beauty of his children, or an author as to the merits of his book. At any rate one may be forgiven for declining to take up space by defending the proposition that on this point he is an unfit judge until it has been attacked.

An arbitration clause containing no power of reference on the subject of the issue of the final certificate is an idle form of words, so far as protection to the builder is concerned. So long as the power to refuse this certificate is left with the architect of the works without appeal, a reference as to other questions is of no avail. As has already been stated, there being no power to force an architect to give a certificate, he may decline to do so unless the conditions, just or unjust, which he desires to impose, are agreed to. Under these circumstances, he may, by simply refusing to act, coerce the contractor into consenting to a reduction in his account, although an arbitrator may have decided that the prices charged are fair; alter work, although an arbitrator may have decided that it is according to the specification; or allow penalties, although an arbitrator may have decided that none have been incurred.

One other question of importance has been raised by the builders, namely, the appointment of the surveyor to take off the quantities in competitions. Formerly the general practice was to call the proposed competitors together and allow them to nominate a surveyor to act on their behalf. This is still done by some of the first architects of the day, and it is this practice which the builders seek to have restored. As the responsibility falls on the contractor if the quantities are deficient, it is obviously fair that he should have a voice in the appointment of a surveyor who is entitled to confidence either by proved ability in his profession, or at least the pecuniary power to rectify any mistakes he may make.

On this subject, as well as on that of the insertion of an arbitration clause in contracts, a conference has already taken place between the Institute of British Architects and the Builders' Society of London. Much valuable time and unpleasant discussion will be saved should a mutual understanding be arrived at, and much further benefit would be obtained if a model set of 'General Conditions' could be framed, to be recommended by the Institute to its members, and which the builders of London could refer to as a standard under which they were willing to work.

## OUR RAMBLER

AT ST. PANCRAS TERMINUS.

SOME time back the curiosity of any casual passer-by in the neighbourhood of the immense space cleared at the north of the New Road (now St. Pancras Road) for the Midland Railway, was excited by the appearance of huge gaunt brown stumps of iron rising at intervals from masses of solid brickwork, and secured to them by strong bolts. These were ranged in two parallel lines, and appeared like the cores upon which might be built up, as was done at the Crystal Palace, an avenue of gigantic sphinxes, Egyptian fashion, to line this new approach to our capital.

By and by it appeared that these stumps were not cores, but rather roots from which grew up one after another gigantic pointed arches in iron, of elegant curve, of vast span, and of graceful construction, forming the main ribs of a noble roof, under which the business of the new permanent station at St. Pancras could be carried on with the most ample convenience.

Paying a visit to this work in the course of its erection, and when more than half the roof had been fixed, our Rambler found all proceeding in regular order London-wards. The level of the rails under this shed is a good storey above the natural level of the ground, and a substructure 15 feet high was then in rapid progress, while a short distance behind it followed the fixing of the ribs of the roof, and these once fixed, the boarding and glazing crept on after them. Thus at the period of our visit the portion of the site nearest the St. Pancras Road exhibited the columns and girders of the basement, which formed a perfect net-work of regular squares. Further north, Mallett's buckled plates, which were used as the filling-in of this net-work, were being fixed; and still further on the ballast was spread over these, and the temporary rails were laid on which moved the framed scaffolding for fixing the roof.

The general aspect of this roof must be well known. Its main ribs are four-centred arches in outline, and their clear span is 240 feet. The springing line of the ribs is about the level of the rails, and the iron bases we have spoken of are really the springers. Each pair of these is tied together by a continuous tie-girder forming part of the network already referred to, and running across, supported by the columns of the basement, from one side to the other of the platform.

The fixing of the main ribs was going on at a rapid rate, and was a most interesting process to watch. The ribs are 29 feet 4 inches apart, and a travelling stage or centreing, wide enough to embrace a whole bay, was constructed in three distinct sections, a middle, and two sides. Upon this stage the work was fixed, and when a bay had been completed and was thoroughly bolted together and stayed, the staging was moved forward—first one side of it, then the other side, and lastly, the central portion, by the length of one bay. When that edge of the stage which had been under

the last rib but one was under the last rib, the staging was secured, and the framing of the next main rib began.

It was a wonderful structure, this stage; massive, rigid, and yet light; it moved readily—being supported on wheels throughout, but it remained firm enough to allow of the fixing being most accurately done.

A remarkable sight it was to witness a portion of one of the main ribs being raised and put in place: a little active, restless donkey engine, bustlingly at work some distance away from the stage, furnished the power; a very large hempen rope was used for the hauling, and this the engine drew over a powerful crab at a rapid rate for such heavy work.

A vast segment of a rib might be seen dangling in mid air from a derrick which leaned over from the side of the scaffold, and was, in fact, a stout timber with an universal joint at its lower end and a block at its upper, and steadied by several guy ropes. We ascend the vast staging from storey to storey till we arrive at the level of the upper end of the last fixed portion of the rib, and here we find the derrick and a small gang of men. The mass of iron makes its appearance, gradually rising till it is hauled up to a spot outside of that where it is to be fixed, and at what appears to us a height above what is required. A signal from the foreman, and the little engine stops in a moment, and the iron framing remains hanging in space. Deftly, and almost without a word of direction, the men handle the guy ropes, loosen one and tighten another, and in not much more time than it takes to write the description, the derrick and girder and all are slowly and easily swung round in a half circle; and the piece of beam having been gently tilted by pulling one end of it downward, slowly swings over and subsides into place, and hardly an inch of adjustment is necessary to bring it so neatly home that its flanges bear against those of the portion last fixed. The foreman carefully aligns it; the various men pack and wedge it up; screw bolts are at once passed through the holes already prepared for them in the flanges, and within a surprisingly short space what was a heavy dangling framework of iron hanging in mid-air like Mahomet's coffin, is fitted into its place ready to do its work as a segment of a strong securely framed rib, on the homogeneous action of which the support of the whole structure depends.

The fixing of the other portions of the framing required, of course, care and skill, but there were not here the same elements of difficulty as in the case of the main ribs; and this part of the work proceeded with the utmost despatch, so that while the end of the roof nearest London was not even begun, the northern extremity showed almost all the details of the finished structure, as we see it now.

The natural disposition of every visitor to this station is to compare this roof with the two better known single span roofs, erected for the South-Eastern Railway, the roofs of the Cannon Street and Charing Cross Stations. Even setting aside the difference in span (which it is perhaps difficult at a glance to realize), there are other points in favour of the St. Pancras roof, which strike an observer at once. The noble sweep and fine curve of the pointed arch, gives a far more interesting outline than the segmental curve of Cannon Street. The absence of those ties which form a not ungraceful feature of the segmental roofs, is nevertheless in the St. Pancras one a great advantage, for the eye gains a sense of height and openness, and the outline of the arch is in no way interfered with. The whole central portion of the St. Pancras roof is glazed—without any opaque central strip. This arrangement is simple and effective, and this uninterrupted central mass of light; the sense of security given by the diagonal braces in each bay; and the long sweep of the various lines of the ribs, purlins, and braces as the eye follows them, contribute to the fine effect produced by this work.

Between each pair of main ribs run, parallel with them, three smaller ribs, which in the glazed part carry gutters; so that four glazed ribs and furrow roofs follow the outline of each bay. The purlins are open latticed girders of peculiar shape, their lower flanges being canted down at each end in each bay so as to act as struts and bear upon the lower flange of the deep main ribs. The diagonal braces just referred to are used to stiffen the roof in each bay and between each pair of principals and purlins, and are a very prominent feature, and their long diagonal lines stretching across the whole shed form a network that resembles very much the general outline of the ceiling of St. James's Hall. In perspective the whole shed assumes a regulated intricacy of effect which, joined to its simple and beautiful outline, entitles it to take a high rank among the efforts of architectural civil engineering of the day. This work is in the highest degree creditable to the engineer, Mr. W. H. Barlow, and to Messrs. Ordish and Lefebvre, who were consulted on the details of the iron work.

Although the ribs rise from the very level of the rails, so that the passing traveller, as he paces the platform, unconscious of the many acres of barrels of bitter beer stored beneath his feet, may forget that they rest on any brickwork at all, the roof covering does not follow the same line. From the ridge to the springing, there are eight spaces, formed by seven purlins. The highest four spaces (or vertical bays) are glazed, the next three are boarded and follow the outline of the rib, but in the last and lowest space the boarding forsakes that outline, and runs back nearly level till it meets the brickwork forming the walls of the station buildings. This is Mr. Scott's work, plain vigorous Gothic, executed mostly in red brick of a not very pleasing tint, with a sparing and judicious introduction of stone mouldings and

hands. A broad band of diamond-shaped panels filled with glazed tiles finishes this wall and forms a tolerably effective crowning feature, and this brickwork, with some well-designed open iron spandrels, suffice to impart genuine Gothic character to the whole work.

We need not add that in all this portion Mr. Scott has used thoroughly good detail—a feature conspicuous by its absence from nearly every engineering work yet executed which has a claim to architectural character. The detail of the roof is, in its way, equally satisfactory; for though nothing has been introduced for ornament, every part of it has been arranged by an architectural mind, and produces on the spectator a satisfactory effect.

## CHRIST CHURCH CATHEDRAL, DUBLIN.

(WITH ILLUSTRATIONS.)

By GEORGE EDMUND STREET, A.R.A.\*

(Continued from page 31.)

THE crypt under the old choir extends but a short distance (25 feet) east of the central tower. It has a semi-circular apse, and the aisle is continued round the apse. East of this aisle are three chapels, but these, instead of having apsidal terminations, are square ended, and their dimensions are very small; the central chapel measuring 17 feet by 15½ feet, and the side chapels 7 feet by 7 feet. In the angle between the apsidal aisle and the south-eastern chapel, there are remains of what seems to be a circular turret, and I think it probable that similar remains would be found on the north side also.

The whole plan is, therefore, not only clearly made out, but it is one of much picturesqueness of outline, and, to the best of my belief, unique in Ireland. The crypt under the rest of the Church follows very closely the outline of the Church above, save that its west wall stops short one bay east of the west wall of the Nave, and that it does not appear to have been carried under the south aisle; at least if it does exist there it has been walled up, and I did not think it necessary to cut through the walls in order to settle this question.

The age of this crypt is, I believe, uniform throughout: or at any rate there is very little difference. The pointed arch occurs in its construction throughout; and the square piers which support the vaults are almost all chamfered, and the chamfers have an ornamental stopping which is certainly not earlier than the end of the twelfth century.

It follows from this, that no part of the old Irish Cathedral built by Bishop Donat now remains; and that the Church which we have to examine contains nothing earlier than the work of the English artists who followed the invasion of Strongbow, and who left so many marks of their presence in the beautiful works which they erected throughout the Pale. At first sight the planning of this crypt looks so much more like that of a Norman work than of a pointed building, that it is important to insist upon the fact that in point of date there is very little difference between the completion of the crypt and the erection of the Church above, and that whatever Church existed on the site before the time of the English Invasion was entirely removed in order to provide the necessary foundations for one on a large scale. I see no reason whatever to doubt that the whole of the Choir was erected on the same plan as the Crypt, and that from the beginning of the thirteenth century to the middle of the fourteenth it stood unaltered. But the scheme of the Nave was I suspect slightly enlarged, whilst the work was actually in progress, for the Nave is one bay longer than the crypt below it, and there are some indications of a different hand in portions of the detail of this additional western bay, which serve to strengthen the conjecture that its erection was an after-thought.

The progress of the builders of the early Church was the same, no doubt, that we almost always see. They built their crypt first throughout, and then went on gradually with the upper Church, beginning at the east end, and so going on to the west. The Choir and Transepts were the first part finished, and the two arches in the aisles (which are all that remain of the Choir), and the details of the north and south Transepts show that this portion of the work was all in a slightly earlier style than that of the Nave, being transitional from Romanesque to early Gothic. As soon as they were finished, the work in the Nave was no doubt commenced, and I suppose that this may have been in progress for some years in the first quarter of the thirteenth century, but that at any rate it was completed before 1225.

With our reduced Cathedral establishments, and our desire to see our Cathedral naves made thoroughly useful, it is probable that any architect who had to build a new Cathedral would now revert to some such plan as that which I have shown was originally seen in the Choir of Christ Church.

The arm of the cross east of the tower was only large enough to receive the altar. The Clergy and Choir no doubt had their stalls under the Central Tower, and the Nave and Transepts were thus left for the use of the people. It hardly needs to say, that, after the end of the twelfth century, the same course was pursued all over Europe. The short early Choirs were destroyed, and Choirs on a far larger scale were everywhere erected. In the case before us, the

enlargement of the Church was first of all accomplished in a round-about way, by the erection of a large Lady Chapel outside the Cathedral, and only touching it at one (the north-east) angle. This Lady Chapel was evidently built without the slightest thought of its ever forming part of the Church, and was entered from a western porch, to which access was gained from the eastern doorway of the North Transept. It was built probably on the outside boundary of the land belonging to the Church; for its axis is different from that of the Church, and its north wall formed the boundary of the street which passed along the whole north side of the Cathedral. This provision of an ample Lady Chapel did not, however, very long satisfy the authorities of the Church, and whether they were moved by a desire to emulate the larger Choir of St. Patrick's, or by the necessities of the increased staff of the Church, it is at any rate certain that in the fourteenth century it was thought necessary to make an enormous change in the plan and dimensions of the Choir. It was extended from its old modest length of less than 30 feet to the rather grand dimensions of 102 feet, and if the character of the work had been equal to its extent there would have been nothing to complain of. Unfortunately this was not the case; and even when first built it is impossible that the fourteenth century Choir of Christ Church can have been really a fine work. In order to economise as much as possible, the architect ventured to use the south wall of the new Lady Chapel, and so involved himself in the necessity of making the great bend to the north in the eastern half of the Choir, which is noticed by every one, but for which I have never seen the true reason given, because people have not realised the history of the successive additions to the fabric. The Lady Chapel was built outside the Church, and therefore its divergence from the axis of the Nave was of no consequence; but when its outer wall was made use of to save the cost of building a new north wall to the Choir, this divergence became of the utmost importance, and involved a blemish and an unsightliness which no architectural skill could have entirely surmounted. But as far as I can judge there never was any great exhibition of such skill, and the new Choir, with its awkward bend, its absence of groining, and its want of striking architectural features, must have formed a sad contrast from the first, to the exquisite art displayed in the western half of the Cathedral.

I have already quoted the statement that the tower fell in A.D. 1316. It was after this no doubt that the present tower arches were built. They are evidently not of the same age as the transepts. A still greater calamity was the fall of the groining in the nave, and of the south wall and of the Clerestory in 1562. I was in hopes that we should find that the old columns and arches still existed in the south wall; but on removing some of the plaster and masonry it appeared that the eastern arch alone remains, and in a very shattered and damaged condition. The old South Aisle has been converted into a series of Vestries and a Chapter-room, and all its original character has been entirely destroyed.

I have now I think shown sufficiently at length what the old scheme of this Cathedral was, and it only remains to say what steps ought to be taken to remedy its present forlorn and semi-ruinous condition; and in the advice which I proceed to give, I have thought well, for every reason, to dismiss from my consideration altogether, the possibility of restoring the Choir, and this for various reasons. Its present state and its present arrangements are most unsatisfactory, and I regret beyond measure that we have not still in existence the short thirteenth-century Choir, with its Apse—its Eastern Chapels, and its Turrets: such a Choir would not only be far more effective than the present Choir ever can be, but it would at the same time have been admirably adapted for our modern use and for the reduced staff of Clergy and Choir who serve the Cathedral. But it is certain that the Choir is in such a state as not to stand in urgent need of repair, and so, until the Nave shall have been properly repaired and restored, it would in my opinion be most unwise to spend any thing upon it.

I confine myself, therefore, in the recommendations which I make, and the Plans which I have prepared, to the works which are required to the west of the Choir. They are large and costly, and it will I suspect be best to confine our attention entirely to them until they are completed.

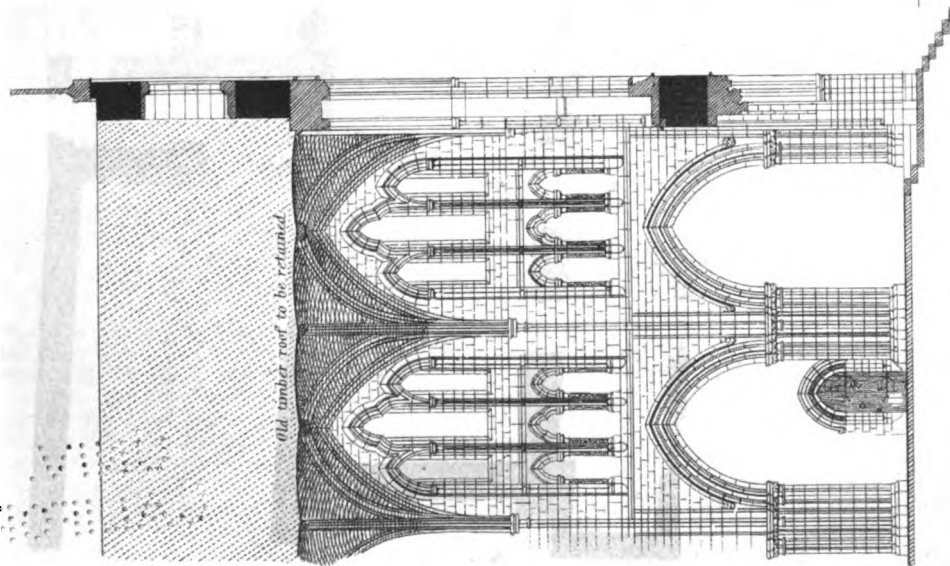
The present state of the Nave is certainly very bad in every way. The whole North wall, and the North wall of the Aisle, are much out of the perpendicular. The North Aisle has been supported on the outside by a vast and unsightly mass of masonry, and the North wall of the Nave is shored by a timber framework under the Roof. Much of the stone-work is damaged and requires repair, and the whole is covered with whitewash; whilst the floor of the Nave, being considerably raised, destroys to a serious degree the whole proportions of the fine clustered Columns.

The great object to be kept in view is to afford sufficient support to these walls without taking them down, for if they were taken down I fear it would be most difficult to rebuild them without importing so much new masonry and carving as to make the work really a new work, and so deprive it of what is beyond question one great claim to respect—its antiquity. I found on examination that the great mass of masonry built up against the north aisle wall is not so efficient a support as it appears to be. For there seems to be a good deal of loose material filled in behind its face and in front of the old wall. This at any rate was the case at the point at which I opened this wall, and is likely I presume to be the case throughout. What

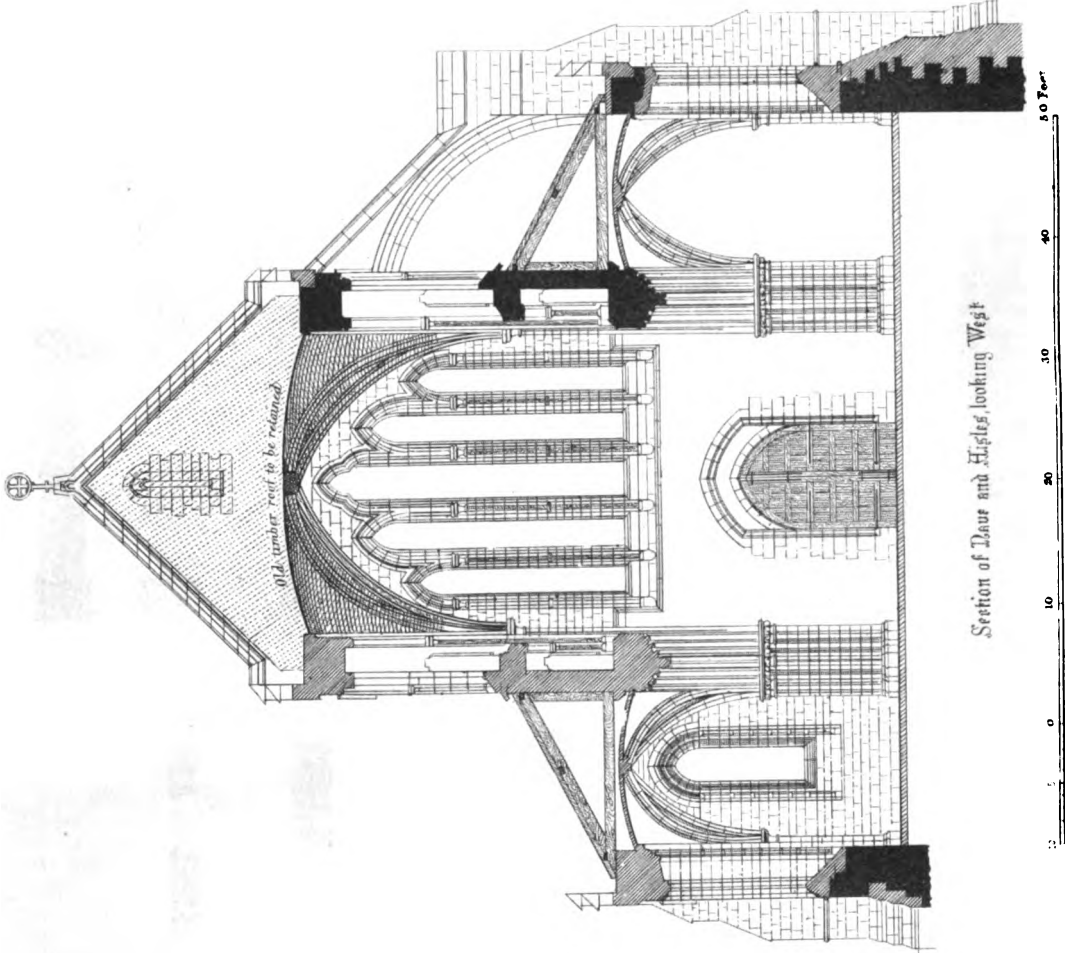
\* From a Report to the Dean and Chapter of the Cathedral.

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California

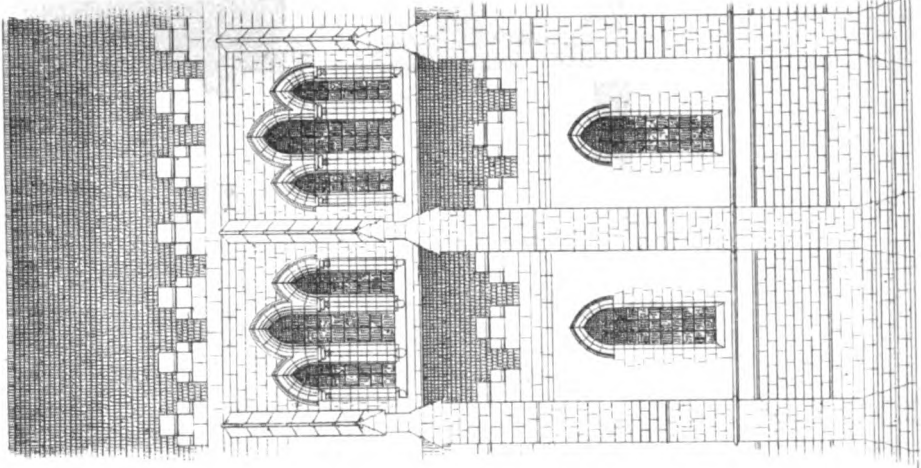
The Architect. Feb. 6<sup>th</sup> 1869.



Section of 2 Bays on South Side



Section of Choir and Aisles, looking West



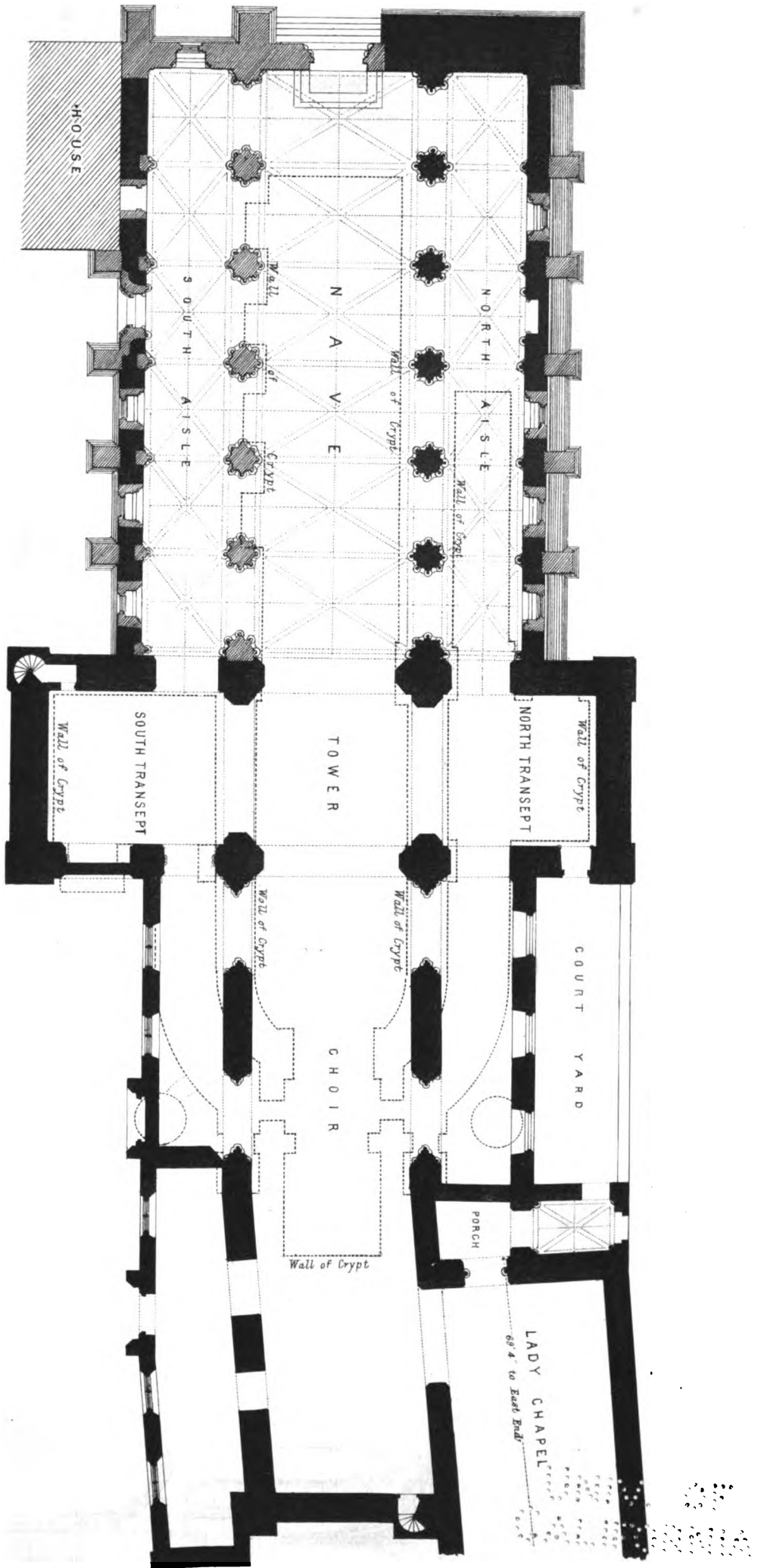
Part of North Chancel

George Edmund Street, A.R.A.

J. Emslie & Sons, lith.

Christ Church Cathedral, Dublin.  
No. 5.





Christ Church Cathedral, Dublin.  
N<sup>o</sup>. 1. Ground Plan.

J. Emble & Sons, lith.

George Edmund Street, A.R.A.

Drawn by W. M. Spangier & Co. Engrs. & Lith.

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I should propose would be to build up large buttresses opposite each of the principal columns of the Nave on the north side, to support the Clerestory from these by means of flying buttresses, and to strengthen the lowest tier of arches by means of groining in stone. In this way I believe that we may make a really good work of this north side of the Church, and keep it from becoming any more out of the perpendicular. I should at the same time, of course, propose to clean and restore all the stone-work very carefully, and to renew all the old features which are decayed and destroyed. The aisle windows would then admit of being opened, and thus this old part of the Church would be restored thoroughly to its old state.

On the opposite (or south) side of the Nave, the work which ought to be done is much more simple and obvious. There can be no doubt that, until the South Aisle is restored in exact conformity with the north, the Nave of the Church will not be satisfactory in its effect, and the work will not be a real restoration. Whilst, on the other hand, if the South Aisle is built, the Nave of Christ Church will be second in beauty to few churches of the same size in any part of Europe. Nor would the expense be enormous, as will be seen on referring to my estimates. In order to execute this part of the work, I should propose to shore up the existing Nave roof, to take down the whole of the south wall of the Nave, and to rebuild it in exact conformity with the other side. I believe that (as I have shown on my plans) the outer wall of the Vestries may be retained, new windows being inserted in it, and buttresses built. This Aisle would also be groined in stone in the same way as the North Aisle.

The west end of the Nave requires a new door and new windows. I was so fortunate as to find a portion of the old jamb of the window *in situ*, and so my design for this may be considered a pretty safe restoration of the original design. Then I propose to restore the old Groined Roof over the whole of the Nave, but to execute the groining in wood instead of stone; the old walls would not stand the weight and thrust of a stone vault, and this expedient, of which there are many old examples, is, therefore, as justifiable as it is unavoidable. On the exterior of the Church I should propose to take the opportunity afforded by these works to make some alterations. I should propose to finish the walls of both Aisles and Clerestory with the characteristic Irish battlements, and I should be inclined also to remove the doorway from its modern place in the south transept, and insert it instead in the South Aisle wall.

Finally, I ought also to say that I should lower the Nave floor to its old level, and repave the whole of the nave, aisles, and transepts with tiles copied from the old pavement, much of which seems still to remain buried under the present floor.

When all these works are complete, the Dean and Chapter will have a Cathedral of which, so far as the Nave and Transepts are concerned, they will have a just title to be proud.

I should propose to take the works in the following order—

FIRST. To build the South Aisle and South side of Nave. This would be a complete work in itself, and one which would be sure to interest everyone and to draw forth help.

SECOND. To restore the North Aisle and North side of the Nave.

THIRD. To restore the West Front and finish the Groining of the Nave; and

LASTLY. To complete the work by repairing the Transepts, and repaving the entire Church West of the Choir.

In this way the work may, I think, be carried on with perfect security, and so as to make no one section of the work so costly as to render it unlikely that it will be done.

### DUDLEY GALLERY.

IF public interest, a throng of visitors, and walls well lined with works of pictorial art far above the average of merit may be accepted as a guarantee of success to the 'General Exhibition of Water-colour Drawings,' its Committee may be sincerely congratulated on the result of their labours in its fifth anniversary.

It may indeed be argued that inasmuch as this Exhibition has already formed and must continue to form the nursery of a special branch of art represented elsewhere, its most successful exhibitors, when elected members of the Society or Institute of Water-colour Painters, will naturally be tempted to reserve their best efforts for display in Pall Mall; but there are nevertheless not a few who are faithful to both interests, and the Dudley Gallery has, besides, this decided advantage over other Exhibitions, that while its doors are open to all artists of merit, it is not trammelled by that unfortunate consideration of *membership* which in some instances results in the incubus of confessed mediocrity.

Among the most prominent figure subjects in the Gallery this season are those of Mr. Simeon Solomon, who we believe has filled a place on its walls from the first year of the Exhibition. To estimate the full value of this talented painter's work, it must be remembered that he belongs to a school whose aim is distinctly directed towards the ideal, and is wide from all attempt to illustrate *incident* in art. It is true that in such a work as his 'Song' (315), we find a group of young ladies and more effeminate young gentlemen dressed in the costume of our grandfathers' childhood, and gathered round a spinet; but the attitude of the figures and the whole *ethos* of this scene is neither natural, nor, we should hope, is it meant to be. With the grace of Stodhart, and a luscious charm of colour which is all the painter's own, there is nevertheless—and we are sorry to say it of such otherwise excellent work—a something—call it sentiment or what you will, about this picture from which Stodhart would have shrunk, and which will

never find true sympathy among educated lovers of art unless art itself should ever become emasculated. Much the same and more might be said of this painter's 'Sacramentum Amoris' (111), a half-draped mystical personage, with the *torso* of a Hercules and the head and limbs of a woman, who holds in—shall we say *his* or *her*?—hand a transparent shrine, in which a small winged figure—also of the epicene or doubtful gender—is deposited. What possible purpose in art such work as this can be destined to fulfil we are at a loss to guess; but judging from the Latin text inscribed on the frame (S. John, i. 5), it suggests a satire which can hardly escape the charge of irreverence.

To Mr. Solomon's 'Saint of the Eastern Church' (88) we can give nothing but the highest praise. Bating a strange tendency—observable in most of his figures—to exaggerate the width between human eyes, and represent them in one plane instead of on a curved surface—the drawing and execution of this work are admirable. The chaste key of colour in which it is painted, the deft association of hues which respectively stand for dark marbles, white vestments, and gold embroidery, combine to render this drawing one of the most attractive, to a refined taste, in the Gallery. Mr. Solomon's success has naturally induced more than one imitator to follow in his wake. Among these may be mentioned Mr. Walter Crane and Mr. Robert Bateman. The former gentleman's 'Water, Fire, Air, and Earth' (107), four symbolical figures in separate compartments, represent a work which seems to be of considerable merit so far as colour is concerned, but it is unfortunately hung too high for fair criticism. His second work, 'A Mediæval Poet' (24) clad in a mantle of dark red velvet, and stretching his 'lazy length' (and a very long length it is) by a river's side, while shadowy forms flit in thin procession on the opposite bank, must be judged by its aim rather than its execution. But Mr. Bateman's ambition is of that acrobatic order which o'erleaps itself. One may fairly question whether, since the Dudley Gallery first opened, any figure subject on so large a scale as his 'Story of a Mother and her Son' (217) has been exhibited with such small pretensions to technical skill, and we humbly submit to him, with all due deference to his choice of style, that it will be time enough for him to think of style when he has become more of a master of his brush.

We doubt whether Mr. E. Clifford would care to be identified with that neo-mediæval school which is the latest fashion of the day. Exceptional in character though his work may be, it possesses sufficient vitality to hold the mirror up to nature, and this too after a fashion which never descends to commonplace. His 'Head of an Angel' (19) is finely conceived and nobly drawn. The charming portrait of a child with a background of field flowers, to which he gives the title of 'In Clover' (27), exhibits sound taste in colour and composition; and though his 'Jean' (243) may be less successfully rendered in detail, there is a refinement and delicacy in the head indicative of great promise.

Let us now turn to the works of an artist who, while affecting no peculiarity of specific style, keeps steadily clear of those lamentable conventionalities which have until lately been the bane of our modern English School. Mr. E. J. Poynter is one of a very few painters, at least in this country, who have shown themselves equal adepts both in oil and water-colour painting. We are glad to find that the Royal Academy have at last recognised the ability displayed in his 'Israel in Egypt' by admitting him to the rank of Associate. We need only walk round the walls of the Dudley Gallery to acknowledge his excellence in another field of art. Whether we turn to his naive and graceful portrait of Mrs. Alfred Baldwin (317), in which the minutest detail, down to the inlay of a Japanese cabinet, is conscientiously but unobtrusively rendered, or to his accurate study of mosaics in the central dome of St. Mark's (585), or to his other Venetian subjects—'Boats at the Dogana' (554), and 'Moonlight on the Grand Canal' (570), we cannot fail to note the taste and industry with which each and all of these several and diverse subjects have been treated. His inventive power is well represented by a group of four small but clever designs, which are described in the catalogue under the general title of 'The Prodigal Son' (519), but which can scarcely have been painted in illustration of the same subject without involving an incongruity of detail too obvious to call anachronism.

The 'eye picture' in the room—by virtue of its size, chiefly, as we apprehend, is Mr. Calderon's 'La Fileuse' (207), a buxom, but somewhat uninteresting daughter of the South, who, lolling on a garden bench, distaff in hand, seems to be—what she doubtless was—a painter's model, and nothing else. This picture, like a former one by the same hand, exhibited at the Dudley, is painted entirely in tempera on canvas; and, whatever its artistic merits may be, appears out of place in an exhibition of ordinary water-colour drawings.

Under the title of 'A Farm Corner' (75), Mr. J. North—whose name, if we mistake not, has long been before the public as an illustrator of 'gift-books'—sends a hotly-coloured study of a barn-loft, in which two men are lying. Both in this drawing and that of Mr. Pinwell—another draughtsman on the wood—the light is strangely diffused; and though the 'Calf' scene (603) exhibited by the latter artist has many good qualities of execution, we prefer it as an engraving. The 'China Shelf' (291) of Mr. Luxmoore is an instance of the interest which may be elicited by the simple study of a single figure gracefully posed with a background of appropriate accessories. It represents no high aim in art, and its rendering of texture is in parts defective; but, on the whole, it is a decided success, and is utterly free from the mawkish prettiness which too often characterises such subjects.

We are sorry to find that Mr. A. B. Donaldson shows a tendency this season to relapse into the chromatic feverishness from which he had all but recovered last year. The undeniable skill in composition which is noticeable in his 'Parlement d'Amour' (255), and his 'Requiescat in Pace' (272), is marred by the violence of hue in which both pictures are steeped. The expression of his heads, too, might sometimes be tempered with advantage. That of the lady seated in the left-hand corner of his first subject is worth all the others, because it is in a state of repose. His studies of architecture and landscape are, in our opinion, far superior to his figure subjects, and we especially commend to notice his 'Villa Borghese' (591),

'Venice from the Public Gardens' (655), and 'Village in the New Forest' (614).

'A Game of Fox and Geese' (360) is a slightly painted, but very clever drawing by Mr. Briton Riviere, full of humour and truth in animal form. The sly look of old Reynard, who lies on his side in the foreground with his eyes just sufficiently opened to see the unlucky geese waddling unconsciously towards him across the common, the stupid, self-confident look of the birds themselves, with their fat bodies and out-stretched necks, really furnish such pictorial evidence of a good practical joke that we forget the dreadful tragedy which is about to be enacted, and can only wish the ruthless free-booter a good appetite.

Miss Marie Spartali, whose taste and skill in the field of water-colour painting have long since raised her far beyond the level of an ordinary amateur, sends two large drawings: one the life-size portrait of a lady (we believe her sister), in a Venetian dress, under the title of 'Nerea Foscarei' (461); the other a subject picture, 'Brewing the Love-Philtre' (380), in which two women are concocting a charm under trees at nightfall. Both works are of considerable merit; and if they are deficient in any quality, it is that of execution rather than of judgment and design.

Here we must pause for the present, reserving many notable drawings for future comment.

## SOCIETIES.

### The Institution of Civil Engineers.

FEBRUARY 2, 1869.

Charles Hutton Gregory, Esq., President, in the chair.

The paper read was 'The Mauritius Railways—Midland Line,' by Mr. James R. Mosse, M. Inst. C.E.

It was announced that the discussion, which had been commenced, would be resumed at the next meeting, when the following Paper would be read: 'On the Lagoons and Marshes of certain parts of the Shores of the Mediterranean,' by Prof. D. T. Ansted, F.R.S.

At the Monthly Ballot, the following candidates were balloted for and duly elected: as MEMBERS, J. H. W. Buck, T. Dale, P. Greck, and H. J. Wylie; as ASSOCIATES, J. Bowden, A. M. Fowler, C. Hart, B. M. de Michele, J. Musgrave, E. W. Preston, A. L. Sacré, H. T. H. Siccama, A. H. Strongtharm, and J. W. Wilson.

A report was brought up from the council stating that, under the provisions of Section IV. of the bye-laws, the following candidate had been admitted a Student of the Institution since the date of the last announcement: J. P. Van der Meulen.

THE INSTITUTION OF CIVIL ENGINEERS.—Tuesday, February 9, at 8 P.M. 1st Discussion, 'Mauritius Railways—Midland Line,' and 2nd, Prof. Ansted, 'On the Lagoons and Marshes of certain parts of the Shores of the Mediterranean.'

### Associated Arts' Institute.

9, CONDUIT STREET, W.

January 23, Discussion and Exhibition of Sketches. Mr. R. Phené Spiers, V.P., in the Chair.

After the transaction of the usual routine business, the Chairman called on Mr. Walter Crane to open the discussion on the question, 'Does General Mental Training tend to develop Art Power?'

Mr. CRANE, in opening in the affirmative, remarked that the two sides of the present question bore relation to the two chief educational theories of the age, of which the great exponents were Mr. Carlyle and Mr. Mill. He might state his general position in the form of a syllogism. Art is a product of observation and experience, acting on the imagination and the feelings. Whatever educates and extends the former has a corresponding effect upon the latter; and as mental culture or training has this tendency, therefore mental training tends to develop art power. Mr. Crane then proceeded to show, in the progress of a student of art from childhood, that the forms of his practice would correspond with the phases of his mental condition, and afterwards traced the same correspondence between the art and the mind of the world at the chief periods of its history. Having touched incidentally on the value of special branches of study in various branches of art (as history and poetry in figure painting, and botany and geology in landscape), he contrasted the universalism of the great artists of old with the present tendency to the division of labour in art. He then remarked that by the chemistry of the mind, observation and experience were converted into thought, and thought was precipitated in art. Whatever in literature or in life refined the feelings, widened the sympathies, stimulated the imagination, or strengthened the intellect of the artist, must tend to ennoble his art. If the human mind had not, in the course of ages, received such education, our highest ideal of pictorial art would still be found on the walls of Memphis or of Thebes. In the present day—amid the complex conditions of modern life, the crowds of agitating questions, the varied interests and conflicting principles—to some the temptation might seem strong to retire to a self-built monastery of the mind and devote life to the quiet study of art, shutting the door upon the confused noise of the world, and caring not to answer 'the riddle of the painful earth.' But exclusiveness and isolation would no more be healthy for the artist than for the man; sooner or later would be felt the baneful influences inseparable from restricted effort and narrowed sympathies, the human mind would become intolerant and self-indulgent, and the spirit of art degenerate into the monotony of handicraft.

Mr. F. N. PRINCE briefly replied in the negative. Circumstances prevented him from fulfilling his engagement otherwise than nominally. The real duties of his position would be performed by his supporters.

Mr. H. E. WOOLDRIDGE (for the affirmative) urged that the broad culture of the Greeks had resulted in the perfection of art, while, on the other hand, the exclusive training of the Jews had produced (with the exception of

religious poetry) no art whatever; and that at the Renaissance also, when art again well-nigh attained to the Greek level of excellence, it did so under the influence of learning, and in the hands of learned men.

Mr. SCARLET POTTER (for the negative) was of opinion that the syllogism on which the speakers for the affirmative based their arguments was not one that would bear examination. If, as stated by Mr. Crane, art were mainly a product of experience, why were the works produced by artists when the maximum of experience had been reached, and before the decay of age had set in, inferior, as a rule, to their earlier works? If art were dependent on knowledge, why did not this age, more fruitful in research than any that had gone before it, produce more great art than past times? The thing of real importance was the innate art instinct. If that were present, the work would be good and true, whether the artist were as learned as Leonardo or as ignorant as Turner. He thought breadth of information rather prejudicial than otherwise, since it militated against earnestness and depth of feeling. A Dante or a Fra Angelico would be impossible in the nineteenth century. The short span of life would not permit a man to devote himself to many things if he hoped to excel in any; and, as a rule, it was by concentration, not diffusion, that power was attained.

Mr. HOLYOAKE (affirmative) thought the last speaker had argued on false premises. The question was rather, 'the art instinct being given, would general culture tend to develop it?' In his opinion it would have that tendency.

Mr. LEMON MICHAEL (negative) reminded Mr. Holyoake that the speakers in the affirmative had only been attacked in the position they had themselves assumed. His objections were therefore unnecessary. Mr. Wooldridge had instanced the Greeks and Hebrews. Now, Greek art reached its acme earlier than Greek philosophy, and, therefore, could not be said to have sprung from it; and the practice of art was forbidden to the Jews by their religion; and the difference of art instinct in the two races had also to be considered. The rise of Renaissance art had been mentioned by the same speaker as a result of learning; but that speaker had not thought proper to point out how its fall was caused by over much learning. Something of the evil of conscious knowledge in art might be seen in the antiquarian pictures of the present day, in which the subject appeared a mere peg on which to hang costumes and elaborately correct accessories. For art purposes, it was necessary that things should be seen in a child-like spirit; Nature, like religion, revealed her secrets rather to the simplicity of faith than the pride of knowledge.

Mr. LEWIS DAY (affirmative) pointed out that for the architect of the present day an education extending over so wide a range of subjects as to be general rather than technical was absolutely necessary.

Some further remarks having been made by Mr. REDGRAVE, Mr. HEWITT, and Mr. RALPH THOMAS,

The CHAIRMAN in summing up proceeded to divide the various branches of intellectual culture under different heads. Some of these, as, for instance, poetry, would from their nature prove beneficial to art power; whilst others, such as archaeology, would tend to lead the mind of the artist from imagination to fact, and would therefore be prejudicial. On the whole, he thought the arguments brought forward favoured the negative view of the question. In allusion to Mr. Day's remarks on the education of members of his own profession, he believed the study of so great a number of subjects as was now forced upon them had well-nigh extinguished all art power among English architects.

A show of hands was then taken, and the majority declared to be for the affirmative.

A considerable number of sketches by members were exhibited, illustrating the Second Act of the 'Tempest,' and the word 'Lost.' The ballot on their merits resulted in the palm of excellence being awarded to a sketch by Mr. Charles Gliddon, in the former series, and in the latter to one by Mr. Oliver Morris.

## THE STUDENT'S CORNER.

*Thicknesses of Arches.*—In some investigations on the equilibrium of arches I deduced the following simple and convenient rule for determining the proper depth or thickness of the voussoirs of a cut stone arch at the crown. Let  $s$  represent the span of the arch, and  $t$  the thickness of the crown. Then

$$t = \frac{2}{3} \sqrt{s},$$

or the depth of the voussoir at the crown will be three-eighths the square root of the span. This simple rule is applicable to all arches, however great or however small the span, from a semi-circle to the flattest segments ever attempted on public works. It is always safe.—*Ellet.*

*Size of Public Clocks.*—I have no difficulty in saying that one-tenth of the height from the ground is the least size which a public dial ought to be, except in some unusual positions where they can only be seen a very little way.—*Denison.*

*Coating Water-Pipes.*—When pipes are coated with asphalt, they will deliver a much greater quantity than any calculated results. The 4 feet pipes at Glasgow were calculated to deliver 20,000,000 gallons in twenty-four hours with 5 feet per mile inclination. They have delivered 26,000,000 with 3½ feet. The expense of asphalt was about 5s. a ton.—*Bateman.*

*Architects and Decoration.*—Properly speaking the design for the decoration of any building both externally and internally is the province of its architect, since in this case decoration is essentially a part of its architecture. If the principle that 'ornament is the decoration of construction' be just, it will be apparent that it is hardly possible to judge of the one without the other. In works wherein the decorator makes his own sham construction in order to



ornament it, as well as in those multiplied manufactured 'parts' which form the staple ornament of a large class of workmen in this line, we may admire the skill of the execution, the cleverness of the details, the excellence of the manufacture, or the imitation of early works of acknowledged merit; but to appreciate 'decoration' we must view it as a whole in the place for which it was specially designed, and in harmony with the building whose construction it ornaments. Moreover, it must mainly originate in local circumstances, and ought to have an individual significance.—*Redgrave.*

*Slates.*—The finest and largest roofing slates seem to be those of a bluish grey or pale green colour. Where they become either very red or quite black, they are more brittle, and more readily decompose, owing probably to the presence of peroxide of iron in the one, and carbonaceous matter in the other.—*Jukes.*

*Pruning Trees.*—I have always had occasion to observe as a practical truth that in the cutting up of trees which had not had their large branches cut off close by the trunk, the timber was of good quality, and sound throughout, excepting where extreme old age had caused natural decay; and of the truth of this I am perfectly convinced. Therefore, I hereby beg to advise every proprietor of plantations never, as he values their health as timber, to cut clean from the boll of a tree a branch which is more than four inches in diameter at its base.—*Brown.*

*Cast-Iron Columns.*—Hollow columns of 20 to 24 diameters in length:—

Columns may be loaded with  
If cast  $\frac{3}{4}$ -inch thick or upwards—2 tons per square inch of sectional area of iron

"	"	"	1 $\frac{1}{4}$	"	"
"	"	"	1 $\frac{1}{2}$	"	"
"	"	"	1 $\frac{3}{4}$	"	"

For columns of 25 to 30 diameters in length:—  
If cast  $\frac{3}{4}$ -inch thick or upwards—1  $\frac{1}{2}$  tons per square inch

"	"	"	1 $\frac{1}{2}$	"	"
"	"	"	1 $\frac{3}{4}$	"	"
"	"	"	1	"	"

Columns being supposed of good construction, with flat ends, and with base plates at their bearings.—*Shields.*



ARCHITECTURAL EDUCATION.

SIR,—Mr. Edis, in criticising the Report of the Association delegates to the Architectural Alliance on Architectural Education, takes exception to certain points in it, I think, without sufficient grounds. He 'dissents from much that it lays down, because it fails to enquire into and recognise the causes which are in a great measure the reason of the present admitted faulty system of education.'

I am afraid Mr. Edis has not read all the Report; for seventy lines of printed matter are confined to enquiring into those causes alone: whether he agrees with them or not is another matter.

Mr. Edis thinks the Report is faulty for two reasons:—

1st—because the suggestions made therein are evidently based on the foreign systems of education.

Without admitting that to be a fault, I beg to point out that the propositions contained under Head IV., and recommended for adoption at present, are based on the *pupilage system*; those under Head II., which are *suggestive only*, are based on the *academical system*, which will, of course, ultimately replace the former just as railway travelling has taken the place of that by the stage coach.

With regard to the second fault—namely, that it only suggests a system which is not to be compulsory—I am really unable to see how the profession can be put on a better footing until the education of its members be carried on by some systematic and definite course; compulsory examination may follow as the result of such system, as it has abroad, either by law or by custom, but it certainly cannot precede it.

Even abroad it is in *Prussia alone* that examination is compulsory by law, and there everybody is examined, from the highest authorities in the land to the commonest soldier or sailor, or even the shoeblack. It will, I fear, be a long time before we are able to arrive at that state of civilisation.

In speaking of the French school, Mr. Edis assumes 'that the paid professor cannot be of any great eminence, as the smallness of the sum paid would leave him but a very small remuneration after payment of rooms and incidental expenses.'

It does, however, happen that the professors of the ateliers are, without exception, the *very highest architects of eminence in the country*, as the names of Labrousse, Lebas, Gilbert, Blouet, Questel, Constant-Dufeux, Daumet, and others testify.

With regard to the theoretical instruction of the French School, the Report is somewhat exaggerated, for during the last ten years no 'Grand Prix' man has visited Rome without having passed two or more years in the office of an architect; two of them were inspectors for more than four years at the New Opera, Paris; and it is well known that nearly all the students of the atelier, after the second year in the school, work for three or four months in the year in the office of an architect, at so much per hour, and in some cases as much as eight or nine months. The administration of the school, however, does not recognise, as in Germany, the practical instruction thus obtained elsewhere as a necessary part of their system; and

this fact, and also because the Report had to be considerably shortened, led, I am afraid, to the exclusion of these important points, which considerably modify the general theoretical tone of the system.

I remain, Sir, yours obediently,  
R. PRÉNÉ SPIRES.

BALLIOL COLLEGE.

SIR,—In your interesting account of the enlargement of Balliol College, Oxford, an inaccuracy occurs, which, I trust, you will allow me to correct, as it refers to a lady to whom the College has been indebted for a munificence which, if withheld, would have deprived the building of much of its present distinction.

*Miss Brackenbury* is described in your article as a descendant of the original founder, *John de Balliol* (1264). This is not the case, although a former connection between the families of Balliol and Brackenbury may have been the motive for selecting 'Balliol' in preference to other colleges as the recipient of her munificent endowments.

It is, however, as the last of her line, and *in memoriam* of her two brothers, who were the last lineal male descendants of Sir Perse de Brackenbury, of Sellaby, Durham, who married a daughter of *Hugh de Balliol*, of Barnard Castle, and died about 1106, that her donations have been made to Balliol College.

One of her brothers was in the law and the other in medicine, and in their memory three scholarships at Balliol have been founded by Miss Brackenbury, for young gentlemen intending to devote themselves to those professions; and her contributions to the construction of the building were made in the hope of securing, gratuitously, suitable rooms for her scholars in the Brackenbury Tower.

Trusting that you will kindly insert this slight correction of your excellent notice of Balliol College,  
I am, Sir, yours, &c.,  
Brighton, Feb. 1, 1869. H.

REMOVING HOUSES.

SIR,—An interesting article appeared in one of your early numbers with reference to the American mode of removing houses from one part of the city of Chicago to another, without taking them down or injuring their stability. A similar removal has just been successfully made at Caversham Bridge, under the direction of Mr. Woodman, our borough surveyor. A house in the occupancy of Mr. Piper stood until Friday last close to the east side of the old pier, but it was found that this would be an obstruction to the erection of the new bridge, and it was accordingly determined to try the American plan of removal *en masse*. The attempt was made on Friday morning, and in less than three hours the building was placed 8 feet farther back, and was settled safely and uninjured in the position it is to permanently occupy.

ARCHITECT.

Caversham.

UTILISATION OF REFUSE.

SIR,—In the last number of THE ARCHITECT a disheartening view is taken of the prospects of utilising the London sewage. Others see much promise in the prospect of the sewage being made a source of wealth and benefit to agriculture as well as of profit to those who will undertake the task of organising the supply of a simple and *substantial* manure for the purposes of the agriculturist. This might be done by the action and responsibility of the Board of Works: it could be done most suitably by them, but failing that, it may be done by the action of a Company, Limited, and I beg you for one moment to consider a rough sketch for the purpose.

At suitable stations on the Thames, places or wharves could be opened for the reception of the London shootage, FREE. By the means of free shootage a constant and large supply of matter would be collected at these depôts, from the diggings, the sweepings, and rubbish of London. Barges filled with this shootage would be tugged down the river to the Sewage Outlets, where a site would be taken for the reception and conversion of the manure. The shootage, after a rough sorting, would be lain in suitable beds, to be run over by the London sewage to saturation. This valuable and simple manure, when partly dried, would be then ready for distribution on the lands around, enriching and gradually raising them. The residue of hard material taken from the shootage would make and raise roads in the low lands adjoining, and the effect of this simple arrangement would be to make a constant supply of valuable manure for a large district requiring it, a good supply of road material, a fair return for capital invested, as well as the removal of the filth from London, to the great benefit of the inhabitants.

February 2, 1869.

I am, Sir, yours obediently,  
C. P. ASTRON.

FIRE-ESCAPES.

SIR,—The recent calamitous fire at the house of my friend Mr. E. H. Barlee, at Kensington, leads me to ask for the use of your columns for one or two practical suggestions.

In a leading article in *The Standard*, one day last week, it is made a reflection upon the architectural profession, that while we design and erect houses more or less impregnable from without, we give little heed to the necessary means of egress for the unfortunate inmates whose escape is cut off in consequence of smoke and flame having taken possession of the staircase. Now, while there is, no doubt, some truth in the observation, yet I submit that it is savouring of unfairness to reflect wholly upon the foresight and care of the architect, for I think that the matter of escape by the windows of the house—to which *The Standard* evidently refers, is more for the consideration of the inmate than of the architect. Upon us, clearly, lies the responsibility of providing against facilities for unlawful ingress, but to my simple mind the facilities of egress by means of the windows come more within the province of the house finisher and upholsterer than of the architect and surveyor.

Probably, in five bedrooms out of six, a dressing-table of some sort stands under or near the window. It most frequently has one or more shallow drawers in front, sometimes it is dressed up in the mysteries of muslin and glazed calico, but in any case there is room to fit a shallow drawer, opening only at the back of the table, and therefore not likely to be perverted to other than its proper use, wherein might be kept a coil of some 20 or 30 yards of strong  $\frac{1}{4}$  inch rope, i.e. half-an-inch thick (which by-the-by should not be 'knotted at intervals,' as I think has been elsewhere recommended) rove at one end through the eye of a stout iron hook, like a fish-hook, and having about three inches *gape*, i.e. between stem and point. Or a shallow drawer might be conveniently made (opening at the back, for the reason before stated) at the bottom of the box ottoman now so frequently found in better class bedrooms, in which the rope and hook might be stored, always ready to hand, without previous adjustment or fixing, yet out of sight and occupying no valuable space. A sum of five pounds would furnish all the bedrooms of a moderate-sized house with this useful expedient.

This is, at once, the best, cheapest, simplest, of all fire-escapes. By its means an adult might quickly and safely land half-a-dozen children from a third or fourth floor window on the pavement below. Letting down other adults in like manner if necessary, using the hooked or free end of the rope as the circumstances of the moment might require, and finally passing the rope round a bedpost, might lower himself or, having secured the hook to the inside sill of the window, the balustrade, or other convenient and safe anchorage, slip down quickly and safely to the ground.

The very fact of knowing that so ready and simple a means of escape is at hand in every room would go far to nerve and strengthen the most timid of the inmates, and contribute to that presence of mind that is half the battle, and *oft-times more*, in the case of a fire.

How useful, too, would be the hook as a means of bringing up help from below—even

'the broken fly ladder' at Kensington might have been easily reared by its means. There is very little doubt that had this simple and inexpensive apparatus been at hand at Lansdowne Crescent last week, the valuable life of my friend's wife would have been preserved, and his feelings, and those of his servants and connections, saved many a bitter pang.

I am becoming more and more convinced that most, if not all, of the Patent Domestic Fire Escapes are a delusion and a snare. Rope ladders, too, that are never at hand when wanted, and that will never *shake out* properly when they are, are little better; clearly they are of no use to infants and young children, and but little to timid men and females. Probably not one female in a hundred could descend a rope ladder amid the excitement of a fire and under the gaze of a gaping crowd without falling; and hundreds would hesitate until resolution came too late. Nay, for one that would venture on a rope or wire ladder—possibly hanging loose and swinging about like a pendulum—ten would let themselves down quickly and safely by means of the rope.

Just one more suggestion. Would it not be well always to have a door at the foot of the attic stairs, to shut down the smoke and flame, when there is a means of exit—as there ought always to be—by a skylight in the roof? Such a door need not be fire-proof, but it would enable the inmates, if driven to the upper floors, to escape leisurely on to the roof without being affected by the blinding smoke and unbearably hot air that rush like a whirlwind up the staircases the moment a vent is opened in the roof. How often has it happened that some poor soul has been suffocated, scorched, blackened, and burnt to death at the very foot of the escape ladder in the roof!

Lastly, that ladder should never be out of its place, and every fresh servant should be well instructed in the *means and modes of escape*.

Prevention is always better than cure; but carefulness alone is no safeguard against fire, as is most amply proved by the calamity that has called forth this letter from

Yours faithfully,  
W. L.

## LEGAL.

At Marylebone Police Court, on Monday, Thomas Crofts, contractor, Kentish Town Wharf, and Joseph Manning, labourer, were charged on remand with stealing about 40,000 bricks belonging to Mr. William Henshaw, the contractor for building a new infirmary at Highgate, for St. Pancras. Mr. George Lewis conducted the prosecution, and Mr. F. H. Lewis defended Crofts, as reported in THE ARCHITECT of January 23. It was shown that the prosecutor had the contract for the erection of a new infirmary at Highgate. He had made arrangements with several brickmakers to supply him with bricks to be delivered at Crofts' Wharf, and thence carted to the site of the infirmary at Highgate. Messrs. Pickett and Sharpe, of Southend Green, Hampstead, contracted to cart the bricks for Mr. Henshaw from the prisoner Crofts' wharf. They, however, without the sanction of Mr. Henshaw, sublet their contract to Crofts. Bricks from that time were missing, and from what had been stated by the prisoner Manning, he had been induced by Crofts and his foreman to tally bricks from the barges to the extent of about 40,000, for which he received 4s. a thousand. The lowest price for these bricks was, including the cartage, 3s. a thousand. Competent surveyors had measured up the work, and found that there were about 218,000 bricks deficient, and this was borne out by the invoices. Mr. D'Eyncourt committed both prisoners for trial, and refused bail.

## ITEMS OF NEWS

FROM OUR  
SPECIAL CORRESPONDENTS AND OTHERS.

### India.

**Engineering.**—A Baboo, Kalutch Chunder Ghose, has recently purchased the plant of the Beerbhoom Iron Works, and started the works afresh. One of his new furnaces is capable of turning out about eighty tons of fair iron a month. Specimens of ore have been lying about unnoticed for the past five years. There is a promising seam of coal not far from the works, and lime can be had in abundance. The works are also very advantageously situated with respect to the East Indian Railway.

Works have been commenced at Salem, in the Madras Presidency, for improving the drainage of the town, and for conveying water to the reservoirs in the Fort.

The Government of India has ordered the revival of *tuccanee* advances for irrigation purposes, such as wells and reservoirs, throughout the Punjab.

The Ahmedabad merchants are taking active steps to promote the construction of a railway from that city to Veerungaum, a distance of thirty-eight miles.

A successful trial trip over thirty-two miles of the Chord line of the East Indian Railway, from Seetarampore to Setakuttee, was made on December 26 last by a special train.

The late accident to the telegraph on the Arakan coast shows the urgent need of an alternative line connecting Calcutta with British Burmah. It is rumoured that a deep sea line is shortly to be laid across the Bay from False Point to Henzai, in the Tavoy district.

It is stated that the Maharajah Holkar is about to work the iron mines at Burwai, which were lately purchased by him from Government.

**Architecture.**—It is understood that the New Presidency College building at Madras will be completed about May next, no fewer than 600 work-people being just now busily employed upon it. When finished there will be accommodation enough for several hundred pupils, besides library and reading rooms, examination hall 60 feet by 60, and a large number of offices.

Permission has been received from the French Government at home to erect a *Hôtel de Ville* for the benefit of the public at Pondicherry. The site has already been chosen on one side of the *Place Napoléon III.*, and commanding an excellent view of the esplanade, the pier, and other objects of interest. It is also in contemplation to put up a statue in the centre of the Place to the memory of Dupleix.

The foundation stone of the University of Bombay was laid on December 29 by His Excellency Sir Seymour Fitzgerald, in the presence of a large concourse of the public, both European and Native. Although the University itself was founded in 1857, nothing has been done till now to provide it with a local habitation of its own, beyond procuring sketches from several architects, and ultimately a complete design from Mr. G. G. Scott, R.A.

### Notes from Paris for Connoisseurs.

A man of taste is known by the quality and not by the quantity of his treasures, and the late Comte d'Hauborsart must be accounted such, though his pictures, sold the other day in Paris, were but four in number: the first was a fine example of Jacques Ruysdaël, *The Torrent*, and sold for a sum equal to 328l.; the second, a sea-piece by Ludolf Backuysen, fetched 320l.; the third, a small work by Jean Van Hugtenburch, *Attack of a Military Convoy*, 36l.; and the last, a *Public Square in a Dutch town*, by Gérard Berckeyden, 200l.

Another small collection sold recently in Paris presents several points of interest. A bust of Voltaire in marble by Houdon, signed, and bearing the date of the year 1781, formerly presented by the Marquis de Villette to the Comtesse de Fernoy, sold for little over 49l. At the same sale three remarkable pieces of tapestry were sold at high prices: one, representing the *Triumph of Alexander* and having the arms of England over the subject, fetched 108l.; another, in which Apollo and the Muses are placed in a *Landscape*, 200l.; and the third, of Beauvais manufacture, a *Concert in a Park*, in the style of Watteau, 120l.

At the sale of the effects of Madlle. Delphine Marquet, two works in pastel sold for relatively large sums. One, a portrait, by La Tour, of Madlle. Sallé, a dancer, dated 1745, formerly in the Véron collection, sold for 101l.; and the other, a portrait of the *Fermier Général de la Reynière*, by the same artist and of the same date, 53l.

The season for the sale of works of art in Paris is now coming on, and the Delessert and other collections are expected to create considerable excitement at the great mart in the Rue Drouot, which in truth, for the last few years, has been one of the most fashionable as well as crowded resorts in Paris: the connoisseur is almost sure to find something of interest in one of the many sale rooms of that establishment, the only one in which public sales are allowed to take place in Paris, with the exception of one small sale room for books only, unless in the houses of the proprietors themselves. The Art-market is a great institution in Paris, and a highly-interesting one; there is scarcely any scene in which the characteristics of the people may be studied with more effect than at the private view of the pictures, sculpture, artistic furniture, or *bric-à-brac*. The French taste in art is certainly far from pure, but there are few French people who have not a love, if not exactly an appreciation, of art.

## General.

At the Royal Academy Election last Saturday, Messrs. Mason and Poynter were chosen to fill up the vacancies in the ranks of the Associates. The difficulty of making a choice, when so many distinguished names were to be found in the candidates' list, must have been necessarily great; and the Academy are to be congratulated on having added to their number two men so eminently fitted to uphold the credit and reputation of the institution. The only painful reflection connected with the result is that both gentlemen studied abroad; an additional proof, if any were wanted, of the truth of the remarks in a recent article in this Journal on the deficiency of art education in this country.

The 'private view' of the Dudley Gallery Exhibition came off on Saturday, and more than 700 persons visited the gallery during the course of the day. Sales were effected to the extent of over 1,500l.—an advance of 600l. on the amount realised on the same occasion last year—a satisfactory proof of the sure though gradual improvement in monetary matters.

Mr. Layard has selected Messrs. Leighton, R.A., Poynter, A.R.A., Prinsep, and Albert Moore, to execute four of the figures which form part of the internal decoration of the Houses of Parliament.

On Saturday, at Chatham Dockyard, a wooden bridge gave way under the weight of a train laden with clay, by which four men were injured, and one fatally. Works are in progress for the extension of the dockyard.

A scheme, approved of by several leading scientific authorities, for providing telegraphic stations in mid Channel, is about to be considered by the Government and the Trinity Board. Its purpose is to establish floating telegraph vessels in different parts of the Channel and also on the Irish Coast, so that passing ships will be enabled to keep up communication with Great Britain, America, and the Continent.

The dividend of the Clifton Suspension Bridge Company for the half-year ending December 31 was at the rate of 1½ per cent. per annum. The passenger traffic during that period showed a diminution compared with the corresponding half of the previous year.

Messrs. Austin and Johnson of Newcastle have reported that owing to insufficient ventilation the sleepers, flooring, and seats of Alnwick Church have begun to exhibit signs of decay. To remedy the evil it is suggested that a drain on a level with the floor be carried round the outside of the building.

A report has been made to the Board of Works recommending that the sum of 100l. be contributed towards enclosing a piece of vacant ground in Beresford Square, Woolwich.

The Board of Works has been asked for a sum of 168,468l., being the cost of acquiring some property for the purpose of widening Leadenhall Street. The committee considered that they were not in a position to raise so much money, unless by increasing the sewers rate; a plan which under existing circumstances they were not disposed to adopt.

The important question of an increased supply of gas to the metropolis will engage the attention of Parliament this year. Several of the large companies have applied for power to raise additional capital; they may require it, but we know we want increased light at a reduced rate.

The Commissioners of Works have given instructions to the effect that the portion of the embankment of the river which runs parallel with Battersea Park is to be finished with stone dressings.

Her Majesty's Theatre is rapidly approaching completion; and if report be true, it is likely to be of a superior character in its general details. We hope that effectual provision will be made for the ready egress of the audience in case of alarm; it is hardly likely that so important a fact will not receive due attention.

The Model of the statue of Lord Palmerston, by Mr. Woolner, which is to be erected in Palace Yard, Westminster, is in the hands of the bronze casters.

A portrait bust in marble of Dr. Muspratt, the discoverer of the chloride of iron spring, is expected to be ready for exhibition at the Royal Academy in May next. Mr. Adams-Acton is the sculptor. The bust will be placed in the New Pump-room at Harrogate.

**Architects' Responsibilities.**—It was stated at the Carmarthenshire Quarter Sessions that in consequence of defective workmanship and materials used in building the 'Joint Counties Asylum,' it had been found necessary to renew a considerable portion of the work; and it was added that the loss had arisen through their architect, who had certified that the work was properly executed. A case was submitted to an eminent counsel, who has given an 'opinion' that proceedings can be taken against the architect to recover damages for the defects, and it has been decided to take legal proceedings against him.

It is anticipated that new Blackfriars Bridge will be opened on May 24 next. Should this date be finally decided on, it will be the hundredth anniversary of the opening of the old bridge, in 1769; and by a curious coincidence, it happens that on the same day her Majesty will have completed her fiftieth year.

It is proposed to erect a memorial church to Archbishop Longley at Oxford. The cost is expected to be about 15,000*l.* to 20,000*l.*, and the building is intended to hold at least 1,000 persons. The subscriptions already amount to 2,000*l.*

**Portobello.**—It is estimated that the new pier which is to be built at Portobello will cost 6,000*l.*

**Memorial Window.**—A stained-glass window of a very handsome description has recently been placed in the chancel of St. Margaret's Church, Sibsey, by Edmund Brown Waite, Esq., a former resident of the parish, in memory of his deceased wife, who died in May, 1867. The subject is taken from the 10th chapter of St. Luke's Gospel, the three figures representing Christ, Martha, and Mary. There are now five memorial windows in the chancel of this church.

Bumour states that a tramway will be run on the Thames Embankment, in order to supply the public with that convenience which the Metropolitan District Railway Company have so long delayed.

**Worcester Cathedral Great Bell.**—A new mode of tolling great bells has just been applied to the 4½ ton bell lately cast by Messrs. Taylor, of Loughborough, for Worcester Cathedral, and recently hung there. The bell has been hung on a new plan, which, with the clock and peal of twelve bells, is designed by Mr. Denison, Q.C., and gives a new effect to bells which are too heavy to be rung in the usual way. The gudgeons or pivots, instead of being round, are wedge-shaped, like those of a scale beam, and roll on hard brasses very slightly hollowed. The friction is thereby made so little that this great bell can be tolled easily by one man with one hand; and it was so tolled for service last Sunday by the Rev. H. T. Ellacombe, of Topsham, who is a small man, and in his eightieth year, as well as by Mr. Denison himself and the Rev. R. Cattley, the author of the Worcester Cathedral clock and bell scheme. It is actually much easier than clapping, or pulling the clapper by a rope, yet brings out the full tone of the bell much more grandly. This tone is half a note below the fourth quarter bell of the Westminster clock. The heaviest bells in England might be made tollable in this way at a very small expense; now most of them are only inadequately struck by clock hammers or by clapping, which is the cause of nine out of ten cracked bells. No wheel is required, but only a long lever fixed to the stock. The gudgeons must not be lower than the top of the bell.—*Times*.

The Corner-stone of Kendal Hospital was laid on Saturday last. The building is to be opened at the end of this year, and has been planned by Mr. Joseph Bintley.

A considerable change in the facility with which stone is dressed or polished is likely soon to be made, several of the master builders in Glasgow having at last erected machinery for that purpose, a step which in America had been taken nearly twenty years ago. On Saturday last the machinery was put in motion for the first time, and the result was most favourable. In less than half an hour 150 feet of stone suitable for buildings was dressed: an amount of work which, by the old method, eleven men could scarcely have accomplished in a whole day.

**The Drainage Works, Tewkesbury.**—The sewerage works of this town, which will cost about 3,000*l.*, are nearly completed, but a proposal which threatens to render them worthless, says the *Worcester Chronicle*, has just been laid before Parliament. The Severn Navigation Commissioners propose going to Parliament for powers to raise the level of the water between Tewkesbury and Gloucester by the erection of weirs at the latter place. As the Tewkesbury drainage works have not too much fall into Mill-Avon already, the permanent raising of the level will greatly interfere with them, and most probably cause the erection and constant use of pumping machinery. Foreseeing this consequence, the Board of Health has been for some time in communication with the Severn Commissioners, and a fortnight since a deputation of six members of the Board went to Worcester and had an interview with a committee of the Commissioners. 'The results,' says the *Tewkesbury Weekly Record*, 'were by no means satisfactory. The Commissioners' engineer, Mr. Leader Williams, could not see how the Tewkesbury drainage could be injured by his intended operations. The question was then asked, "If the proposed works are carried out, and it is proved that Tewkesbury is damaged thereby, will the Commissioners guarantee fair compensation?" The reply given by the

chairman, Mr. Lea, was as distinct and straightforward as the question: "The Commissioners will guarantee nothing." There seems therefore no choice left to the Board but to oppose the Commissioners when they go to Parliament for their Bill.'

**The Extension of the Midland Railway from Mangotsfield to Bath** will probably be opened for public traffic on the 1st of April. The present Mangotsfield station will not be used after the opening of the new line; but a new one, at present in course of construction, somewhat nearer Bristol, will replace it. This will be an additional means of transit between Bath and Bristol.

It is reported that a great treasure has been turned up among the stores of the India House—no less than the library of Timour, containing 'documents of extraordinary interest bearing on the history of Mahommed.' The *Pall Mall Gazette* adds that these documents are such as will cause a great part of Eastern history to be rewritten.

A subterranean passage leading from the school at Westminster (which was formerly the monks' dormitory) to the passage under the cloister has just been discovered. It was no doubt a *latrina* or *cloaca*, much of the same description as that found at New College, in connection with the 'Garderobe' of the time of William of Wykeham.

Before the re-assembling of Parliament, the interior of the House of Commons will have undergone a considerable alteration, the principal object of which is to make every portion of the Chamber available for the use of members.

**The Town Teme Bridge, Tenbury.**—This structure is admitted to be one of the best built in the counties across a portion of which it stretches, but, like most other structures built or raised centuries back, although then ample for all present purposes, now requires to be enlarged to meet the large and increasing traffic. The bridge forms a junction between the counties of Worcester and Salop. It has six arches, four and a half in Worcester and one and a half in Salop; is built of durable stone, with iron palisades. In width (and here is the evil) it is only 9 ft. 6 in., not allowing vehicles to pass each other while crossing it; and when we state that it is the great highway to the station, where terminate two important railways—the Tenbury, worked by the London and North-Western Company, and the Tenbury and Bewdley, worked by the Great Western Company—it will be palpable to every one that in its present state the bridge is a great impediment to traffic, as well as being very dangerous. Application has been made to the Quarter Sessions of the two counties interested for grants towards the cost of increasing the width, and a local subscription has been for some time open.

**New Palace of Justice.**—The strenuous efforts made by the *Times* to obtain a favourable reconsideration of the site for our new Palace of Justice are beginning to tell on society and on the profession. We predict success. It is no secret that the new Commissioner of Public Works supports the change of site from Carey Street to Thames bank, and we are glad to report that a practical difficulty standing in the way of that exchange—the apparent impossibility of finding room for a repository of wills on the preferential site—has been overcome by the discovery that we have plenty of room for a wills repository on the Rolls estate in Chancery Lane. The Government and the public are now of one mind; the legal profession is divided, but the better opinion is gaining ground in the Inns of Court, and we cannot pretend to doubt that the new Palace of Justice will be built on the noblest site in the world.—*Athenæum*.

A New Church has just been completed at Padiham, Lancashire, from the designs of Mr. Wm. Waddington, architect, of Padiham and Burnley. It is designed in the style of the early part of the fifteenth century, and has a lofty tower, containing a peal of six bells. The work has been carried out by local contractors; it will accommodate 1,000 persons, and has cost about 8,000*l.*

A New Wesleyan Chapel in the Italian style was opened recently in Lower Broughton, Manchester. It has been designed to hold about 900 persons, and has cost about 6,000*l.* The work has been executed by Mr. Foggett, of Cheetham, from the designs of Mr. Wm. Waddington, of Burnley.

The Free West Church in Union Street, Aberdeen, is now completed, and will be opened on Sunday next. The cost is upwards of 14,000*l.* The architect is Mr. James Mathews.

At the 20th Annual Meeting of the London Congregational Chapel Building Society, it was stated that the society is at present engaged, with Mr. S. Morley, M.P., in the erection of twenty-four chapels, to each of which Mr. Morley contributes 500*l.*, and the society 500*l.*

#### MEETINGS OF LEARNED SOCIETIES.

INSTITUTION OF CIVIL ENGINEERS.—Tuesday, February 9, at 8 P.M. 1. Discussion on the Mauritius Railway, Midland Line. 2. 'On the Lagoons and Marshes of certain parts of the Shores of the Mediterranean,' by Professor Ansted, F.R.S.

INSTITUTION OF SURVEYORS.—Monday, February 8, at 8 P.M. Adjourned discussion on paper by Mr. Ryde. Mr. J. Bailey Denton on 'The Future Extension of Railways with reference to their Influence on Landed Property and Agriculture.'

ROYAL INSTITUTION.—Tuesday, February 9, at 3 P.M. Mr. Westmacott on Fine Art. Thursday, February 11, at 3 P.M. D. M. Foster on 'The Involuntary Movements of Animals.' Friday, February 12, at 8 P.M. Colonel Drummond Jervois on 'The Coast Defences of England.' Saturday, February 13, at 3 P.M. Professor Odling on 'Hydrogen and its Analogues.'

SOCIETY OF ARTS.—Wednesday, February 10, at 8 P.M.

#### PUBLISHER'S ANNOUNCEMENT.

Advertisements cannot be received for insertion later than 2 P.M. on Thursdays.

Temporary Office, 4 Monument Yard, London.—GILBERT WOOD, Publisher.

**THE GAZETTE.**

**PARTNER-SHIPS DISSOLVED.**

Edward Higgins and Thomas Jacob Jones, Newport, Monmouthshire, timber merchants—William Wilson and George Wilson, High Street, Lincoln, plumbers—James Storey Allatt and William Derry, Leeds, iron merchants—Samuel Young and Samuel Hughes, Regent Road, Salford, Lancashire, booksellers—Pratt and Feather, Bingley, Yorkshire, plasterers—Gradwell and Palmer, Stockport, timber merchants—Pearson and Fawcett, Kingston-upon-Hull, builders—R. Heap and Son, Kirkland Kendal, Westmoreland, joiners.

**DECLARATIONS OF DIVIDEND.**

J. Armitage, Great Paxton, engineer—first div. of 1s. 8d. Wednesday next and two subsequent Wednesdays, at Mr. Edwards's, Basinghall Street.

**BANKRUPTS.**

George Poulson, The Elms, Harrow, builder, Feb. 17, at 1—William Riley and Charles Frederick Riley, late of Gunnersbury Place, Kew Bridge, Kew, carpenters, Feb. 22, at 1—Samuel Penfold, Great Dover Street, house decorator Feb. 17, at 1—William Thornton, St. John's Hill, Battersea, builder, Feb. 19, at 1.

To SURRENDER IN THE COUNTRY.—Reuben Hincliffe, Huddersfield, Yorkshire, joiner and builder, Feb. 15, Leeds —J. W. Lee, Queen Street, Leicester, engineer, Feb. 9, Birmingham—William Airey, Liverpool, joiner, Feb. 16, Liverpool—Alfred Green, St. Leonard's-on-Sea, upholsterer, Feb. 15, Hastings—Joseph Newcombe, Torquay, builder, Feb. 12, Exeter.

**TENDERS.**

OLD BUNDON, NEAR SUNDERLAND.—For Farm House and Buildings. No quantities supplied. Mr. G. A. Middlemiss, Architect.

Mr. Parkin Thornton . . . . .	£613 0 0
Mr. Henry Oliver . . . . .	615 17 7½
Messrs. Clark & Turnbull . . . . .	613 6 8
Messrs. Geo. Reals & Sons . . . . .	610 0 0
Messrs. Robinson & Pile . . . . .	605 0 0
Messrs. Cole & Hindhaugh . . . . .	600 0 0
Mr. Geo. Moir (accepted) . . . . .	600 0 0

DARLINGTON.—Fourteen cottages for the Low Parks Land Company. Mr. Wm. Peachey, A.R.I.B.A., architect.

Accepted tenders:—

Richardson & Cansic (brick and stone-work) . . . . .	£933 5 0
Ormrod (plastering) . . . . .	224 0 0
Wharton (slating) . . . . .	98 14 10
Elwin (carpenter and joiner) . . . . .	474 0 0
Johnson (plumber, glazier, and iron-founder) . . . . .	126 1 5
Dryden (painter) . . . . .	42 0 0
	£1,898 1 3

HEATHWOOD.—For erecting a residence, coach-house, and stables, at Heathwood, Kent, for John Webster, Esq. Mr. John Tarring, architect, 69 Basinghall Street, E.C. —

Stimpson . . . . .	£8,717
Dove Brothers . . . . .	3,600
Henshaw . . . . .	3,394
Patman and Fotheringham . . . . .	3,385
Hill & Sons . . . . .	3,340
Keyes & Head . . . . .	3,189
Robinson . . . . .	2,942

MALVERN COLLEGE HOUSE.—Haddon, Bros., architects, Great Malvern and Hereford:—

Wood & Son . . . . .	£5,904 10 0
Smart . . . . .	5,830 0 0
Garrutt . . . . .	5,823 0 0
Dixon . . . . .	5,649 18 3
Griffiths . . . . .	5,616 0 0
McCaun and Everal . . . . .	5,489 0 0
Inwood . . . . .	5,106 0 0
Slim (accepted) . . . . .	6,092 0 0

**APPOINTMENTS VACANT.**

SMETHWICK.—Surveyor. Salary 100l. per annum. Application to be made on or before February 9. Mr. Ralph Docker, Clerk to Local Board.

MALVERN.—February 19.—Surveyor and Inspector of Nuisances. Total salary 200l. per annum, with unfurnished house, gas, and coal. Chairman of Local Board, Gt. Malvern.

**COMPETITIONS OPEN.**

ROYAL ACADEMY OF ARTS.—National Gallery. For the best painting in Oil—or Model and Design in Painting, Sculpture, and Architecture. The Gold Medal and the Discourses of Presidents Reynolds, West, &c.; and for the best Copies of Drawings, Models of Life, the Antique in Landscape Perspective, &c. The Silver Medals, &c. November 1.

ROTHERHAM.—March 15.—For Plans, &c., for erecting a Public Hospital and Dispensary. A prize of 75l. is offered for the best design, 50l. for the second, and 25l. for the third. John Barrae, hon. secretary, Rotherham.

DOVER.—Feb. 20.—St. Mary's Burial Board. Designs for laying out 9½ acres, for the purposes of a new Cemetery. Premiums 60l. and 20l. G. Fielding.

KINGSTON-ON-THAMES.—March 1.—Design for new School and Master's Residence. Cost not to exceed 5,000l. F. Gould, Esq., Kingston-on-Thames.

LEAMINGTON.—Feb. 10.—Royal Pump Room Gardens. Designs for a Memorial Fountain. A. S. Field, Leamington.

BRECON.—March 1.—Plans and Estimate for Alterations of County Gaol. A premium of 30l. is offered for best plan. Edward Williams, Clerk of Peace, Brecon.

**CONTRACTS OPEN.**

CITY OF LONDON.—February 23.—For Stone Paving in Carriageways and Footways. Joseph Daw, Sewers' Office, Guildhall.

LONDON.—For pulling down and re-constructing premises, No. 15 Newgate Street. Mr. William Smith, 12 Cophall Court, E.C.

INDIA OFFICE.—February 8.—For supply of Canvas; also for 600 Tons of Smythly Coal, to be delivered at Calcutta. Mr. Gerald C. Talbot, India Office, Westminster.

EAST INDIAN RAILWAY COMPANY.—February 11.—For supply of 1,500 tons of best Smythly Coal, also 1,000 tons of best Foundry Coke. Mr. D. J. Noad, Nicholas Lane, E.C.

ST. GEORGE, HANOVER SQUARE.—February 20.—For Materials from March 25, 1869, to March 24, 1870. Mr. Joseph Henry Smith, Clerk to the Vestry.

WANDSWORTH COMMON.—For Fencing in an Estate. Mr. T. Barnett, 6 Lower Belgrave Street, S.W.

ST. GILES, CAMBERWELL.—February 15.—For Repairing of Roads. Mr. Geo. Wm. Marsden, Vestry Hall, Camberwell.

ST. MARY ABBOTS, KENSINGTON.—February 10.—For Carting and Carrying away Dust, &c. Reuben Green, Vestry Hall, Kensington.

UPPER HOLLOWAY.—For making up about 200 feet of roadway. 192 Albany Street, Regent's Park.

NEWINGTON SICK ASYLUM.—The Five Architects who sent in Plans are requested to supply 20 copies of Printed Reports. Joseph Burgess, Vestry Hall, Wandsworth, S.E.

ST. GILES, CAMBERWELL.—February 8.—For sinking about six Wells. Mr. J. C. Reynolds, Wells Street, Southampton Street, Camberwell.

CARDIFF GASLIGHT AND COKE COMPANY.—February 10.—For excavating, building, puddling, Mason's and brickwork required in the construction of a Brick Gasholder Tank, at their Grauge Station. The interior diameter of the tank will be 112 feet and the depth 29 feet 6 inches. Henry Bowen, Engineer, Cardiff.

CARDIFF LOCAL BOARD OF HEALTH.—Feb. 28.—For the supply of Fifty Iron Lamp Pillars and Fifty Iron Lamp Holders. Geo. Salmon, Clerk to the Local Board, Town Hall, Cardiff.

CARDIFF LOCAL BOARD OF HEALTH.—Feb. 28.—For the construction of a new Outfall Sewer, Channel, and Works connected therewith. Geo. Salmon, Clerk to the Local Board, Town Hall, Cardiff.

BURTON-ON-TRENT.—February 17.—Contract for Locomotive Engine Shed, with necessary Offices and Workshops. Plans, &c., to be seen at Mr. H. Woodhouse's Office, Stafford Station. Tenders to be sent to S. Reay, Secretary, Euston Station, London.

CASTLEFORD LOCAL BOARD OF HEALTH.—For the Sinking of a Well or Pumping Shaft for the Waterworks intended to be forthwith established for the above board at Castleford, in the county of York. George Bradley, clerk of the Board, Castleford.

SHEFFIELD.—February 10.—For the erection of two wings with central building and offices for the New South Yorkshire Asylum at Wadsley Park, near Sheffield. Mr. Bernard Hartley, West Riding Surveyor, Pontefract. Bills of quantities, prepared by Mr. Thomas Taylor, Surveyor, Manchester.

ILKLEY.—February 11.—For the various works required in the erection of a pair of semi-detached Villas, at the bottom of Parish Gill Road, Ilkley. Thomas Ambler, Architect, 9 Park Place, Leeds.

MORLEY.—February 24.—For about 1,644 yards of 9-inch Pipes, which are over and above the quantity they require for their water supply. William Smith, jun., Clerk, Morley.

SHANKLIN (Isle of Wight).—For the erection of a small Villa. Bills of quantities can be had on application to Mr. J. P. Harper, Osmaston Street, Derby.

GREENWICH DISTRICT.—February 17.—For laying down Tooled York Paving Granite Kerb, and other Materials and Works required for making up the road and footways of Manor Road, in the Parish of St. Paul, Deptford. E. W. James, Clerk to the Board, Greenwich.

NORTHAMPTON.—February 18.—For the supply and erection of a Gasholder, 100 feet diameter by 30 feet deep, with columns, girders, &c. John Emsun, jun., Northampton Gas Company, Northampton. See Advertisement.

TOWN MALLING.—March 11.—For Repair of Roads from March 25, 1869, to March 25, 1870. W. South Norton, Town Malling.

OXFORDSHIRE.—February 9.—For Purchase of Pudlicote Estate, either in lots or for the whole property. James Cooper, Esq., 5 Billiter Street, E.C.

SMARDEN, KENT.—Feb. 10.—For Reseating and Restoring Smarden Church. Rev. F. F. Haslewood, Rector, Smarden.

TOPSHAM, DEVON.—February 8.—For Construction of a Storage Reservoir to contain about 10,000,000 gallons, together with Filter Beds, and other works attached thereto. Also for providing and laying about 95 tons of Cast-iron Mains, and about 34 tons of Cast-iron Distribution Pipes. Mr. William Serena, Topsham, Devon.

SPAIN.—March 1.—For Submarine Telegraph Cable. Urbano Montego, 155 Fenchurch Street, E.C.

BIRMINGHAM.—Feb. 17.—Erection of Schools to accommodate 300 Boys, with Dining Hall, Workshops, Apartments for Masters and Teachers, and other Buildings. Martin and Chamberlain, Christ Church Buildings, Birmingham.

CITY OF MANCHESTER.—Feb. 13.—New Police Courts.—For the erection of the above Courts, in accordance with the plans and specifications which have been prepared by the Architect, Mr. Thomas Worthington, of Manchester. Joseph Heron, Town Clerk, Town Hall, Manchester.

BRADFORD.—February 11.—For the erection of Sixteen Houses and Two Shops, near Cannon Mill, Horton Road. John Simpson, 6 William Street, Little Horton Lane, Bradford.

LEEDS.—For the various works required in the erection of six good Houses, proposed to be built near Armley Station. John Hall, Architect, 108 North Street, Leeds.

WELLS (Somerset).—February 20.—For the execution of the Walls, and other stone-work required in the erection of a Chapel and Approaches to Lunatic Asylum. Parr & Strong, 25 College Hill, E.C. (See Advertisement.)

FULHAM.—February 10.—For supply of 750 tons of Unbroken Blue Guernsey Granite. Mr. T. Aplin Marsh, Clerk's Office, Fulham Union.

WISMAR.—For about 30,000 feet of Glazed Clay Pipes. The Street Commissioners, Wismar.

DURHAM.—February 22.—For erection of an Electric Light Establishment at Souter Point, midway between Sunderland and South Shields. Mr. Robin Allen, Secretary, Trinity House, London.

PORTSMOUTH.—February 23.—For purchase of 10 Boilers with Iron Tubes, lying at the Dockyards. Mr. Antonio Brady, Registrar of Contracts, Somerset House.

KING'S LYNN.—February 19.—For manufacturing Thirty-seven Screw Moorings. Mr. J. O. Smetham, Solicitor, King's Lynn.

HINGKLEY.—February 8.—For erection of a Hoistery Factory, Chimney, and Two-Storey Warehouse in Bond Street. Mr. Francis Drake, Architect, Bond Street, Hingkley.

PETERBOROUGH CORN EXCHANGE.—The Directors have extended the time for receiving plans to February 17.

NEW SOUTH WALES RAILWAY (Great Western Railway).—February 9.—For supply of materials. Mr. W. C. Mayne, 118 Cannon Street, E.C.

CAMBRIAN RAILWAY COMPANY.—February 16.—For supply of 1,000 tons of double-headed Rails and Fish Plates. Mr. Geo. Lewis, Company's Offices, Oswestry.

BIDEFORD.—February 13.—For erection of a large Public Hall. Gould & Sons, Architects, Square, Barnstaple.

DOVER.—Feb. 10.—For Reflooring and Refitting the Church of St. Margaret at Cliffe. Mr. Christian, 8A Whitehall Place, B.W.

DUBLIN.—February 9.—For Coal, Coke, Turf, Bogwood, and Wood for kindling Fires for the barracks of Cork, Fermoy, Belfast, Dundalk, and Newry, for One Year, commencing April 1.

WALTHAMSTOW SOUTH-EASTERN SPECIAL DRAINAGE DISTRICT.—Feb. 8.—For the construction of the drainage works in the above district. The works comprised in the contract will be about as follows:—800 yards of 24-inch circular brick sewer, 730 yards of 18-inch pipe drain, 100 yards of 15-inch, 1,670 yards of 12-inch, 190 yards of 9-inch pipe drain. Wm. Houghton, Clerk to the Committee; Messrs. Houghton and Wragg, 15a, St. Helen's Place, E.C.

NORD, DEPARTMENT OF FRANCE.

Completion, Repair, and Maintenance of Canals and Navigable Rivers, in four lots, during the space of six years, commencing with the present year.

Lot 1.—The Canal of Senese, length about 27,000 yards; the middle scarpe, from the Canal of Senese to the foot of scarpe, about 7,500 yards; the inner scarpe, from the sluice of Saint-Amand to its confluence with the Scheldt, about 7,800 yards; the Canal of the Haute-Deule, between the scarpe and the bridge of Banvin, about 28,000 yards. Estimated annual expense, upwards of 2,000l. Deposit by way of guarantee, 68l.

Lot 2.—The Canals of the Upper and Middle Deule, between the bridge of Banvin and the sluice of Saint-André at Lille, length about 25,000 yards; the Lower Deule, between the above sluice and the Lys at Deulmont, length 18,000 yards. Estimated annual expense, 1,200l. Deposit, 40l.

Lot 3.—The Lys, from Aire to its confluence with the Deule, length 58,000 yards; the Canal of Hazebronck, the Canal of Nieppe, and the Canal of Prévaent and the Bourre, length 27,000 yards. Estimated annual expense, 960l. Deposit, 32l.

Lot 4.—The Canal of Bourbourg, between the river Aa and Dunkirk, upwards of 30,000 yards; the Canal of the Haute-Colme, between the Aa and Bergnes, length 39,000 yards; the Canal of the Base-Colme, between the frontier and Bergnes, with branch to Hondschote, length 15,000 yards; Canal from Bergnes to Dunkirk, 9,000 yards. Estimated annual expense of the lot, 1,080l. Deposit, 86l.

Adjudication to be made at one o'clock on February 26. Forms of tender and all particulars to be had, and tenders to be sent in to the Préfet, at the Hôtel de la Préfecture, Lille.

ROUEN, FRANCE.—Enlargement of the Palace of the Prefecture, estimate for the whole work about 28,000l.; and construction of a new wing to the Female Lunatic Asylum of that town, estimated at upwards of 40,000l. Amount to be deposited as security, 1,400l. in the former, and 1,800l. in the latter case. The tenders, as usual in France, to be made at a discount on the estimates. All particulars to be obtained at the Bureau des Dépêches in the Prefecture Rouen. Tenders to be sent in before February 11, when the adjudication will take place.

ROUEN.—The contract for the work relating to the Female Lunatic Asylum (see *The Architect* of January 30) is postponed till further notice. This does not affect the contract for the Prefecture.

PARIS.—On February 25 the contracts will be entered into, at the offices of the Minister of Marine, for the supply of Teakwood, to be delivered in the ports of Cherbourg, Lorient, and Rochefort, from Moulmein, Rangoon, or Bankok.

MAZIERES, FRANCE.

Rails, &c., for the Departmental Railway of Ardennes, in five separate lots.

Lot 1.—3,500 tons of Rails, Vignole pattern, weighing 30 kilogrammes the metre current. Estimated cost, 28,000l. Deposit, by way of guarantee, with the tender, 400l. Security for the performance of the contract, 1,000l. in money or Government stock, or 1,200l. in house property.

Lot 2.—17,500 Fish-plates, weighing about seventy tons. Estimated at 588l. Security, 20l. in cash or bonds.

Lot 3.—122,900 Bolts, in Galvanized Iron, weight about forty tons. Estimated at 700l. Security, 20l.

Lot 4.—35,000 Fish-bolts, weighing about sixteen tons. Estimated at 243l. Security, 8l.

Lot 5.—Furnishing, Transport, Fixing, and Painting of Iron Bridges, weighing about 113 tons, and estimated at 2,262l. Deposit with tender, 20l. Security for performance of contract, 80l.

All particulars to be obtained either at the Prefecture of Mazieres, or of the Director of the Departmental Railways, in the same town. Tenders by the morning of February 17.

NANTES, FRANCE.—Construction of a bridge over the Sevre, at Hale-Fouassière. Estimate, 3,770l., with probable addition, making up the sum 4,240l. Security, 126l.

Particulars to be ascertained at the Prefecture of Nantes; tenders to be sent in by the morning of February 24.

RANDELL & SAUNDERS have much pleasure in informing their friends, and the Building Trade generally, that to facilitate building operations during the winter season, they have provided a large stock of well-seasoned Cornham Down Block Stone.

Bath Stone Office, Cornham, Wilts.—[Advr.]

STONE BROTHERS are now supplying Cornham Down Stone—Well seasoned, fit for immediate use, and of the best quality.

Box Ground Stone—Unmediated for even texture and durability.

Fairleigh Down Stone—Matchless for good quality and large sizes.

Combe Down Stone—Fine in texture, free working, and very durable.

Prices, and cost of transit to any part of the kingdom, on application to the Bath Stone Office, Bath.—[Advr.]

STONE BROTHERS are now supplying Cornham Down Stone—Well seasoned, fit for immediate use, and of the best quality.

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# The Architect.

## THE NEW LAW COURTS.



**A** PART from the special interest which the building of the new Law Courts must possess for the thousands who are professionally concerned in the project, there are many aspects of the subject to which none of our citizens can afford to be indifferent.

On whichever side of the Strand the building may be placed, it is certain that it will involve an extensive reconstruction of the map of London at one of its most interesting points. For opinions do not

appear to differ at all as to the neighbourhood in which the Law Courts must be erected. A common-sense and business-like concession is made to the convenience of the legal profession by the selection of a site in what is known as the legal quarter of the metropolis.

The two schemes now before the public are, therefore, both in the neighbourhood of Temple Bar, the width of the Strand being almost the extent of the difference between them. We publish this week carefully-prepared plans of the two proposals, which will correctly represent the real issue, as to *locality*, between what are known as the 'Carey Street' and the 'Thames Embankment' sites. The discussion of their relative merits is necessarily exciting great public interest, as the journals and the gossip of the day abundantly testify. The argument, however, seems to be all on one side. Whereas the Carey Street, or north-of-the-Strand site, was the one fixed on by the Law Courts Commissioners for the proposed building, no one seems to be forthcoming who really can make out a strong case for it as against the more recent proposal of the Thames Embankment or south-of-the-Strand site. We must except, of course, from this statement the views as to locality put forth by some members of those Inns of Court which lie north of the Strand. Such views seem to be inspired solely by the fact that large numbers of the legal profession are located in Lincoln's Inn, who seem to regard their occupation of that quarter as a Medo-Persian kind of tenure. Mahomet will not come to the mountain, so the mountain must perforce come to Mahomet. In other words, Lincoln's Inn will not come to the Law Courts, and therefore the Law Courts must go north of the Strand.

In this view of the subject it needs hardly to be observed that the Temple, with which most of the traditions of the legal profession are associated, has to make its way to the Law Courts over a bridge which is proposed to span the Strand at Temple Bar. It is but a poor compliment to the modern idea of public improvements in the heart of such a city as London that such an expedient should be suggested.

The project by which Sir Charles Trevelyan proposes to solve the difficulty is intelligibly laid down in his plan, Lincoln's Inn being put in possession of Somerset House and the ground now occupied by King's College. The Law Courts occupy the extensive intervening space eastward towards the Temple. The result is, therefore, that the building which is sometimes comprehensively called the Palace of Justice is placed on a site where it will be flanked by the two chief Inns of Court, while the whole will be bounded by a leading thoroughfare on the north, and on the south by a new highway such as no city in the world can parallel, combining as it does facilities for communication by water, rail, carriage, and foot.

And here arises a view of the new project which has not yet had its proper value given to it. Is it sufficiently considered in discussing the site of the New Law Courts that there is, and must continue to be, an essential connection between the seat of the Legislature and the buildings in which the laws are to be administered? The House of Lords, for example, as the ultimate Court of Appeal must remain at Westminster; while, at the same time, something like two hundred members of the House of Commons belong to the profession of the law, and may reasonably be regarded as the men who represent in their practice the leading interests in the Courts of Justice. Direct communication, therefore, between the Houses of Parliament and the New Law Courts becomes a matter of real, and not imaginary, necessity. Hitherto Parliament Street and the Strand have been the thoroughfares which the busiest of our lawyers have had to traverse in their daily practice. The Thames Embankment, however, now offers a nearer and readier means of communication. If the Carey Street site for the New Law Courts be adopted, it will follow that the men who are most prominently engaged in the business of the Courts will be required to traverse the Embankment route to Essex Street, then to ascend 80 feet to reach the Strand—over the proposed site, in fact—afterwards to cross the thoroughfare of the Strand, and finally to face the ascent of something like 40 steps to gain the business level of the Courts of Justice!

By the Thames Embankment project, those features of the Carey Street site—serious difficulties from the modern business point of view—are as much reduced as is possible, for that part only of the

above-described route which forms the direct line between Westminster and the New Law Courts represents the whole method of communication.

The two sites present striking contrasts in respect of convenient access and approaches. On the one site, the Law Courts would take their principal floor level from Carey Street, which can hardly be called a thoroughfare; and that would necessitate an ascent of something like 40 steps from the Strand, which is really the one great thoroughfare from which the building should take its cue as to levels. The Thames Embankment site, on the other hand, has the advantage of Strand front and river front, each on a first-class thoroughfare, and the former being the level of the principal business floor and of the Courts themselves.

Is it just, or even seemly, in view of the fact that the whole weight of argument is with the Embankment scheme, that local prejudices should interfere to arrest so manifest an improvement, not only in the external aspect of London, but in the very convenience and capacity of the scheme itself?

The real question before the public is not which site is most convenient for particular Inns of Court, but which is the best site for the Palace of Justice *per se*. The Law quarter is determined on in any case, and one would suppose that the legal profession would accept that fact as sufficient for their wants. There is something almost grotesque in the idea of the New Law Courts, the largest building project the country has ever undertaken since the Houses of Parliament, and one which must be devised for centuries, being asked to shape and settle itself to fit the existing convenience of a law district which cannot be expected to remain long as it is, if comfort, cleanliness, and convenience are desired by the class who tenant it.

In his plan for the Thames Embankment site, Sir Charles Trevelyan goes to the root of the matter at once, and this is the only worthy method of dealing with such works as we are about to undertake. The tinkering method has had a very fair trial in all conscience, and we know that it is invariably the clumsiest and the dearest in the end.

If Lincoln's Inn will permit the Law Courts' building to take its place on a magnificent site as to position, and one which, year by year, must become increasingly valuable, with its new highways from east to west, and new communication with southern London, and will accept for itself the corresponding site westward which the Temple now occupies on the east, the whole question will be solved, and in a way which we venture to predict every year's experience will approve. The plan we give shows 'New Lincoln's Inn' as occupying Somerset House and the ground belonging to King's College. The new hall, library, and chapel would face the river and Embankment; and, as far as we have ever been able to learn, there are no associations connected with the present site or buildings of Lincoln's Inn which could suggest any misgivings as to such a plan on archaeological grounds. On the other hand, everything in the shape of comfortable and convenient chambers would be gained, and a fitting appropriation would be provided for Somerset House; and without some such provision, that noble building bids fair ere long to fall into the same ignoble state of disuse to which Greenwich Hospital is at present reduced.

The ground already purchased on the north of the Strand would then become available for the other Inns of Court, which, in the event of the Law Courts being placed there, must either be obliterated altogether or left out in the cold. Gray's Inn has almost ceased to be a law quarter, while Clement's and Dane's Inns would have to make room for the Courts if placed on the Carey Street site. In the scheme of the Embankment site, however, those societies may, and no doubt would, resume their normal status, and in immediate proximity to the tribunals or courts.

Not the least valuable feature in this plan is the facility it offers for a new thoroughfare, which will connect not only the Embankment thoroughfare, but southern with northern London. Essex Street, which would be opened up into a wide artery, to be called the 'Embankment and Strand Arcade,' would be continued through to Holborn, passing the eastern side of Lincoln's Inn Fields. If it had no other recommendation, the plan which admits of such a communication would have much in its favour. There is not at this moment a direct north and south route in the metropolis. Chancery Lane cannot be regarded as an exception, for it not only lies midway between Waterloo and Blackfriars Bridges, but is in itself the daily scene of choked traffic, for the simple reason that in the heart of London it has to do duty as the link between the two great thoroughfares of the Strand with Fleet Street, and Oxford Street with Holborn.

The confined and bottle-necked character of the Strand in the neighbourhood of Temple Bar is not likely to remain long as a blemish on the map of our main communications. If metropolitan improvements are to mean anything like progressive change, something must be done towards a reconstruction of the Strand at this quarter. If such a work is to be undertaken in addition to, or irrespective of, the New Law Courts, a costly item is evidently in store for us. But a reference to the plan will show that the adoption of the Embankment site on the south side of the Strand for the Law Courts building involves this required new line for the old thoroughfare.

We feel, in short, that there is no necessity for further commentary on the advantages to be secured by the site which Sir Charles Trevelyan has proposed and argued for with a skill and an intimate knowledge of all the surrounding facts which has not yet been com-

bated. If any one will devote half an hour's study to the two plans we publish, we venture to believe that the verdict will be that, by the adoption of the 'Thames Embankment,' the public have everything to gain, while the legal profession have really nothing to lose. The 'Carey Street' site, on the other hand, can scarcely be regarded as an *improvement* at all, in our modern reading of the word, when it is seen how it affects, not only the present, but the future map of London at one of its busiest points.

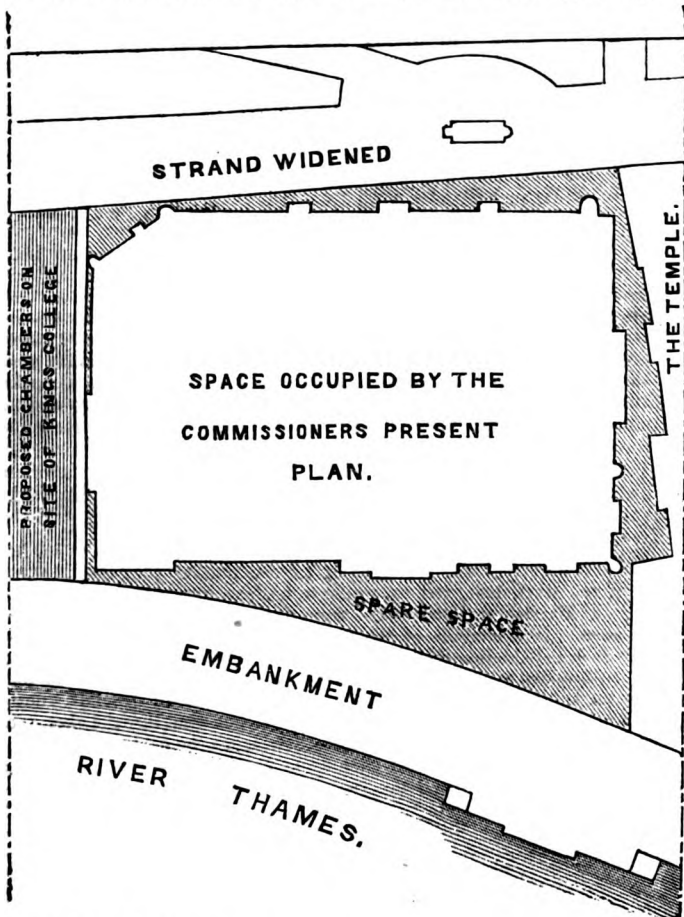
We regard it, writing as much in the interests of architectural art as of public convenience, as a fortunate circumstance that the actual settlement of the situation of the New Law Courts should have been delayed by a variety of causes, chiefly arising no doubt from the complex arrangements and multifarious requirements of the building we are about to undertake.

One of the most unfortunate tendencies with us now-a-days is to hurry on all our public works with a precipitancy which barely allows time for even a true perception of our wants, to say nothing of the best and most perfect method of meeting them. Too often, to paraphrase a well-known saying, 'we build in haste and repent at leisure.' If the discussion of the schemes for the New Law Courts now before the public results in a comprehensive and far-seeing policy as regards site and surroundings, we may confidently anticipate that Londoners a hundred years hence will have cause to be thankful for the time spent in ventilating the question of the best locality for the New Law Courts.

### IS THE EMBANKMENT SITE TOO SMALL OR NOT ?

STATEMENTS based on an unfortunate and entire misconception—we will not say misrepresentation, for we believe the statements to have been only carelessly, not wilfully incorrect—of the proposals of Sir Charles Trevelyan, have obtained circulation in the course of the discussion on the site for the Law Courts. These statements, if left uncontradicted, cannot fail to mislead the public mind, and to produce the erroneous idea that on the Thames Embankment site there is not room for the proposed building.

Writing to the *Times* on February 2, a correspondent signing himself 'A Surveyor' makes statements which may be taken as a fair sample of those which we refer to. They amount to this:—that the writer has measured Sir Charles's site and Mr. Street's ground plan,



and after allowing what he considers necessary for approaches, he finds the remaining available space to be actually smaller than the area now covered by the Law Courts as designed by Mr. Street; the alleged deficiency amounting to 40,000 superficial feet.

The materials for this comparison are the Ordnance Survey and Mr. Street's block plans, which have been reduced to the same scale of five feet to one mile, and engraved. These documents are procurable

without much difficulty, or they can be consulted in the Library of the Royal Institute of British Architects.

We have instituted a careful and entirely independent examination of the plans, the result of which may be stated in a few words, and is exhibited to the eye in the sketch plan appended to this article. We find that the 'Surveyor' has measured Mr. Street's plan, it is true; but he has measured something quite different from Sir Charles's site. It is fair to add, that, with one comparatively unimportant exception, we have found the 'Surveyor's' dimensions correspond with the map; though the data he has chosen to assume do not, in the least, tally with those furnished by Sir Charles Trevelyan's letters.

If any one taking the Ordnance map with the Embankment marked thereon, will draw a line on the map from the angle of Somerset House to the north-eastern angle of the houses in Essex Street, this will form the northern boundary of the site. A line parallel to the face of the Thames Embankment, leaving an uniform width equal to that in front of Somerset House, will form its extreme southern boundary. A straight line, coinciding with the greatest projection of King's College, may be taken as its western margin, and the irregular boundary of the Temple will limit it to the east.

If this plot, thus bounded, and shown to a small scale on the map which we this day publish, be covered with a tint, and a piece of paper, the exact size and shape of Mr. Street's plan, be laid upon it, the appearance presented in our woodcut will be seen; the tint will be visible round all the edges of the white patch, showing *spare land on every side*, and proving incidentally that the design must be revised, and can be, if necessary, enlarged, if the site be changed.

This ocular demonstration will be enough for most readers; but to make clear the nature of the misapprehension under which the 'Surveyor' and those who side with him labour, we must have recourse to figures.

This site, as we have described it, exceeds the largest area ever claimed in figures by Sir Charles Trevelyan by the whole amount won from the river. Omitting, then, the Embankment portion of the site altogether, but retaining the gain accruing from correcting the line of the Strand, the figures are as follows:—

Length from King's College to the boundary of the Temple (on a give and take line, this boundary being irregular)	850 feet
Deduct for one private roadway . . . . .	40 "
Remains an available length of . . . . .	810 "
Depth from Strand (corrected line) to Embankment at King's College . . . . .	450 "
Ditto at Arundel Street (east side) . . . . .	540 "
Ditto at Essex Street (east side) . . . . .	680 "
Mean of the three . . . . .	556 "

Now 810 feet multiplied by 556 feet give an area of 450,300 feet, showing that Sir Charles Trevelyan was within rather than beyond the truth when he stated the area at 446,500 superficial feet; upon which to plant buildings equivalent to those, the plan of which at present occupies an area correctly stated by the 'Surveyor' at 370,000 square feet.

By the gratuitous assumptions that the eastern side of Essex Street, and not the Temple, was to be the eastern boundary, and that 120 feet instead of 40 feet was to be deducted from the available length for roadways, and by conveniently forgetting that the line of the Strand was to be corrected in such a manner as to enlarge the available site in the manner shown on the plans we this day publish, it is of course possible to cause the facts to appear other than they are; but we trust that our readers, with the figures before them and the plans in their hands, will be at no loss to discover where the truth lies, and will remain convinced that on the Thames Embankment site there is ample room for the proposed buildings.

### PARIS STATISTICS.

TO the reader who knew Paris under the reign of Louis-Philippe, or during the short period of liberty, equality, and fraternity which followed the forbidden municipal dinner, the following statistics, showing what has been done since then down to the end of last year, will not be uninteresting, although they cannot, of course, be compared with the figures which we could show under the various heads here in London. We would premise that we have gathered them from French sources, merely converting the kilomètres and hectares into English miles and acres. In 1852 Paris proper covered only an extent of 935 acres, whilst the suburbs covered another 1,209 acres; since the annexation of the latter within the *Octroi* of the city, Paris may now be considered to occupy about 2,200 acres. Of this space, a network of 239 miles of streets occupied 125 acres in 1852; to-day, 528 miles of streets, including all the Boulevards, occupy 338 acres, leaving a space of 1,862 acres for house property. Thus, whilst formerly the average width of the streets throughout Paris was 39 feet, it is now increased to 43½ feet.

The pavements in these streets in 1852 were only 263 miles in length, covering a space of 29 acres; of these 263 miles, 178 were within the old city boundaries, whilst 85 were in the suburbs. At present the total length of pavement is 676 miles, covering 82 acres. Thus it will be seen that the acreage is barely in advance of what it

was in 1852, considering the increase in length; for whilst fifteen years ago the average width of the Paris pavements was 8 feet 4 inches, it is now 8 feet 11 inches. Besides the pavements, there were, in 1852, 40½ miles of unpaved sidewalks, lined with 50,000 trees; there are now 122½ miles, lined with 95,577 trees, showing that formerly the trees were planted closer together than they are now. The parks surrounding Paris are in all about 450 acres in extent. Of these the Bois de Boulogne is the largest, containing 233 acres; next comes the Bois de Vincennes, with 200 acres; then the Buttes-Chaumont, with 7 acres; the Parc de Montsouris, with 5 acres; and, lastly, the Parc de Monceaux, with 3 acres. Of the Avenues and other open places, the largest is the *Place du Roi de Rome*, containing 6½ acres; next come the *Champs Elysées*, with nearly 5; then the *Avenue de l'Impératrice*, with 3; the *Boulevard Richard Lenoir*, with 1½; and the *Avenue de l'Observatoire*, with only three-quarters of an acre. Twenty-three other open places scattered throughout Paris contain 5 acres more, whilst twenty-one squares, laid out since 1852, occupy another 2½ acres.

Since that period many of the bridges which span the Seine have been altered, repaired, and enlarged, whilst others are entirely new. To the former belong the Ponts de Bercy, d'Austerlitz, Louis-Philippe, d'Arcole, Saint Louis, Saint Michel, Notre Dame, des Invalides, as also the Pont aux Doubles, the Petit Pont, the Pont au Change, and the Pont Neuf. New, since 1852, are the bridges Napoléon, Solferino, Alma, and Point-du-jour.

But perhaps the greatest increase is shown in the item of lighting. In 1852 the city was lit by 12,494 gas jets and 85 oil lamps; whilst to-day there are 20,781 gas lights and 280 oil lamps. The suburbs formerly had but 2,918 gas lamps; they now have 12,798. In round numbers, therefore, the streets of all Paris are lit every night by means of 33,000 gas lamps. Even more important than light is water, and here we find that much has been done to supply Paris more freely than hitherto. In 1852 the amount of water supplied from various sources in 24 hours was as follows:—

The Arcueil Aqueduct . . . . .	7,750 gallons.
The Canal d'Ourcq . . . . .	815,000 "
The Waterworks and Reservoirs of Chaillot, Gros-Cailou, and Pont Notre-Dame . . . . .	54,000 "
The Artesian well at Grenelle . . . . .	4,950 "

In all 881,400 gallons, which were conducted in 438 miles of piping; but so small was the average diameter of the pipes at that time, that they never supplied more than 620,000 gallons in 24 hours, leaving more than 260,000 gallons undistributed each day. At the present time the network of water-pipes throughout Paris is equal to 857 miles in length. Of these, 419 miles are new, having a diameter varying from 15 inches to 3 feet 7 inches. More than half the new systems have been laid in the suburbs, which were but scantily supplied with water before the annexation. But the supply of water was made to keep pace with the increased facilities for diffusing it, and we accordingly find that whereas fifteen years ago the daily supply was 620,000 gallons, it now is upwards of 4,000,000 gallons, or nearly seven times more. The sources are as follows:—

Arcueil, d'Ourcq, and Grenelle, as before . . . . .	827,400 gallons
The Vanne Aqueduct . . . . .	776,000 "
The Reservoirs of Monceau, Racine, St. Victor, Panthéon, and Vaugirard . . . . .	260,000 "
Those of Ménilmontant, Passy, Belleville, Charonne, and Gentilly . . . . .	1,632,000 "
The New Water-works of Chaillot, Maisons Alfort, Auteuil, Neuilly, and Saint Ouen . . . . .	683,000 "
Total	4,178,400 gallons.

Coming next to the system of Sewerage, we find that in 1852 there were only 66½ miles of sewer, having an average height of 5 feet 10 inches, and a width of 2 feet 7 inches at the vousseir of the arch. Only about 10 miles of the old system have been retained in the new, which represents a total length of 238 miles. The sections of the new sewers vary, of course, according to circumstances, the smallest being 7 ft. 6 in. high and 4 ft. 2 in. wide, and the largest 12 ft. 8 in. high and 13 ft. wide. Of the 228 miles of new sewers laid since 1852, the suburbs have received 105 miles, showing that the abominable system of cesspools in towns is rapidly disappearing in Paris.

Another great nuisance, that of the slaughter-houses, has been much abated by the suppression of those at Montmartre, Roule, and Popincourt. To take the place of these, and also to supply Paris more conveniently with live stock, the Great Cattle Market and slaughter-houses on the Canal d'Ourcq have been built. The entire establishment covers no less than 14 acres, and is connected by a railway with all the main lines of the Empire. The Halles Centrales occupy 1½ acres, and consist of ten pavillons; only six of these existed in 1852, since which period the markets of the Temple, of St. Honoré, and of St. Quentin have been reconstructed, and fourteen smaller ones built in various parts of the Capital.

In 1852 there were 1,077 schools of all descriptions, with 111,150 scholars; in 1868 there were 1,642 schools, with 174,620 scholars. The hospitals of Paris in the former year held 6,743 beds, whilst at the latter date there was accommodation for 7,820 indoor patients; 684,160 gratuitous consultations were given at these hospitals in 1867. Referring to the activity displayed in ecclesiastical architecture since 1852, we find that the churches of Sainte Clotilde

and Saint Vincent de Paul in the City, and those of St. John the Baptist at Belleville, St. Bernard at La Chapelle, Notre Dame de Clignancourt at Montmartre, and Notre Dame de la Gare at Ivry were finished; that the Churches of the Trinity and of St. Augustin were begun and completed; and that those of St. Ambrose, St. Joseph, Notre Dame de la Croix (at Ménilmontant), Notre Dame des Champs, St. Pierre de Montrouge, and St. Francis Xavier are now in course of erection. Of non-Roman Catholic places of worship, the Protestant churches of the Holy Ghost and of the Resurrection (the latter at Grenelle) have been built, and the synagogues in the Rues de la Victoire and des Tournelles are in progress. The Rectory houses of the parishes of St. Sulpice, St. Thomas Aquinas, St. Francis Xavier, and St. Peter of Gros-Cailou have been purchased, and those of the Trinity, St. Germain l'Auxerrois, St. Leu, St. Vincent de Paul, St. Nicholas du Chardonnet, and St. Bernard, as also the Consistory Court of the Oratory, have been erected. Besides the completion and erection of the churches above named, many others, too numerous to mention here, have been enlarged, restored, and redecored: amongst the number are the Cathedral, the Sainte Chapelle, St. Étienne du Mont, St. Leu, St. Germain l'Auxerrois, and St. Laurent.

Coming, lastly, to municipal works now in progress, the following list will give the reader some idea of the activity prevailing at Paris at the present time:—The completion of the Opera House, the reconstruction of the Hôtel Dieu, the continuation of the Rue Réaumur, the creation of the Boulevard de Rennes, together with the Bridge at the end of it, the drainage of the Valley of the Vanne, the new park of Montsouris, the continuation of the Boulevard St. Germain, and the completion of the Avenue Napoléon.

OPENING OF THE SUEZ CANAL.

THERE is a venerable French proverb which it is necessary to erase from the Dictionary. It is '*Il faut qu'une porte soit ouverte ou fermée.*' That was all very well for men who thought it necessary to take one of two courses. We have learned better now-a-days. We find that a gate may be at the same time open and closed; and what already lends importance to the discovery of the fact is that it applies to no less colossal a portal than the Gate of India.

It is, indeed, difficult for plain-dealing Englishmen to understand the actual position of this important gate. The Chevalier de Lesseps has been labouring at its portals for fourteen years. What he and his associates have spent, and have yet to spend, on the task, we are not in a position exactly to state. At the present moment 8,000,000 sterling is said to have been laid out, and the current expenditure is rated at 200,000 per month. Some enquiry reached our ears not long since after persons desirous to take shares, or to contribute, in some very remunerative manner to themselves, to the supply of further capital.

For the benefit of such long-headed investors it was announced that this famous canal was to be opened in October next. It would be ready to open long before that time, but, not to do things in a hurry—say October. While we were congratulating ourselves and the world at large on this cheering prospect, a more startling announcement was flashed through the Mediterranean cable. The promise had become a fact. A French ship of war had sailed, or steamed, through the Isthmus.

Almost at the same time with this announcement that the gate of India was actually open, the slower machinery of the post brought to London a more detailed communication, which certainly describes it as shut. The spirited owner of the Rob Roy canoe had just passed a fortnight on the salt-water canal, the fresh-water canal, and the two lakes Menzaleh and Timsah. Unaware of the discrepancy between his own picturesque description of what he saw, and the more brilliant colouring of the French telegrams, he spoke, as regarding a distant period, of what is intended to be the case, 'when the passage from the Mediterranean to the Red Sea is open to the world;' and he yet more provokingly adds, 'at this, the Red Sea end, the works of the canal seem very far behind.' The gate, then, is open to the Rob Roy, and to vessels of similar tonnage; but when it will be in a state to convey vessels drawing the 26 feet of water which it promises to hold, is another and a very different question.

We are not aware that a section of the Suez Canal is open to inspection in this country. The directors of the canal have published a statement of the work done, and remaining to be done, at the close of October, 1868; and English travellers have from time to time given their impressions as to the magnitude of the work. The 100 miles roughly stated by the owner of the Rob Roy, is more correctly given as 90 miles, some half of which distance is to be traversed by the canal itself, while the remainder passes through certain lagoons, lakes, or low-lying marshy grounds, known as Lake Menzaleh, Lake Ballah, Lake Timsah, and the Bitter Lakes. In the 11 miles between the first two of these lakes the depth of cutting to the water level or surface of the canal is from 15 to 30 feet. In the 11 miles intervening between Lake Ballah and Lake Timsah the depth of cutting is stated at from 4 to 60 feet to the same level. For 8 miles from Lake Timsah to the Bitter Lakes the depth is again stated at from 4 to 36 feet. For the 12½ miles from the Bitter Lakes to Suez the cutting is nearly of the same depth as the last. This estimate gives 42½ miles of canal proper, the width of which at top is to be 112 yards, and the depth 26 feet; a section the contents of which have to be added to those of the four previously-described excavations in order to arrive at the cubic quantity of cutting required for the completed canal.

The depth of Lake Menzaleh, 20 miles across, was originally from 1 to 10 feet. The other lakes were not expected to require much deepening, as the Bitter Lakes, although dried up by evaporation, are said to be on a sufficiently low level to admit of the access of the requisite depth of water.

In October, 1867, when the above particulars were sent to this country,



it was stated by the correspondent of the *Standard* that he had been informed by the engineers of the canal that about ONE-THIRD of the total earth work had been excavated. The remaining two-thirds were expected to be completed in two years, or by October, 1869. Regarding the enterprise, therefore, from the most favourable point of view, it is evident that the statement of the passage of a ship of war through the communication, in its present condition, cannot be intended to afford any reliable indication of the actual state of the works.

The report of the directors, however, gives a different account from that of the English tourists. Those persons who have any practical acquaintance with the systematic organisation of the French Engineering service, will feel no doubt that the returns published by the Directors are based on minute and careful measurements. On the other hand, the actual quantity of excavation performed by dredging machines must be pretty much a matter of approximation, as no means exist of readily checking the progress estimates by an actual admeasurement of the completed cutting.

The directors state the contents of the total excavations of the canal at 74,000,000 metres (or 96,000,000 of cubic yards). Of this total, 49,000,000 metres are stated to have been excavated by the end of October, 1868, the present monthly rate of progress being taken at 2,000,000 of metres. At the rate of the monthly outlay of 200,000*l.*, ten metres will thus cost a pound sterling, rating the entire cost at per cubic metre of excavation. If the sum of 8,000,000*l.* has actually been expended, the 49,000,000 of metres already said to be excavated have cost a higher price. At the current rate, 2,500,000*l.* sterling will require to be expended, which fits pretty closely with the present rate of progress, if continued for another twelvemonth.

That the enterprise, the patient skill, and the original genius, of the engineers of this famous waterway are of the highest order, there is no room to doubt. The discrepancy between the ugly cubic quantities, and the flourishing accounts of water transit, is explicable from a description of the method employed in the formation of the canal. The fresh-water canal—a noble and permanently beneficial work—was in the first instance constructed to afford supplies to the numerous workmen and to facilitate the progress of the larger undertaking. So soon as it was practicable to turn a body of water on the site of the intended through route, dredging vessels were employed to deepen the channel at first superficially opened. Thus, while the ordinary appliances of the engineer—rails, waggons, and locomotive engines—as well as powerful cranes and elevators designed for the express work, were crowded into the cuttings above the maritime level, the excavation of the canal proper has been chiefly effected by the process of dredging. Between obtaining, in this manner, a sufficient depth for the passage of the *Rob Roy*, of the barges used for the conveyance of the excavated sand, or even of a 'ship of war' emptied of stores and supported so as to draw but a few feet of water, and the completion of the canal to its navigable depth of 26 feet, there is a difference, to arrive at the amount of which we are unfortunately left to the resources of the imagination.

It is possible that the Suez Canal has not been dispassionately estimated in this country. The design was one of a magnificence befitting the power of the most illustrious sovereigns of Egypt. To this country, the opening of such a gate to our Indian possessions was a matter of the deepest interest and of the utmost importance. But Englishmen have instinctively felt that the scheme was not one that came within the ordinary conditions of commercial enterprise. Politically most desirable, such a work threatens to be an economical failure. While, then, we should have rejoiced in seeing the Mohammedan rulers of Egypt or of Turkey bending their energies to the accomplishment of this royal task, we have felt a not unnatural repugnance to the idea of a belt of French territory being stretched from Port Said to Suez; even if, some day, on that belt, should be opened, and kept open, an actually navigable canal. So we took possession of a port of observation at the further end (only landing our cannon, it is said, at the moment that a French captain was under orders to anticipate our appropriation of the spot), and since now, whoever may open, we can shut at will the proposed waterway, we have looked on with a patience not, we fear, devoid of ill-nature.

It is undoubted that if this canal be ever made, and kept in a *bona fide* navigable state, no nation can derive so much benefit from the fact as ourselves. It is further certain that, in such case, it will monopolise our means of communication with India, China, Japan, and, to some extent, with Australia. It is also clear that, in the event of a war with France, an attempt would be made to shut this gate in our face. But, on the one hand, it would seem to be only the narrowest and most pettifogging spirit of national jealousy, or indeed of national weakness, that should lead us to oppose the construction of a great highway for the marine commerce of the world, from the fear of this single contingency. On the other hand, should such a European calamity as war between Great Britain and France actually befall, the position of the forces of the latter country in Egypt would not be an unmixt strategical advantage. We should have to fight for the canal as we have had to fight in Egypt before; and it is more than probable that, if fight we must, we could not select an arena more favourable to ourselves. France must be paramount in the Mediterranean before she can shut out England from Egypt, or from the route to India through Egypt; and that mastery of the Mediterranean will not be secured by either the vast commercial growth of Marseilles, or the military and naval development of Toulon. It will not be determined by the presence of the French flag in Algeria, or behind the parapets of Civita Vecchia. It can be secured only by such a reversal of the traditions and of the national characteristics of the last eight centuries as should enable the military and sea-hating French to beat the British sailors on their own element, and to transfer the rule of the waves to the occupant of the Tuileries. Should that change ever take place, it will matter very little to us whether the Isthmus of Suez be pierced or no. With the English flag predominant at sea, this great canal can always be opened to our commerce. With the Mediterranean a French lake, no English commerce would reach Port Said from Gibraltar, or would venture to tempt the dangers of the Red Sea.

## HOMERIC ARCHITECTURE.

It is hardly necessary to say, before we glance at some of the allusions made by Homer to the subject of Building, that his works have a certain historical value. Homer in our days is not only accepted as an historian, but is ranked high amongst them. 'He alone,' says Mr. Gladstone, 'while producing an unsurpassed work of the imagination, is also the greatest chronicler that ever lived, and presents to us, from his own single hand, a representation of life, manners, history—of morals, theology, and politics—so vivid and comprehensive, that it may be hard to say whether any of the more refined ages of Greece and Rome, with their clouds of authors and their multiplied forms of historical record, are either more faithfully or more completely conveyed to us. . . . The main question is not whether he has correctly recorded a certain series of transactions, but whether he has truly and faithfully represented manners and characters, feelings and tastes, races and countries, principles and institutions. Here lies the pith of history: these it has for its soul, and fact for its body.' We may not give credit to such matters as the politics of Olympus, or the pedigree of King Priam; but as the greater part of the poems must have been the result of observation, we may rely on his descriptions with as much confidence as if they were found in the volumes of professed historians.

If Pope's translation, which still continues to be the most popular, is taken as authority, it would seem that Architecture had arrived at an advanced stage of its progress in Homer's day. We read not only of temples and palaces, but also of spires, lofty towers, haughty towers, as well as awful domes, brazen domes, princely domes, and Palladian domes. Pope was an amateur architect, but his little knowledge was only dangerous, as it assisted him in unfaithfully interpreting Homer. He wished to give an eighteenth century air to the heroes, and took care that the architectural back-ground should be in keeping. Some of the succeeding translators, while carefully avoiding his errors of other kinds, follow him in this, and with the primitive manners give us Pope's architecture rather than Homer's. That the style of building in Homer's day must have been of a different character and such as might be expected in such a time, may, we think, be inferred from the condition of society that is represented in the poems.

One of the most striking characteristics of both poems, but especially of the *Iliad*, is the extent to which not only the battles and war scenes, but the other events of public and private life, occur out of doors. The Trojan fathers, although many of them are old men, meet at night in council outside Priam's house; the warriors sleep frequently outside the tents; councils are held out of doors; and even scenes that might be considered of a domestic nature, like the parting of Hector and Andromache. In the shield of Achilles, which is a miniature representation of the world, there is nothing exhibited but scenes of out of doors life. This brings out by contrast the effeminacy of Paris when he is found so often within the palace; and to a Greek, the rage of Achilles was perhaps more strongly indicated by his self-inflicted imprisonment than by any other circumstance. Nor is this to be regarded as a peculiar theory of art that Homer might have held, but is a faithful reflection of one phase of the Greek character. It was their nature to endeavour to spend as much of life as possible in the open air, and it was there that business of all kinds, from buying and selling to teaching philosophy, was carried on, to an extent that now-a-days it is hard to realise. Consequently they never paid much attention to domestic architecture. At the time when Athens was attracting people from many parts in spite of the difficulties of the journey, the houses were small and mean, the streets crooked and narrow, with upper storeys projecting over them, and staircases and doors that opened outwards, obstructing the passage, so that the stranger might well doubt on the sudden view if really he saw Athens. If it had not been for the influence of religion which caused those temples to be erected on which the Greek genius was concentrated, it is not improbable that we should have had no evidence of their ability in architecture, and at the time Homer lived their religion had not yet reached that period when temples were considered necessary. It is not then too much to suppose that, considering the unsettled state of society and the character of the people, buildings that would merely answer necessary purposes, however simple or unadorned they might be, would satisfy all the desires of the Greeks. We will now try and see how far any other kind was attainable.

In questions of the possibility of any particular class of structure being erected, there are three elements to be considered—materials, labour, and tools—as it is on their qualities depends the character of the resulting building. Greece was, of course, as rich in materials for building in the heroic times as afterwards; and, as there was always some extent of commerce, it was possible even then to obtain them from other countries if they were required. They had abundance of stone and marble, many kinds of timber, some in sizes large enough to be used as immense piles, copper to plate walls, or for other decorations. No mention seems to be made of mortar, and from its importance, and how different the character of construction must be according as it is absent or present, it is worth inquiring if mortar was known to the Greeks in Homer's day. If we judge by what still remains of the walls of the towns, it certainly was not. Whether the masonry consists of blocks as they left the quarry, with the interstices filled with spawls, or of stones dressed so as to fit with some accuracy, it is always dry. On reading the poems, it is not easy to



credit the possibility of the works that are constructed as well as demolished being executed in the time specified unless the masonry was laid without mortar. The accuracy of Homer's similes is well established: when he wishes to describe the Myrmidons as standing shoulder to shoulder, he likens them to stones close jointed laid by a mason, which is appropriate enough. Now, if he means stones set in mortar, the likeness certainly would not exist; and yet this is the meaning which poor Cowper, who is one of the most painstaking of translators, gives the passage:—

So them he roused, and they, their leader's voice  
Hearing late, to closest order drew.  
As when an architect some palace wall  
With shapely stones erects, cementing close  
A barrier against all the winds of heav'n,  
So wedged the helmets and boss'd bucklers stood:  
Shield, helmet, man, press'd helmet, man, and shield,  
And ev'ry bright-arm'd warrior's bushy crest  
Its fellow swept, so dense was their array.

It was the popular belief in Homer's day that the walls of many of the cities were erected by the gods themselves, Troy, for instance, being supposed to have Neptune as the builder:—

Up leaps now the Ocean god,  
Riving ribbed Earth asunder  
With his wondrous trident rod,  
And the granite falls in thunder.  
High he heaps the mighty blocks  
As an infant swings a ball;  
Help'd by active Hermes, rocks  
Heap'd on rocks construct the wall.

LYTTON'S *Schiller*.

In an age when childlike faith in miracles abounded, this might have appeared probable, if the walls were, like those of Tiryns, made up of stones from nine to fourteen feet long and merely piled on each other; but the most credulous of believers could hardly withstand the absurdity of Mercury mixing and carrying mortar, and Neptune patiently spreading it over course after course. We think, then, it may be concluded that the builders in the heroic days were ignorant of the use of mortar, and this is in itself almost sufficient to determine the character of the work it was consequently possible to construct.

It is a law that is inevitable, that success in anything can be gained in proportion to our concentration on it, and consequently labour is every day becoming more divided. As we look backward, men are capable of performing a greater variety of operations, until, in an early age like Homer's, the division of labour is seldom carried out, except between the different members of a family. Each individual has to rely on himself for food, clothing, dwelling, and arms; and from this the chiefs are hardly exempted: hence we read that Ulysses could plough a field, construct a raft, and carve a bed-post, and even the well-frizzled Paris was able to assist in building. But in such a condition of society, as the average amount of knowledge will be only of the simplest rudiments of a craft, it cannot be expected that much progress will be made in any art, except perhaps agriculture. As ability is valued in proportion to its scarcity, we may infer how little that average was in one calling, from the honours that were paid in the Homeric days to an ordinary carpenter. He was not only ranked with the soothsayer, bard, and leech, but he could transmit his honours. With such absence of even ordinary handicraftsmen, it is easy to perceive that the general style of building would hardly have harmonised with one of Mr. Pope's Palladian domes.

Even the most dexterous workman cannot accomplish much unless he is aided with tools of various kinds. According to Gillies (and the statement is endorsed by Mr. Grote), the only tools mentioned by Homer are the hatchet, plane, wimble, and level; the saw, square, and compass being unknown.

In attempting to describe the circumstances that must have prevented the development of architecture in Homer's time, we must not be understood as maintaining the entire absence of art. The Greeks were at all times an exceptional people; and although they had some things in common, they were different as a whole from the Bulgarian peasantry or the North American Indians of the present day. That subtle feeling for the beautiful, which afterwards amounted almost to a new sense, had even then some influence; and we see its effects in the Gate of the Lions at Mycenæ, and in the columns in semi-relief sculptured on the walls that are found occasionally throughout the country, as well as in the allusions to polished marble as a decoration so often met with in the Iliad. It is held that in the heroic times they had no eye for colour; but when we find that a green marble was used for the Lions' Gate, and for the half columns of the Treasury in the neighbourhood, which had to be brought from a distance, and that the entrance to the latter building was decorated with green, red, and white stone, it is hard to believe that it was merely the result of accident. Art would have been at the time appreciated; but we think that owing to the scarcity of artists and other causes, it was seldom found, unless Müller's maxim is true—that the building fitted to answer its end would turn out beautiful though beauty had not been at first intended.

(To be continued.)

## OUR RAMBLER IN BELGRAVIA.

ONE of the least satisfactory points in a survey of modern London is the architecture of its private houses. Whatever may be the shortcomings of its public buildings and business premises, the circumstances under which they are erected and the nature of their occupation preserve them,

for the most part, from the solemn monotony which reigns over the purely residential districts. The perfect contentment with which large classes—even the highest—have yielded themselves to a set routine of duties and pleasures, and to the supply of common wants in common ways, has offered strong inducements to uniformity of design, and has tended to make the more decorative building of this generation as tiresome to the eye as the bald brick elevations that are now going out of date. Any attempt, therefore, to deal with the buildings on a large estate upon a comprehensive system with due regard to variety of arrangement and of outline, and to make for them a careful selection and disposal of materials, should receive our hearty sympathy, and none the less because we may fail entirely to concur in the views which have influenced one or other of the arrangements.

A good ramble is best taken in good company: for that which has led to this paper we are indebted to the visit paid by the Architectural Association on the 30th ult. to the works now going on upon the estate of the Marquis of Westminster; and we are, in common with that body, particularly indebted to Mr. Cundy, his Lordship's architect, who most cordially received his visitors and conducted them over the various buildings.

The works visited form part of an extensive scheme for the renewal and rearrangement of the buildings and thoroughfares on the portion of the Grosvenor estate which lies between the Victoria Station and Hyde Park Corner. Starting from the latter point along the line of Grosvenor Place, we first pass the end of Grosvenor Crescent, which is now being completed, and forms a fine approach to Belgrave Square. In Grosvenor Place is the mansion now being built for Earl Grosvenor; a block of new mansions ready for occupation next succeeds; and, after passing a row of old houses which will be removed on the expiration of the present leases, we arrive at a more open space, containing several groups of mansions arranged on both sides of the thoroughfare, and small enclosed and planted plots, by virtue of which this part of the estate becomes entitled to the name of Grosvenor Gardens.

Earl Grosvenor's mansion, which was first inspected, is a picturesque composition in the modern French version of the Italian style. The exteriors are in Portland stone backed with brick-work built in cement; the design being enriched with columns and panels of polished Peterhead granite, red Mansfield stone, and terra cotta. The foundations of this and some of the neighbouring houses were carried down to a depth of sixty feet below the level of Grosvenor Place. The basement is occupied by the domestic offices and cellarage on the usual scale. On the ground floor the entrance-hall is on the longest or southern face, the staircase being immediately to the rear of it, Lord Grosvenor's room and the Secretary's room being on the right, facing Grosvenor Place, and the dining-room at the extreme left or western end of the building. On the first floor is a fine suite of reception rooms, comprising a ball-room, saloon, boudoir, and the family bedrooms, and further accommodation of this class is provided in three or four other storeys, as well as in the roof of a large angle tower which forms a bold feature in the view of the mansion. The Dennett arch has been used throughout the ground-floor and passages, generally in spans of eight or nine feet, carried on rolled iron girders, and having a thickness of about four inches at the crown. In respect of strength this contrivance is highly approved by the architect, who has severely tested it. We were told of heavy loads which had been placed upon it without producing fracture, as well as of its having been intentionally broken through by means of heavy weights dropped from the upper floors; and the extreme toughness which enables it to endure this last test without the fracture extending beyond the portion actually struck is certainly remarkable. Comparing the Dennett arch with ordinary brick arches in point of cost, the former seems to have the advantage to the extent of about 10 per cent. of the cost of the latter. The difference is, however, so slight that the builder of other houses on the estate found no inducement to adopt the new system. Its lightness and strength, and the satisfactory appearance of its soffit, will, no doubt, render its adoption in many cases desirable, although, like all other inventions which demand extreme care in the selection and treatment of their component materials, this arch can only be safely used under strict supervision. Brick rubbish and gypsum, which are the chief materials employed, do not seem well adapted to resist the percolation of water, and from ordinary observation of the effects of fire—even on 'fire-proof' constructions—we shall not expect that one of these floors would prove a very serious obstacle to its progress. Fire-proof construction has not, however, entered into the general scheme of these buildings.

The new houses in Grosvenor Crescent are being built by Mr. Waller on his own account, from the design and subject to the general approval of the architect to the estate. When completed they are expected to realise from 17,000*l.* to 20,000*l.* The construction is similar to that used in Lord Grosvenor's mansion, except that cast iron with brick arches is adopted for the fireproof flooring, between the basement and ground floor storeys. The plan adopted (which was kindly explained by Mr. Waller) is, in the first place, the ordinary arrangement of hall and staircase on one side of the ground plot, with two rooms communicating by means of folding doors. The front room is intended for a morning-room; that in the rear, which is longer, will be the dining-room, and behind it is a square open court. Beyond the court is placed the billiard-room, which extends across the rear of the premises, and has been kept one storey only in height with the view of avoiding obstruction to the light of the dining-room. On the first floor is the drawing-room suite, which, together with all the other rooms, appears to be of ample height, the five storeys which form the elevation rising considerably above those of the older houses adjoining.

The blocks of houses extending along Grosvenor Place and Grosvenor Gardens group well with those already described, and present little variety in arrangement. Many have been specially built by Messrs. Waller and others for their present owners; the remainder are being sold at prices ranging from 20,000*l.* to 27,000*l.* In those built by Messrs. Holland and Hannen we noticed the use in such parts as doors and shutters of richly inlaid wood work, tulip wood, walnut, and ebony being very well combined. This work is imported from Vienna; the ceilings also are by foreign workmen, probably French.

A visit paid on another occasion to the large building near the Victoria Station, known as the Belgrave Mansions, enables us to complete our notice of the new works of this neighbourhood. This undertaking is of a kind which, though not quite novel in London, may still be called experimental. It resembles in most respects an hotel of the first class, except that the rooms are let unfurnished on lease, in suites or single rooms as may be required. Each suite is complete in itself for all purposes of private occupation; the cooking arrangements and general service of the establishment being kept distinct and under the control of a manager. Entering at the centre of the front towards Grosvenor Gardens, we find the staircase immediately in rear of the straight corridor which runs through the length of the building. A hydraulic lift works in the centre of the staircase, and is doubtless appreciated by the tenants of the upper storeys. Each storey has its own still-room and attendants. In the basement is a very complete arrangement of kitchens and offices, with lifts to the various still-rooms. The plan also includes coffee and smoking-rooms, and the ground-floor is, after the usual system with hotels of this kind, devoted to shops, which do not hitherto seem to have let very freely. The building is constructed with fire-proof floors, on Fox and Barrett's system. The whole design and arrangement are due to Mr. Cundy, who was the architect employed by the Hotel Company. We may add that the internal finishing of the building, so far as we could observe, was of an exceedingly pleasing character.

We have preferred to reserve our remarks upon the general design of these groups of buildings until we had dealt with matters of detail, for they are to be judged as one grand scheme, or perhaps more correctly as parts of a still larger scheme, which is as yet only partially carried out.

As the older architecture of Belgravia has been founded upon Greek, Roman, or Italian models, according to the style which was in vogue at the period when each important addition was made to the estate, so in the buildings under consideration we have a style based on that variation on Italian which obtains in modern Paris. Some, no doubt, would have wished to find the new buildings more completely Parisian in detail; others would prefer them to be more in accordance with classical models; while many, and with greater reason, would prefer that variety of Italian which is associated with the name of Barry, and of which some good examples may be seen in the near neighbourhood of this property. The spirit of thoroughness, however, in which this work is being carried out, as opposed to that which inspired the stucco architecture of the last generation, seems to suggest the selection of a style different from anything habitually imitated in that material; and this being so, it is extremely probable that the manner actually followed is likely to fall in better than any other with the tastes of that class for which these mansions have been built. It is true that the architect could not command the fine soft stone or the class of carving which, in the eyes of many persons, contributes such a charm to Parisian architecture; nor will his works have the advantages of sun and atmosphere, nor the lively surroundings which they would have had in the French capital. It is impossible, at the same time, to deny that the defects here hinted at have been in a great measure counteracted by boldness and picturesqueness of general design, or that in the result a very striking group of buildings has been added to the metropolis, and yet we cannot but think it somewhat to be regretted that, seeing how much had been done to infuse something of national spirit into the design—seeing that the whole plan and arrangement throughout are distinctively English in character, and that the work is associated with one of our oldest English names—some style has not been adopted which, whether native or not, has become in some degree our own.

### CHIMNEY-PIECE OF THE TOWN-HALL OF COURTRAI.

(WITH AN ILLUSTRATION.)

The Chimney-piece of the Town-hall at Courtrai, of which we give an illustration this week, is the richest specimen of Flamboyant Gothic work to be found in Belgium. It dates from the year 1526, and is carved in stone; the figures at the top represent the Virtues and Vices, and the bas-reliefs, dating from the end of the sixteenth century, relate to the municipal and judicial destination of the building, and to events in the early history of the town. The statues on corbels in the centre and on each side of the chimney-piece are those of Charles V. and of the Archduke Albert and Archduchess Isabella.

R. PHÉNÉ SPIERS.

### BUILDING CONTRACTS.

By a LONDON ENGINEER.

AS the 'London Contractor,' in the two articles on this subject that have appeared in the last numbers of this Journal, refers entirely to the practice of architects, it may be thought that an engineer has no right to enter into the question; but as house-builders may undertake work under engineers, and as specifications, contracts, extra works, arbitration clauses, &c., belong to both branches of construction, perhaps, after all, there is no great intrusion in his doing so. It seems that several builders and contractors desire to alter somewhat the general forms of specifications and contract deeds, and the first change suggested is 'that the specification shall include only the detailed description of the work to be done; and that all clauses containing legal powers or liabilities shall be transferred to the contract,' or in other words, that there ought to be a more general employment of lawyers in preparing contract deeds than there is at present. As the form that is usually adopted for general conditions has lasted so long, I confess I do not much wish to see it superseded without reason, and I prefer having as little to do with lawyers as possible. Supposing it is admitted that both parts of the contract deed ought to be separate—what advantage is gained by their being so, or by having as perfect a form for general conditions as one lawyer could draw and another find flaws in? It could not prevent

disputes arising from orders not being given in writing for extra works, or all uncertainty about undefined works, or give a contractor a voice in the appointment of a building surveyor, more than the present form does. But, how far do contractors at present suffer from clauses prepared by the 'un-instructed hands of architects?' According to the London Contractor, 'in a very great number of cases, a description of the work on the one side, and a letter undertaking its execution for a stated sum on the other, is all that is required;' which means that, in a very great number of cases, contractors have no opportunity of showing their patience in suffering. It is the misfortunes, however, that have been latent during all those years of building that are now to be dreaded by the contractor. 'Probably few architects are aware that the builder has absolutely no power at common law of obtaining redress should the architect, through infirmity of temper, &c., refuse to issue his certificate.' Could the architect be ignorant of possessing this terrible power if he ever exercised it, or heard of any one who did? 'Whether a Court of Equity could or would interfere is, in the opinion of an eminent Chancery barrister, extremely doubtful.' Any case that stands in this marvellous position cannot do much harm to anyone. Is it not evident that all this ignorance on the part of Courts of Equity, Chancery barristers, and architects, arises simply from their never having any occasion to need knowledge on the subject? 'Are there many builders who know that in contracts where the payment is to be made on completion, unless there is a provision for suspending the works, they will be compelled to complete the contract, however large, before a debt will have been created, although in the mean time they may have become aware of the insolvency of the employer?' Of course there are not many builders who know that, because they don't require to know it, and because builders are usually paid by instalments; and if the financial revolutions of the last few years have not taught the lesson, I think they may without injury to themselves be allowed to remain in such blissful ignorance. The conclusion which the London Contractor wishes to establish by the foregoing illustrations, and which he thinks 'enforce it,' is 'that all points in contracts having reference to legal questions should be settled by the lawyers, and not the architects.' May I ask the Contractor to define what are not legal questions in case any dispute should arise, or what a lawyer would not meddle with? As soon as a builder signs a specification, or a set of plans, then every sentence in the one or line in the other may become at one time or another a legal question. But surely it is not expected that lawyers are for the future to revise our plans. If it is stated that the mortar shall have two parts sand and one part lime, then the mixing of mortar may become a legal question; but how are our legal friends to settle the matter beforehand? I am afraid that builders and contractors are becoming very much like the conventional farmer, and having no real grievances to endure they are obliged to invent some; and I think it will be allowed that so far it is only imaginary grievances the London Contractor asks us to sympathise with.

The next grievance is this: 'one of the most prominent clauses objected to by contractors is the one referring to extra works.' Why do they object? Because it is too hard on contractors to expect them or their representatives to understand common working drawings, or, as it is stated, 'to insist that the contractor shall know all the details of the work sufficiently to detect at once from a working drawing that it is in excess of the agreement.' Might one suggest a little legal assistance to the contractor in such cases? The great objection is being obliged to exercise the power of asking for orders before extra works are begun. 'The sting of this lies in the words "previous to the execution of the work."' It is not often contractors are obliged to seek the orders; but if they have, where is the difficulty in doing it? Besides, does the Contractor really expect us to believe that it often happens that employers refuse payment of work approved by their architects and 'sanctioned by the employer,' merely because a miserable docket was not given at a particular time? We agree that such practice would be most unjust if it took place, but how often does it? The builders urge that orders for extra works given by the architect after their execution are to be held as valid; but if it is possible to obtain them, why not before the execution, if the builder thinks the architect's certificate is not sufficient?

Do contractors have often to execute works without payment not contemplated by them or by the architect? 'The builders consider that they should not be bound to execute, within their contract price, works not shown on the drawings or mentioned in the specification, but necessary to complete the buildings as intended, unless the same can be fairly and obviously inferred from the drawings and specification.' As 'intended' by whom, if not by the architect? This looks very much like a desire on the part of the builders to get rid of the old-fashioned clause, that whatever is usually found necessary is to be executed, no matter if it is not shown on drawings, or referred to in specification, which is merely intended to cover an oversight that might arise, and for which contingency contractors take care to provide in their prices.

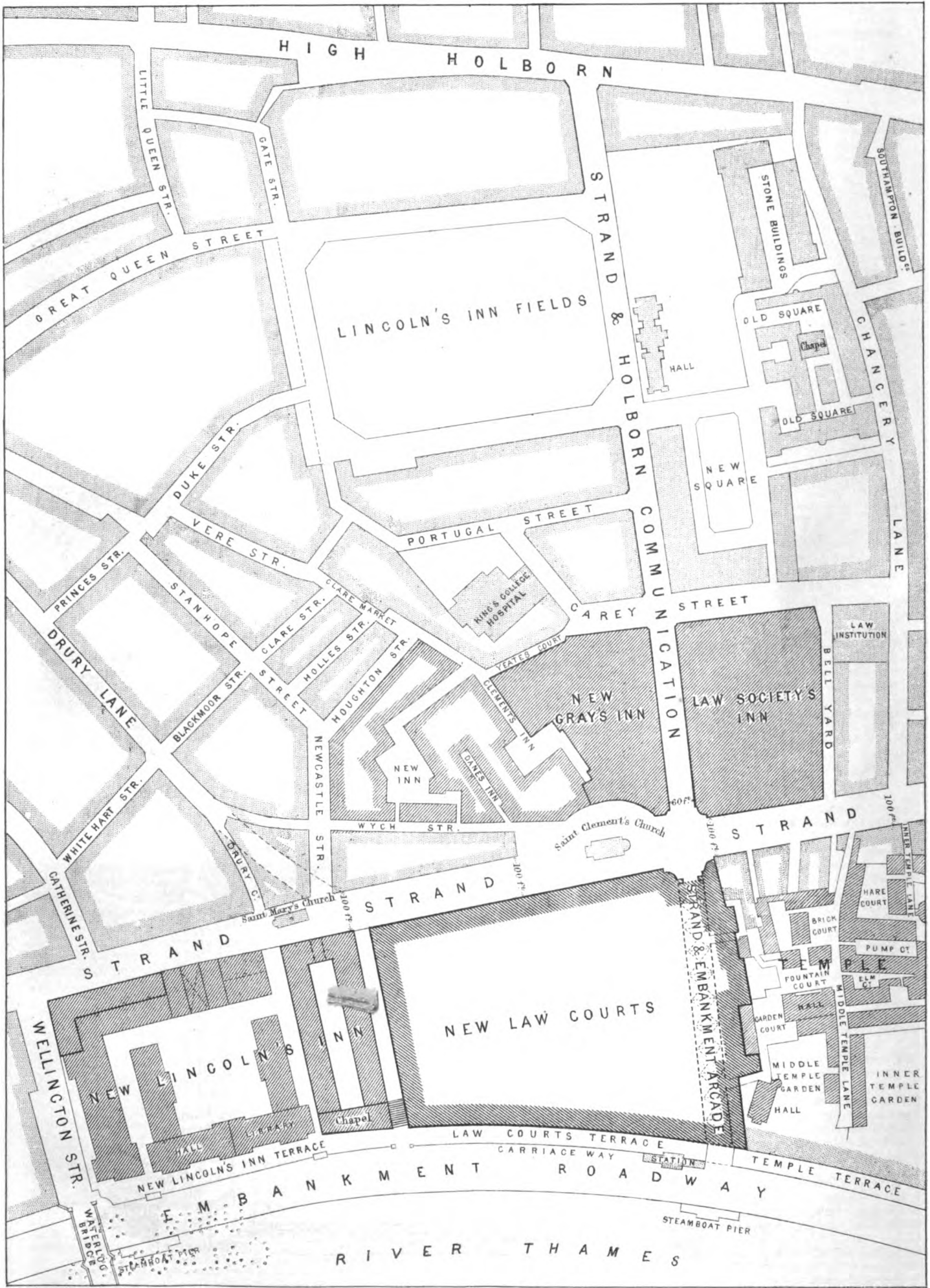
We next come to the appointment of arbitrators by the courts. The London Contractor of course sees manifest advantages in the employment of lawyers in such cases. Why? 'Nine tenths of the builders and nineteen twentieths of the architects are in favour of an architect as an arbitrator;' but on the other hand, and outweighing all the experience of architects and builders, the lawyers are supported by the 'Platonic Dialogues' and the London Contractor. Possibly there are other reasons that might be brought forward, but we are told 'it would be useless to discuss them here,' which is, at the least, not complimentary to us.

'Who should be appointed arbitrator—the architect of the works or an independent one?' I may be showing my ignorance in saying it, but I have never heard of an important case where the architect who designed or superintended the work was appointed as arbitrator by a judge in chambers or out of chambers. Nor does the 'London Contractor,' I think, maintain that there has been; for if I understand the remainder of this part of his communication, he shifts to the question of the architect being considered as arbitrator between the employer and the builder in the generality of cases that never enter courts, and, I fancy, objects to the venerable clause that the architect is to decide on all matters arising out of the contract, and that his decision is to be final and binding. Many architects, we are

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CALIFORNIA

# NEW LAW COURTS

The Architect, Feb 13<sup>th</sup> 1869.





J Emslie & Sons, lith.

Printed by W W Spangman in St Pauls Churchyard, London, E.C.

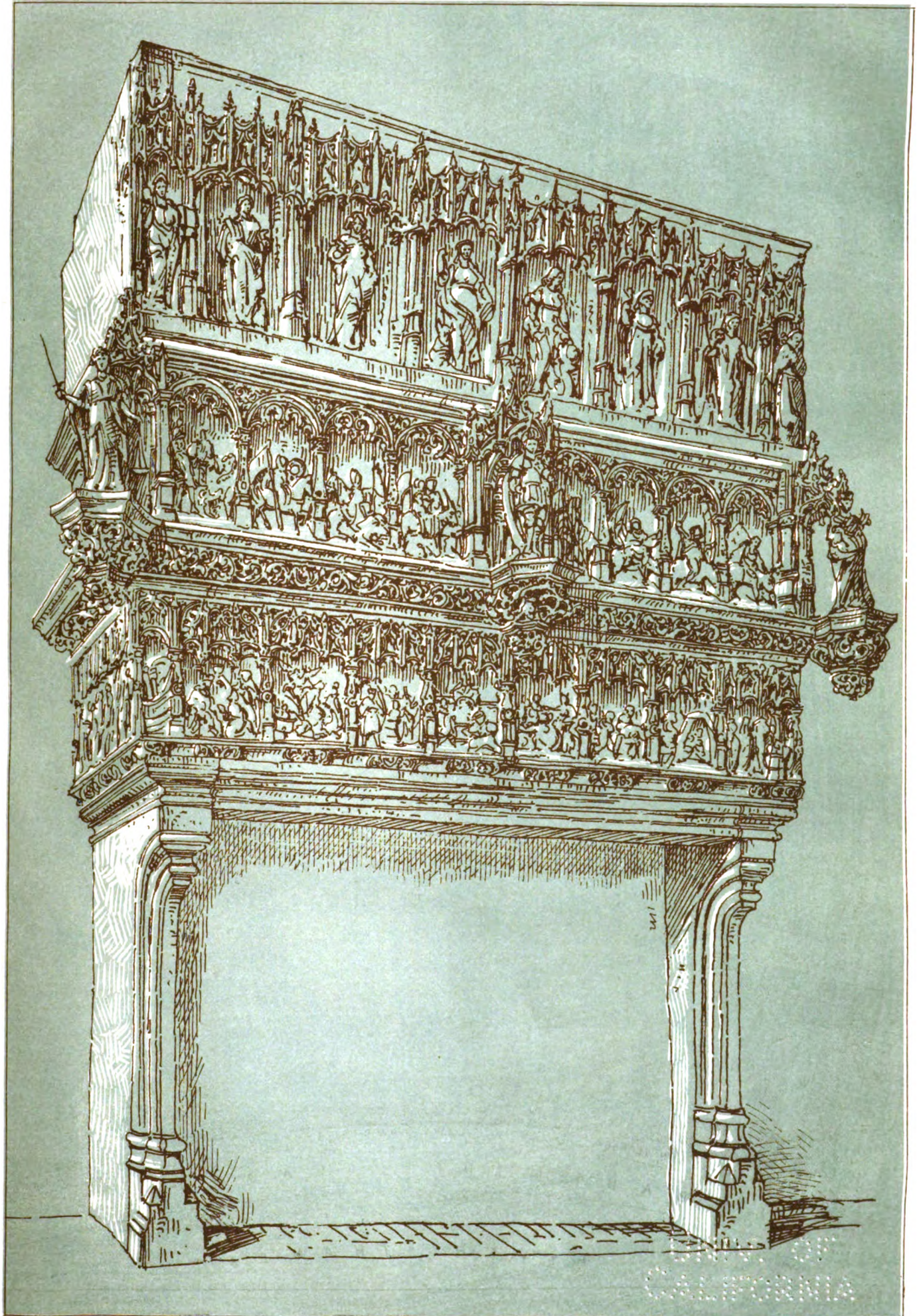
## THAMES EMBANKMENT SITE - SIR CHARLES TREVELYAN'S PLAN.

New Law Courts 

Inns of Court, existing and proposed 

New Buildings 





W. Spiers del.

Printed by W. W. Spearman & Co. London, E.C.

Chimney piece in Town Hall Courtrai · Belgium.

DRAWN BY R. PHENE SPIERS

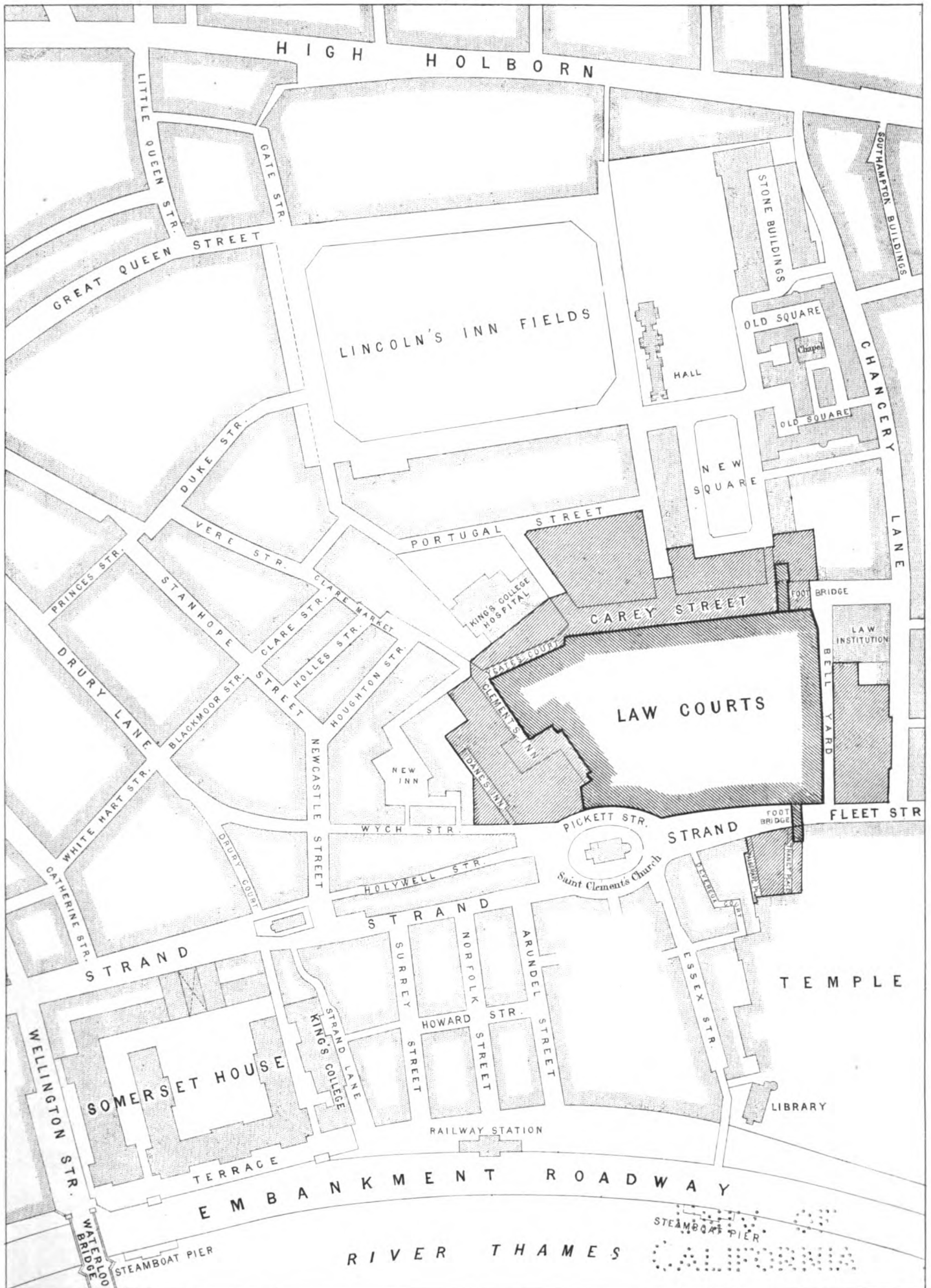
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70. 1000  
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# NEW LAW COURTS

The Architect, Feb 13<sup>th</sup> 1869.

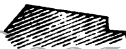


J. Emshie & Sons, lith.

Designed by W. W. Spanglow & Co. London, E.C.

## CAREY STREET SITE - COMMISSIONERS' PLAN.

Land already purchased 

Additional land recommended to be purchased 

70 1/2  
ANATOMICAL



told, desire to retain sole jurisdiction over the quality of the materials and work, and the interpretation of the drawings and the final certificate. Do not all architects desire this, and is there anything wrong in doing so? 'With regard to the right interpretation of the drawings and specification'—says the 'London Contractor'—'one would as readily expect an un-biased opinion from an architect as to these productions of his as from a father as to the beauty of his children, or an author as to the merits of his book.' I may be again displaying my ignorance, but I think that the questions in disputed contracts do not usually turn on points of æsthetics, but have to do with much less sublime things, such as quantities of materials and day-work, and have consequently not much analogy to beauty and literary merit. And as a father might be allowed to be competent to measure his child's height, or an author to count the pages of his book, and even sometimes say whether it was well or badly printed or bound; the 'uninstructed hands' of the architect, if not equal to the task of framing clauses to indicate how the work was to be done, might surely be allowed to be able to point out differences between a house as he designed it and as it was erected.

With regard to the important question of the builder having a voice in the selection of the surveyor, nothing can be fairer than that he should, and there can hardly be any obstacle to making it an universal rule. It might be possible, too, for the Institute and the Builders' Society between them to frame 'a set of general conditions,' although we think it could not differ much from that in general use; and in these things we are glad to agree with the London Contractor. But we must be pardoned if we think that all the dangers that are likely to arise to contractors from the architect's 'infirmity of temper,' 'collusion with his client,' 'arbitrary courses,' 'sitting in judgment on his own cause,' and 'deciding in his own favour,' exist in his own and his friends' imagination, excited, perhaps, with over much study of the Platonic Dialogues. H.

### THE FEMALE ARTISTS' EXHIBITION.

ON what possible principle of segregation the Society of ladies, whose works form the subject of this notice, first came to be established—whether it arose at the instigation of some ardent advocate of woman's rights, or from a conviction that the pictorial skill of our fair limners was not fairly recognised at ordinary exhibitions, we cannot say, and possibly it might be ungracious to inquire. It is sufficient to know that the Society exists, and, thanks to the management of its working members, has been steadily gaining ground in public estimation, and in the standard of excellence which characterises its annual display.

The present exhibition in Conduit Street is on the whole a very successful one; and though we cannot help thinking that the Hanging Committee would have exercised a sound discretion in excluding some works which shall be nameless, but which it would have been really charitable to reject, there is on the other hand matter for sincere congratulation in the fact that the catalogue this year includes the names of Mrs. Ward, Miss Starr, Miss Spartali, Mrs. Marrable, Miss Helen Thorneycroft, and the Misses Rayner.

The first-mentioned lady, whose name has been for a two-fold reason long associated with art, sends a couple of slight but tenderly handled sketches of 'Sleeping Children' (269 and 270), which, with her oil picture, 'The Young Sailor' (427), suggest, if they do not realise, her artistic power. Miss Starr's life-size 'Study' (440) is a broadly painted head, full of vigorous drawing and truth in colour—qualities amply compensating for that apparent want of refinement in execution which is sure to become exaggerated alongside of works whose chief characteristic is an effeminate delicacy of hue and touch. The other portrait (473) is on a smaller scale, low, but well pitched in tone and colour, and not unworthy of the hand which has already won the first academical honours awarded to a lady-artist in this country. 'Procne in Search of Philomela' (131) is the somewhat pedantic title given by Miss Spartali to a refined and artistic figure-piece belonging to that ideal school of modern art for which she has long declared. Her work is always so excellent in general aim, that it is not a little difficult to say whether the absence of modelling and apparent meanness of execution noticeable here and there in this and similar studies are due to want of skill in manipulation, or to an absolute attempt towards the realisation of certain qualities of tone with which this speciality of style is accredited.

Miss Brodie sends a modest but clever little landscape, 'Durweston Bridge, near Blandford, Dorset' (45), which, however, would be improved by somewhat more forcible treatment in the sky. The two companion drawings by Miss Frances M. Keys—viz., 'Under the Beech Trees' (49), and 'In the Woods near Cornwood' (59)—are notable examples of the free use of body colour, once so much condemned by the old school of water-colour painters, but now in common vogue. 'A view on the East Lyn' (225), by Miss Lloyd Jones, and 'On Mitcham Common' (228), by Miss F. Kempton, represent the very antipodes of principle in landscape art—the first being an elaborate and very conscientious study, inclining perhaps a trifle too much to prettiness, but on the whole very successful; the second an example of the bold *blottesque* manner which found its best exponent in the moorland sketches of David Cox. Holding a middle position between these two extremes are the 'Studies of Swiss Scenery,' by Mrs. Marrable—no less than sixteen in number—thoroughly unaffected in manner, evincing great judgment in composition, and very skilfully executed. We may especially mention in this interesting series the 'Beruna Fall and Morteratch Glacier near Pontresina, Engadine' (331); a View of the Roseg Glacier (332); and Pont Ota (338), in the same neighbourhood.

The field of the picturesque in architecture is as copiously represented by the Misses Rayner, the elder of whom exhibits twelve views in Chester, remarkable for the master-like expression of detail which they display, and in more than one instance for great strength of scenic effect. The interior of James I.'s bed-room at Knole (210), and a study in Edinburgh, by the same hand, complete this group. It is to be regretted that Miss Rayner adopts such a coarse method of execution. The body-colour in some of these studies might be scraped off in masses with a knife, and it may be questioned whether such a lavish use of this material can be excused even

by so effective a result. Miss Margaret Rayner's Welsh and Scotch studies are interesting examples of her skill, and well worthy of attention. Indeed, if space allowed us, we might enumerate many other works both in the way of landscape and figure-subjects which do credit to the Exhibition and its promoters. We must, however, content ourselves in conclusion with mentioning Miss G. Bower's clever pen and ink sporting sketches, with the character of which readers of *Punch* must now be tolerably familiar, and a very sweet and carefully painted head, 'Barbara' (294), by Miss Helen Thorneycroft, which clearly indicates the influence of a higher aim in art than that which we are generally accustomed to associate with the productions of lady-artists in this country.

### SOCIETIES.

#### Architectural Association.

The usual fortnightly meeting of this Association was held on Friday the 5th inst., William White, Esq., the President, in the chair.

After the reading of the minutes and the election of new members, Mr. R. PHÉNÉ SPIERS rose and said:—You are all aware that since our last meeting we have lost Mr. Arthur Ashpitel, a gentleman who held the highest rank in the profession. He became a member of this Association in 1861, chiefly from the great interest that he felt in the educational question, and it was almost entirely owing to him that that scheme was carried out. He was chairman of the committee, and found the money that was necessary for the printing of papers and other things, and he was one of the examiners throughout. Seeing, then, that he took such a great and lively interest in our welfare, I think it becomes us to place on record the deep regret that we feel at his loss, and that the said resolution be communicated to his brother. (Cheers.)

The CHAIRMAN thought it would be hardly necessary to put the motion formally to the meeting. All present knew the great interest which Mr. Ashpitel had evinced in educational matters, and he was sure that from his unvarying kindness all who had sought him for advice—and they were not a few—would remember him with gratitude.

The motion was agreed to *nem. con.*

A vote of thanks was passed to Earl Grosvenor for his kindness in allowing the members of the Association to view the Grosvenor Mansions now in course of erection, and also to Mr. Cundy, Earl Grosvenor's architect, for the explanations he had afforded them respecting the same.

Mr. R. PHÉNÉ SPIERS was then called upon to read a paper entitled 'Architecture in Belgium.' Mr. Spiers said that having visited Belgium in September last, and finding it to be full of architectural treasures, he had thought, considering that though most easy of access it was somewhat passed over by English students, he should be doing material service by pointing these architectural treasures out, and giving such an account of them as could be squeezed into an evening's lecture. Of the early history of Belgium during the first eight centuries of our era, there is little to occupy our attention. In the ninth century the country became part of the empire of Charlemagne, the influence of whose reign, however, is not apparent in any of the existing monuments, save in some on the river Meuse. He must confess that he had been unable to find any traces of an Oriental style ascribed to those artists whom Charlemagne imported from the East, which, it is affirmed, exists in some of the buildings at Liège and Maestricht. He would allow that features of a peculiar style do exist in these towns and at Cologne, unlike what one generally sees in Europe; but then these features happen to be still more unlike anything to be found in the East, so that he was inclined to ascribe their origin to the inhabitants of the Rhine provinces. Under the successors of Charlemagne the country became divided into a number of small sovereignties more or less identified with the great towns now existing. This subdivision naturally prevented that centralisation of effort which predominated in France during the twelfth and thirteenth centuries; and to this oneness, as well as to the high class of intellect to which the production of these erections was entrusted, we owe that purity of design, power of imagination, and that adherence to true principles of art, which are so perfectly developed in the French cathedrals. The church architecture of Belgium never seems to have attained the qualities of French work; and, with the exception of the cathedrals of Tournai and Maestricht, we find no churches of any large size which are in any way to be compared with those of the same period in France or England before the fourteenth century, and then the decadence of the style was too far advanced to hope for any great excellence except in point of style. It was natural, however, to expect that this subdivision of the country into a number of principalities would induce each to emulate the other in the production of fine buildings, and consequently we find, from the thirteenth century—when the activity of the people and their immense commerce gave them the necessary wealth—down to our own age, a series of the most magnificent municipal buildings in Europe. The institution of self-government in the chief towns called for the production of municipal and trade buildings to an extent not required in any other country; and although, as might be expected in an essentially commercial country, these buildings are not remarkable for their purity of style, they are still the best examples of the application of the principles of Gothic art to the wants and requirements of their age. In the beginning of the sixteenth century Belgium became subject to Spain, and many of the buildings of this period seem to suggest the influence of this latter country, though, of course, more is to be ascribed to the constant commercial intercourse with them as well as with other countries. This, in fact, is found in all those towns which border along the Baltic. This, however, does not apply to the towns on the Meuse in the south of Belgium, which seem rather to have been influenced by the early architecture of Cologne and the Rhine provinces. The architectural styles of Belgium may be divided into five periods, viz.: the Romanesque, the Transition, and First, Second, and Third Pointed. The Romanesque, which existed till the middle of the twelfth century, is in many respects very different from that which we

find in Normandy and England. There is almost an entire absence of that description of decoration known in England as the zigzag or chevron moulding, the Beakhead, Billet, and others which abound in all Norman buildings. The cornices to the window heads, which are circular and have as many as two or three orders, consist of simple mouldings, and the exterior walls are decorated with a series of flat blank arcadings with very slight projection, similar to those found in Lombard churches. To the Transition period, which lasted from the middle of the twelfth to the first quarter of the thirteenth century, belong some of the most interesting buildings, which deserve most careful study. This period seems to have lasted a considerable time in consequence of the hesitation that showed itself to the acceptance of the pointed arch, and we find both this and the round arch existing in juxtaposition in the same buildings. The ornament of this period is more like that found in German round arched architecture, or the earlier parts of French thirteenth, or more correctly speaking, twelfth century work. Whilst the capitals have square abaci in the First Pointed, they are octagonal and the caps have one or two rows of leaves, sometimes like French caps, but in certain cases showing a special type of foliage peculiar to Belgium, and the hard stone with which they worked. The windows in the small churches are often lancet-shaped. In the Second Pointed style, from 1310 to 1400, geometrical tracery in the windows becomes the chief exponent; the ornament of the capitals is still thoroughly conventional, and differing in that respect from German caps of the same period. In the Third Pointed style the windows assume immense size, for the admission of stained glass. The decadence of the style shows itself in the elaboration of the ribs of their vaulting, in the panelling of the walls, and in bringing down the mouldings of their arches instead of stopping them in capitals. The plan of the earliest churches seems to have been based on that of the old Basilica, consisting of nave and side aisles, sometimes a transept and choir with an apsidal end, although in the two most ancient churches actually existing, St. Vincent at Soignies and St. Gertrude at Nivelles, we find square ends. Towards the close of the Transitional period the aisles are carried round the choir, which increases in length till in many cases it becomes as long as the nave. In the fourteenth century chapels are added round the choir, the centre and largest of which are dedicated to the Virgin. In the fifteenth and sixteenth centuries chapels are added on each side of the side aisles. In most of the old churches crypts extended under the choirs, sometimes stretching under the transept. As a rule the crypt was low, so as not to cause a difference of level in the church between the nave and choir. To this rule, however, the church of Notre Dame, Maestricht, forms an exception. In the arrangement of the façades a feature is found peculiar to all the earliest churches in Belgium, and which exists also in many of the churches of the north of Germany; it consists of a western tower the full width of the nave, in the upper portion of which the bells were placed, and which joins a kind of narthex or vestibule to the church at a point where formerly stood the font. This narthex is sometimes flanked on either side by circular towers, in which the stairs are placed to ascend into the belfry. The whole mass rises a considerable height above the church, and forms a distinguishable and noble feature. The chief examples of these towers are at St. Servais and Notre Dame, Maestricht; St. Denis, St. Bartholomew, and St. John, at Liège; St. Gertrude at Nivelles; and St. Vincent at Soignies. The towers in Belgium themselves have always formed the most conspicuous feature of the churches, though, singular to say, the most remarkable of them have never been completed, and still want the crowning feature—a spire. The picturesque grouping of the five towers of Tournai Cathedral is, perhaps, familiar to you, that being the only instance of five towers to one church. When there are one or two towers they are generally found at the west end, though at St. Pamale, Oudenarde, where there is only one tower, and that an octagonal one, it comes at the intersection of the nave and transept. Spires are very rare in Belgium, and the only important church which, in the memory of the lecturer, possesses one, is Notre Dame at Bruges. The towers of St. Gudule, Brussels, of the cathedral at Malines, and of St. Martin's, Ypres, all of the fourteenth century, are all incomplete, wanting the spires with which it was intended to crown them; and when it is noted that two of these towers, if completed, would have risen to the height of 530 feet, and that their foundations and walls are of sufficient strength to support easily spires of that height, some idea may be formed of the massive nature of these structures, equalled in size only by the towers of Cologne Cathedral. The cathedral at Antwerp is remarkable for its lacework spire or tower, and he (Mr. Spiers) knew not, of the criticisms passed on it by two celebrities, Napoleon and Wellington (without any idea or wish to detract from its merits), which was the most cutting; the one observing that it reminded him of Mechlin lace, the other saying that it was so beautiful and delicate that it ought to be put under a glass shade. Both these criticisms show that elaborate detail and too great fineness of parts are out of place in northern climates, and unfit for the external decoration of architectural buildings. Of brick church-towers there are many examples in the northern part of Belgium, and none more remarkable either for size, design, or execution than those of Notre Dame and the cathedral at Bruges. The former, begun in 1230 and completed in 1297—the largest brick tower in Belgium—rises to a height of 220 feet, not including the spire, added in 1524, which—part brick and part stone—has since been considerably altered from its original design. The eye is carried up the tower by the long vertical lines of the principal and secondary buttresses without a single horizontal line or break, and the small size of the material, the openings, and the intimate juxtaposition of an elaborate 15th century porch at its base, give a scale to this tower which imparts impressions of sublimity and magnificence not surpassed by any other building known to Mr. Spiers. The tower of the cathedral is a simple mass of brick-work, without any ornament or relief in the shape of buttresses. The upper portion is modern, and due to the design of an English engineer. The details are Romanesque, and the grouping of the four turrets round the central tower, masking as it does the fact of the tower not being square, is extremely ingenious. There are no porches to the Belgian churches worth note, excepting that of St. Servais at Maestricht, the ornament of which is very good, though the figures have not the earnestness and beauty of French work. The west end of the nave, as a rule, when there are no towers, is surmounted on both

sides by circular turrets decorated with blank arcadings. In the church of Notre Dame at Bruges these turrets are in brick, with long slender shafts, also decorated with arcadings of the same material. The west front of Liège has an apse, as also the north and south transepts of Tournai. The choirs externally at Ypres and Tournai are also fine, the former possessing neither aisles nor choir chapels. The interiors of the churches generally are very grand, and even to a late period the piers of the nave were always cylindrical, and have good capitals, both features conducive to simplicity and grandeur of effect. There are only two churches in Belgium which have the nave and side aisles of the same height. This form of church, called *Hallen Kirchen* in Germany, and often found there, exists only in St. Martin's at Courtrai and St. Croix at Liège. At the entrance to the choir is generally placed a rood screen, sometimes increasing, but more often destroying, the general effect. The nave piers have invariably huge statues standing on corbels attached to them, which add to the picturesqueness of the general effect, but cannot always be accepted as in good taste. The extravagance and wildness of their subjects, carved in expensive woods, with trees, shrubs, grottoes, and flying cherubs, form not the least attractive portion of the Belgian cathedrals to the generality of travellers, who thus prove their utter ignorance of what is good or bad art. Having thus described in a general manner the result of his observations, Mr. Spiers now turned to a description of the construction of particular churches, selecting as his examples the Cathedral of Tournai, foremost in interest to every student, and undeniably the finest Romanesque church in Europe; the Cathedral of St. Servais, Maestricht, of immense size and height, and possessing features peculiar to itself; the Church of Notre Dame, Maestricht; the Church of Notre Dame de Pamale, at Oudenarde, externally effective by the windows being more or less flush with the internal wall, and having arcades astride. The windows are lancet-headed, and, with their arcadings carried in columns, remind one of early English examples; the Church of St. Martin, at Ypres, is the best specimen of First Pointed work in Belgium. After these in point of date come a series of large churches or cathedrals of great size and magnificence, but deficient generally in purity of detail in ornament and moulding. They generally date from the 14th and 15th centuries. The most remarkable of these are the Church of St. Gudule, at Brussels; St. Peter's, Louvain; St. Rimbaldt, Mechlin; and St. Martin's, Liège. They are all of great size and good general proportions, and have one great redeeming feature, viz. cylindrical pillars to the nave. Speaking of St. Gudule, Brussels, Mr. Spiers parenthetically remarked, 'the stained glass which abounds here is deficient in those principles which we are accustomed to lay down as necessary for the production of good work. There is one point, however, to be borne in mind, which very often escapes the attention of those who have the interests of the manufacture at heart, and that is that these windows are not always intended to delight amateurs or connoisseurs with their brilliancy of colour, or their adherence to precedent, but to teach Scripture and the history of religion more forcibly than can be done in sermons or books. In this respect I am bound to say that these pictures quite fulfil their object; for having read the story of "The Jews and the Stabbing of the Holy Sacrament," I had made my tour round the church, greatly interested in the illustrations I beheld; and it was not till I began to note down the most remarkable points in the glass that I discovered that there was scarcely a single good principle in their manufacture, excepting that the figures displayed a knowledge of anatomy and drawing of the human figure, which is more than can be said of all glass.' After speaking of the cathedral at Antwerp, the base of which covers more ground than that of any building in Belgium; St. Jacques at Liège, the latest church in the Gothic style and the finest example of sixteenth century work; the Chapel and Crypt of St. Sang, Bruges, dating from the twelfth century, the crypt, or lower chapel, having been built by Thierry of Alsace on his return home from the Holy Land, is most peculiar in its formation, possessing two towers which, though apparently separate, are, on close examination, found to be joined together; the Church of St. Croix, Liège; and last, though decidedly not least, the Church of Aix la Chapelle and the tomb of Charlemagne—Mr. Spiers proceeded to say that if the ecclesiastical architecture of Belgium does not afford us that brilliant series of examples which we find in France, the deficiency is amply supplied by the magnificence and variety of her secular buildings, in which she remains unrivalled.

(To be continued.)

#### The Graphic Society.

The fourth meeting of this Society took place on Wednesday evening last, when there was the usual attendance of artists and visitors, amongst whom were Messrs. D. Mocatta, J. Holland, Lucy, Goodall, Carl Haag, J. Lewis, E. H. Corbould, R. W. Edis, Eastlake, and Woolner, and Sir M. D. Wyatt, &c. A very good collection of paintings and drawings was exhibited, the most noticeable of which were some clever water-colour sketches by Alfred Fripp, a careful study of a head by F. W. Burton, some paintings by Frost Anthony, Alfred Newton, and Geo. Mawley, and some interesting chromolithographs of Greek paintings, from one of the churches of Moscow, and some photographs of the Kremlin, &c., &c.

N.B.—We are compelled to postpone the reports of several other meetings till next week.



#### ARCHITECTURAL EDUCATION AND THE ARCHITECTURAL PROFESSION.

SIR,—Mr. Spiers mistakes the object of my paper, and objects to my venturing, in a general article on the above subject, to criticise a Report which he, as one of the delegates, had probably some considerable share in

composing. I read the Report carefully, and expressed my opinion somewhat strongly thereon at the meeting of the Architectural Association; and although Mr. Spiers thinks I have not read it, because he says some 'seventy lines of printed matter are confined to inquiring into those causes' which are in a great measure, in my opinion, the reason of the present admitted faulty system of education, I cannot consider that those said seventy lines to which I presume Mr. Spiers alludes are in any way fair exponents of the reasons which make the present system faulty; and I almost entirely disagree with the views expressed by Mr. Spiers as to the present pupilage system, and venture to assert that he would not hold the views thereon in the Report, and which I must consider his, had he more real knowledge of the system in question. Mr. Spiers's training upon another system naturally leads him to lean to the foreign system of education.

As regards his second objection, I feel quite certain that the proposition of the Report as to apportionment of time for a pupil under Head IV. could not be practically carried out, and I doubt much whether any architect would be willing to receive a pupil in the way proposed, nor do I think it would at all be desirable, and therefore can hardly look upon the suggestions made as 'based upon the pupilage system,' since they more or less propose that the pupil shall spend a very considerable portion of his time out of the office; and, if the office be a large one, that a paid instructor should be provided, which would practically be more or less making the architect's office a private 'atelier,' independent of the architect himself, who I believe, with a few unworthy instances, is in no wise the 'bête noir' that Mr. Spiers would make him out to be. I forbear to discuss Mr. Spiers's remarks as to the academical system, and his comparisons as to railway travelling and stage-coaches. We have only to take the fact that, with very solitary exceptions, all the well-known architects in this country have as pupils gone through the curriculum of an architect's office, and I think it will be admitted that they will compare more than favourably with those educated on the foreign system.

It remains to be seen whether my own or Mr. Spiers's views are right as to compulsory examination being a necessity, or the result of architectural education. Basing my views on the foreign system named in the Report in question, I think naturally that it will be the former. I still hold to my views as to the paid professor; and with one, or perhaps two exceptions, the names quoted by Mr. Spiers as 'architects of the highest eminence' are comparatively unknown in this country. As regards my remarks on the present theoretical system of French education, I confess I took my opinion in a great measure from the words of the Report, which, if, as Mr. Spiers says, too exaggerated, must account partly for my views, although, as far as my knowledge of the system itself goes, they are practically borne out by the results. I have every desire to see an alteration in the present system of architectural education if such can be made really beneficial to those about to enter the profession, and I have every hope that the General Committee now sitting at the Institute will be enabled to put forward such a scheme as will be, not only beneficial, but practical, and one which will seek to associate with it and make prominent the present means of obtaining a higher knowledge of all branches of artistic and constructional education; means which it seems to me have been neglected, perhaps from want of being more generally known, but which do offer in reality many of the opportunities for learning that are so strenuously advocated. Whether the education of an architect shall be made compulsory or not is a question for the general profession at large to determine: I for one am sanguine enough to believe that it must eventually be so, and that a man shall have no more right to practise as an architect than he has to do so as a doctor or lawyer, without going through a similar course of compulsory education and examination.—I am, Sir, yours, &c.,

February 9, 1869.

ROBERT W. EDIS.

#### THE NATURE OF GOTHIC.

SIR,—Whilst reading the review in the *Times* to-day of Dr. Lubke's work on the 'History of Art,' I came upon the following passage:—'*Of this bevelled edge or chamfer, it should be observed, our author makes no mention; he seems not to be aware that in it consists the essence of the Gothic style, and not, as is generally supposed, in the pointed arch.*' This really wonderful discovery, which the architectural critic of the *Times* has made, and thus gives forth generously to the world, is calculated to upset our previously existing notions, and perhaps the whole course of study which should be pursued in acquiring an intimate acquaintance with the Gothic style. I suppose that in point of importance, after chamfers, notches would come; so that the *ci-devant* Music Hall in the Strand, which has been so much abused, is really the finest specimen we have of Gothic art, and where all its principles are developed to their fullest and truest extent. Seeing that that is the case, I think some means ought to be at once taken to prevent the ruthless destruction of this building by the architect of the Gaiety Theatre, who has already destroyed the lovely doorway formerly existing; and I think that a committee of members of the Royal Institute of British Architects (who, beyond the election of foreign honorary members, seem to be doing little) might be appointed to inquire into the best means of preserving this marvellous building, and especially its essential qualities,

February 9, 1869.

CHAMFERS AND NOTCHES.

#### THE SOUTH KENSINGTON MUSEUM.

SIR,—When we have such an excellent Institution as the Kensington Museum and its Schools amongst us, a sort of Fountain of Art, we are tempted to become critical on the doings at such a place, and I should like to call your attention to what seems to me to be a terrible break down in the High Art department.

There has been lately opened a new gallery, called with absurd affectation 'Keramic,' but it is nevertheless a capital gallery and well lighted. There is also, leading up to it, a staircase, also 'keramic' I suppose, as it is chiefly composed of earthenware.

It is in the ceiling of this staircase where the break down seems to have occurred. In the centre panel is painted a wonderful confusion of figures flying up-stairs against a hard blue sky; and in the dome over the landing are some more of the same sort, capably painted, but utterly inappropriate to their position. They are pictures, not architectural paintings; in fact one is irresistibly reminded of the huge putty angels and cherubs of the French palaces, or the heathen gods and goddesses of Verrio and Laguerre.

The pictures, which would do very well in a frame, are not in the least of the nature which is demanded by their position.

If figures are to be placed as these are, they should be treated architecturally, as are those of Raphael on the ceiling of the Stanza de la Segnatura in the Vatican, where the gold ground at once takes away the idea of a picture, and such a treatment would harmonise well with the smaller panels of the ceiling of the staircase, where the ground is gold.

At present the contrast between the sober richness of the small panels and the common modern French look of the centre panel is very painful and harsh.

There is about the whole of this staircase, and indeed about many of the new decorations, an apparent laxity in the use of the human figure, which is not a very hopeful sign. In the dado there are unfortunate creatures crammed into sloping panels in the most painful and acrobatic fashion.

Such things were never done in the purest days of art.

Trusting that the Museum authorities may put the right thing in the right place,

I remain, Sir, yours obediently,

SCRIBATOR.

## NEW BUILDINGS AND RESTORATIONS.

### Church Extension at Sheffield.

On February 5 the new church of St. Silas at Gilcar was consecrated by the Archbishop of York; a number of the local clergy and a numerous congregation assisting at the ceremony.

The church, which has been erected by the munificence of H. Wilson, Esq., at a cost, exclusive of the site, of about 6,800*l.*, consists of a nave 80 feet long and 27 feet wide, north and south aisles seating 800 persons, and a well-proportioned and rubrical chancel, with an organ chamber and commodious vestry on the south side, and on the north side are seats for the accommodation of the Sunday school children.

The style selected by the architects is Early Pointed, in which a Continental influence is strongly apparent, and the effect of the exterior is simple and ecclesiastical, while thoroughly effective as a piece of town church architecture—a move in the right direction on the part of the local church builders which we hail with satisfaction.

At the south-west corner of Hanover and Broomhall Streets rises a lofty, massive, and pinnacled tower, the belfry windows of which have shafted jambs and deep louvre boards, and the whole surmounted by a boldly-carved corbel table and parapet, with gargoyles at the angles. The lower portion of the tower forms the principal entrance to the interior of the church, which has a well-proportioned and lofty arcade of stone on circular columns, having well-studied and spirited conventional capitals.

The chancel is 'fitted up' with carved oak reredos, altar table, screens, choir stalls, and pulpit and reading desk in (to say the least) a very doubtful and nondescript style of 'Gothic,' which, being in direct variation from the detail and general sentiment, and unworthy of the rest of the church, have quite marred the effect of the interior.

This is the more to be regretted, for the architect (working in the true spirit) has employed his best efforts here, trusting doubtless to the opportunity of completing the various accessories in a spirit worthy of the other portions of his work.

We cannot but add that on inquiry we ascertained these fittings have not been under the control of the architects, and have been designed and executed by Mr. Shaw, of Saddleworth, 'architect (*sic*) and carver,' who is, according to a local contemporary, 'very eminent in such matters.'

The roofs are open and boarded, and the chancel has a waggon-headed wooden ceiling.

The gas fittings are by Peard & Jackson, the stone carving by Farmer & Brindley, of London; and the contractors, Messrs. Badger & Holmes, of Sheffield, have executed their work most efficiently from the designs and under the superintendence of the architects, Messrs. Blackmoor & Mitchell Withers, of Sheffield and Rotherham. Mr. Mellors has acted as clerk of the works.

The Archbishop assisted the same day at the opening of the new church of All Saints at Brightside, near Sheffield, erected by Sir John Brown, to which we may return next week. Messrs. Flockton & Abbot are the architects.

**The New Church at Brookhouse, Blackburn.**—On January 28 the Bishop of Manchester consecrated the new church at Brookhouse, dedicated to St. Michael and All Angels. The new parish church was designed by Messrs. Stevens & Robinson, architects, of Derby, and contains accommodation for 800 persons. The plan consists of nave, with north and south aisles, divided from it by arcades of fine arches, and together measuring 72 feet by 51 feet; the chancel is 32 feet by 22 feet; and an organ aisle and vestry on the north side of the chancel, 26 feet by 13 feet. The tower is placed at the south-eastern angle, with arches opening—one into the chancel and one into the south aisle, which has been arranged as a baptistery, having a font placed in it. There are two main entrances—one through a porch on the south side of the church, the other through the tower; there is also an entrance for the clergy into the vestry. The church, which is designed in the English Gothic style of the thirteenth century, is built of stone, with two and three light tracery windows in aisles, five-light east window, rose window in the west end, and large-sized trefoil windows in the clerestory. The tower is 70 feet high, and it is intended, when funds permit, to erect a spire 78 feet in height, with large spire-lights and broached pinnacles. The corner-stone of the edifice was laid at the north-east angle of the tower, by W. H. Hornby, Esq., M.P., on January 6, 1866. At the west side of the church there is a small gallery, which has been set apart for children. The woodwork of the roof and seats throughout is of deal, stained and varnished; the height of the nave from the floor to the apex of the roof is 50 feet, and of the chancel 44 feet. The floor is laid with Minton encaustic tiles. The pulpit is made of Caen stone, supported on marble pillars. In the tower is a small stained glass window, by Messrs. Clayton & Bell, of London, presented by Mr. Robinson, the architect. Mr. Richard Hacking, of Blackburn, was the contractor for the completion of the building.

**The Parish Church of Padiham, Lancashire,** has been rebuilt to twice its original dimensions, and at a cost of nearly 9,000*l.*, under the direction of Mr. Waddington, architect. The new church is built in the style which prevailed in the early part of the fifteenth century, and stands upon the site of the old edifice. The tower is situated at the south-west angle,

and forms an imposing feature in the design, rising to the height of 116 feet, finished with panelled battlements and eight crocketed pinnacles. Some relics of the old church have been preserved, the most precious of which is the ancient and beautiful carved stone font, the gift of Abbot Paslew to Padham Chantry in the sixteenth century. Two stained glass windows from the old church have been remodelled and inserted in more becoming positions; whilst the new church has been enriched by the gift of six other handsome painted windows, one of which is manufactured by Mr. Edmondson of Manchester, and the remainder by Mr. Wailes of Newcastle. The greater portion of the carving in the interior of the church was executed at the expense of the architect, who is a native of the parish.

**St. Ann's New Boys' School, Birkenhead.**—The new boys' school in connection with St. Ann's Church, Birkenhead, of which the Rev. A. Wright is the incumbent, was formally opened on Monday evening. The new buildings are erected from the designs of Mr. David Walker, of Lord Street, Liverpool, and provide accommodation for about 200 scholars, the plans being in accordance with the Committee of Council regulations, from whom a grant in aid is obtained. The schoolroom is 77 feet long by 20 feet in width, and there are two classrooms each 25 feet 6 inches by 15 feet in width, together with cloakroom, lavatory, entrance porches, and all usual conveniences, a large playground being likewise provided. The schoolroom is spacious, lofty, and ventilated, the roof timbers exposed to view being varnished; and the wall is coloured a warm tint on the brickwork, and finished with a skirting 4 feet high in oil paint, and capped with a stencil border. The classrooms are fitted up with galleries. The style of the building is Gothic of an early character, constructed almost entirely of brick. The site of the new buildings was presented by Mr. Thomas Brassey, who also gave a liberal donation towards the building fund. The cost of the works will be above 1,200*l.* Messrs. Booth and Richards, of Rock Ferry, were the contractors.

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

### Berlin Cathedral Competition.

The advertisement inviting competition for a new cathedral for the capital of Prussia appeared on August 12, 1867, the time given for preparing designs being about a twelvemonth, and the result is that 49 architects have submitted 51 designs, represented by 359 drawings and 3 models. The idea was first mooted some years ago, and Mr. Stieler, since deceased, submitted plans at the time; these are now exhibited, together with the new designs, in the galleries of the Royal Academy, but ecclesiastical architecture has made such progress since the days when this great Prussian architect ceased to work, that his plan will scarcely be adopted. Of the 51 designs now submitted 10 are provided with mottos, the rest bearing the names of their authors, 4 of whom are non-Prussians, 2 Frenchmen, and 1 Belgian; there are no English competitors. The French architects are Messrs. Gazagne & Petit, both of Toulouse, and the Belgian is Mr. Minne, of Ghent. We shall content ourselves with a brief description of a few of the designs:—No. 1, Mr. V. Statz, of Cologne; five aisles, two towers at west end, no projecting transepts, Gothic. No. 7, Eberlein, of Nuremberg; seven aisles and three towers, Gothic. No. 10, Schwatlo, of Berlin; round church with dome and four towers, modernised Romanesque. No. 18, Petit, of Toulouse; French Romanesque Rococo. No. 21, Heyden & Kyllmann, of Berlin; hexagonal dome, with short nave and two towers, rich Renaissance. No. 26, Adler, of Berlin; cruciform arrangement with dome and short transepts, heavy Romanesque. Of the 51 designs submitted, 14 are Gothic, 13 modern German Romanesque, 7 Classic, 5 Renaissance, 4 Rococo, 3 old German Romanesque, 3 Italian Romanesque, and 1 Russo-Greek.

### London Water Supply.

It appears that the project of Mr. Bateman for supplying London from 'the surplus water of the Severn' to the extent of 200,000,000 gallons per day is quite impracticable. The Severn, like all other rivers, requires the scour produced by occasional floods; and if this were prevented by the reduction of the necessary volume of water, the entire estuary of the river would in a short time be silted up, and the river itself would probably be rendered unnavigable. Those of our readers who are acquainted with the works of Professor Hitchcock or Sir Charles Lyell will have no difficulty in remembering the startling statistics given by both those well-known writers with reference to the gradual silting up of the estuaries of great rivers. Another evil arises from the silting up of the channel of a river which is even more serious in its consequences than the stoppage of the water way. We allude to the fact which is well known to all who have had anything to do with drainage works, that the higher the bed of a river is allowed to rise, the greater is the difficulty experienced in draining the low lands by the river side. This difficulty has already been experienced in connection with the watershed of the Severn. During the long-continued drought of last summer the reaches and deep pools near Gloucester became choked with mud and silt. No flood came down the river for nearly eight months; and during the month of July there was not sufficient water to supply the pumping mains of the Worcester Waterworks.

So great is the activity displayed in the building trade at Pest, in Hungary, that bricks are quite at a premium. 3*l.* per thousand is willingly paid, and builders are glad to get them for that. Spite of several of Hoffmann's kilns erected in the neighbourhood, and the production of bricks by machinery, the demand continues in advance of the supply. What a chance for some of our brickmakers! Only Pest is distant from London rather over a thousand miles, as the crow flies!

An Exhibition, chiefly of objects of art, is announced to take place at Wittenberg, in Saxony, under the patronage of the Crown Prince of Prussia. The Academy and Architectural Institute of Berlin have pro-

mised their support, as well as many societies and firms in the south of Germany. Applications for space should be sent in not later than April 1 next.

### Antiquities of Paris.

Archæologists who visit Paris will find in the old square of the Louvre a series of extended lines marked in light-coloured cement on the pavement and central portion of the court; these mark the place of the great tower of the Old Louvre with its surrounding ditch and outworks, the foundations of which lie beneath the soil, and were very carefully laid bare and mapped not long since. It was a happy idea thus to commemorate the actual position and form of the famous old building.—A discovery equally interesting, but not capable of the same mode of perpetuation, has just been made on the Place de la Bastille. In digging the foundations for a block of houses some remnants of the foundations of the State prison of lugubrious memory have been brought to light. It appears that the general idea of the position of the Bastille was erroneous; it was supposed that the site was that of which the Column of July marks the centre, but it is now found that the building was at the entrance of the Rue Saint Antoine, as indeed some archæologists have asserted. The form of the Bastille is well known—it was octagonal, with massive towers at each of the angles, surrounded by a deep fosse and approached by two drawbridges; the parapet on all sides was machicolated and bristled with cannon. The first stone of the Bastille was laid by Hugues Aubriot, Provost of the Merchants of Paris, in the year 1370. The names of the eight towers were:—The Corner and Well towers, to which the remnants that have now been discovered belonged; the Bertaudière and Liberty towers—the latter name must surely have represented liberties taken, not accorded; the Bozinière and Comté; and the Treasury and Chapel towers. It is to be hoped that some memorial will mark the spot where once stood that dark and bloody fortress which fell in 1790 before the pent-up fury of the people.

### An Archæological Discovery.

During the alterations which are being made at St. Mary's Church, Chatham, a fine specimen of a Norman arch has been discovered, between the centre entrance and the vestry-room. One side of the arch is in a tolerable state of preservation, but the other is much decayed. It is thought that a corresponding arch exists on the other side of the modern doorway. They are supposed to have been formerly the entrances to aisles of the ancient church.

### Public Monuments, Statues, &c.

This should be a time of rejoicing for sculptors, for all the world seems occupied in raising memorials of the departed great. Holland deserves first notice, on account of the grandeur of the memorial which she has decided to raise at the Hague, to commemorate her freedom from foreign rule; the monument is to stand more than 70 feet high, and to include, besides a crowning figure representing Dutch Freedom, a group and three statues in bronze, of colossal size, and a number of bas reliefs and inscriptions. The figures are to represent William the First, the patriot Counts of Hoogendorp, Limberg, and Van Maasdem, Religion and History. Portugal is raising a monument in honour of the founder of her present Constitutional Government, Don Pedro IV., in the Place du Rocio, at Lisbon. This monument is to be crowned with a statue of the king, which has been modelled by a well-known sculptor, M. Elias Robert; it is in bronze, and about 9 feet in height, and according to a laudable practice in Paris, it has been for some time publicly exhibited outside the Louvre, and has but just been removed to be sent to its destination. Don Pedro is represented in the costume of a general, the head uncovered and a laurel wreath in the brow. It is a fine work of art. Corsica, which already has memorials of Napoleon the First, Cardinal Fesch, and Abbatucci, is about to raise one in honour of Joseph Bonaparte, King of Spain. A statue is now being prepared after Houdon's bust of Voltaire, to be placed near the Institut, at the corner of the Rue de Dennes, Paris; this memorial is the result of a public subscription, amounting to a sum equal to 1,436*l.* A statue of the late M. Dupin the elder is about to be raised in the Grande Place of the town of Varzy, where M. Dupin was born; it is about eight feet high, and is the work of M. Emile Boisseau. A very pleasing innovation is being made at Versailles, where formerly scarcely anything but battle scenes and portraits, statues and busts of marshals and generals, was admitted, in the introduction of memorials of artists, poets, and other peaceful heroes; twenty busts have been set up in the gallery of the palace of Louis the Magnificent, and amongst these were the effigies of the famous Egyptian scholar Champollion, the chemists Gay-Lussac and Pelletier, the musician Lesueur, the sculptor Rude, and the poet of the people, the chansonnier Béranger. Not long since the bust of Richard Cobden, the free trader, was placed in the same gallery. It should have been placed side by side with Turgot, to show at once how the same ideas may be revived from age to age, and how long it takes to reduce philosophic truth into practice. M. Dantan, the younger, is now engaged on a bust of Rossini, ordered by the Minister of the Fine Arts for the Library of the Institute of France. It will not be out of place here to mention that M. Dupré, sculptor of Florence, who obtained one of the Prix d'Honneur at the Great Exhibition of 1867, has been elected a Foreign Associate of the Paris Academy of the Beaux Arts.

## General.

**The Thames Embankment Viaduct.**—A deputation, headed by Lord Elcho, recently waited upon Mr. Layard in order to induce him to use his influence to prevent the intended viaduct from Charing Cross Bridge to the entrance of Waterloo Bridge from being proceeded with. Mr. Layard promised to use his influence to secure the delay, and expressed his entire concurrence with the object, but said he had no actual power in the matter, as the Board of Works acted under authority of Act of Parliament.



It is probable that the members of the Arts, Fine Arts, and Junior Athenæum Clubs will coalesce and become one, in the splendid house recently acquired by the last-named club in Piccadilly.

The Corporation of London have commissioned Mr. George G. Adams to execute, for the Council Chamber at Guildhall, a marble bust of the late Lord Brougham.

The Royal Gallery in the House of Lords is being decorated, and the work which was left unfinished by the late Sir Charles Barry is now being completed.

A subterranean passage has been discovered, extending from the School at Westminster (formerly the monks' dormitory) to the great passage under the cloister.

The Institute of Naval Architects will hold its ninth annual meeting at the hall of the Society of Arts, in John Street, Adelphi, on the 18th, 19th, and 20th of next month.

Mr. G. Mason and Mr. E. J. Poynter (who, our readers will recollect, exhibited 'Israel in Egypt' last year) have been chosen Associates of the Royal Academy.

The temporary home of the new University Club at the south end of Savile Row, adjoining the Stafford Club, is about to be sold by auction.

St. Margaret's Church and Vicarage, now being erected in the Prince's Road, Liverpool, from the designs of G. E. Street, Esq., A.R.A., are advertised to be sold. The Church, which was expected to be ready for consecration in May, and will contain seats for 1,000 persons, and the Vicarage, which is of considerable size, were commenced at the sole expense of Robert Horsfall, Esq., of Liverpool, for the Rev. Mr. Clark, Vicar of St. Mary's, Taunton; but as the latter gentleman has declined to vacate his present living, owing to the emoluments thereof having been recently increased, Mr. Horsfall has determined to dispose of the buildings.

The Ecclesiastical Commissioners have made an additional grant of 5,000*l.* to the fund for the restoration of Ripon Cathedral. The choir has already been restored, and was opened a few days since.

The annual meeting of the Salisbury Diocesan Church Building Association was held on Tuesday last, when the report and statement of accounts were read and passed, and an urgent appeal was made for increased funds. The Society is doing a great work in promoting the building and restoration of churches in the diocese.

A number of interesting objects purchased for the South Kensington Museum, from the Paris Exhibition of 1867, have been added to the Bolton Mechanics' Exhibition. As an illustration of cheapness combined with art, they are of great value.

St. John's Chapel, Cambridge.—The magnificent chapel of St. John's College, Cambridge, is fast approaching completion, and will probably be ready for consecration on May 6 next. This chapel will be, beyond all doubt, the second ecclesiastical building in the University, King's College Chapel standing first, for ever secure from all rivalry. The ground-plan is that of Merton Chapel, Oxford—a cross church, *minus* the nave, with a pinnacled tower at the intersection, and an organ chamber projecting to the north-east. The east end forms a five-sided apse. The style is the Decorated of Edward the Third's reign. The tracery of the windows is varied and rich, and the whole, both inside and out, is profusely decorated with elaborate carvings. The foliage round the apse windows is peculiarly lovely. The chapel proper has a coved ceiling of wood, richly decorated with colour and gilding. It is divided into nineteen bays, which are made to correspond with the nineteen Christian centuries. The bay over the altar contains a representation of Our Lord in Majesty. The remaining eighteen display representative men in religion, science, and literature from each century. Those selected for the present century are Wordsworth, Wilberforce, and Dean Wood. These, as well as the whole of the internal decorations and the windows, are designed by Messrs. Clayton and Bell, and the general effect is one of great beauty.

Among other Indian curiosities which have been discovered in a cave at Rock Island, Illinois, the statue of an Indian Maiden has been brought to light. It has a solid copper pedestal 7 feet in height, and an obelisk of solid brass.

Restalrig Church, Scotland, sustained some damage on Sunday last, by the bursting of one of the pipes of the heating apparatus. A portion of the congregation near the place of fracture received serious injury from the scalding steam.

At Greenwich, Mr. Charles Lyle, a builder, of Russell Street, Queen's Road, Peckham, was brought up for final examination, charged with wilfully and maliciously doing damage to two houses in course of erection at Lewisham, to the amount of 100*l.*, and carrying away and disposing of fixtures, valued at 150*l.*, belonging to Mr. Alfred Blackburn of Clapham. The prisoner could not procure bail, and was conveyed to Newgate.

Mr. Daniel Flitoroff, of Bolton, has obtained the contract for the erection of the new Industrial School at Lostock. The cost will be 3,000*l.*

The guardians of St. Pancras have erected a mortuary-house, with *post-mortem* room, in the burial-ground adjoining the workhouse.—*English Churchman.*

Trieste has raised 20,000 florins for the erection of a monument to Maximilian, and an 'expiatory church' is also being built at Vienna.

After a great deal of excavation an entrance to the subterranean vaults and dungeons of Guildford Castle has been made. The largest room is now open, and measures 60 ft. by 57 ft.; height 9 ft. to 15 ft. Six others have yet to be found.

St. Mary's Roman Catholic Church, Pensance, is about to be enriched by a splendid altar, composed of the choicest polished granites, serpentine, &c., of the county, the gift of Sir Paul Molesworth. The cost will be 350*l.*

The Choir of Ripon Cathedral was re-opened last week, the restoration, which has been in progress for some years, being now nearly finished.

The New Church at Waddeton, Devon, was used for the first time on the first Sunday in the new year. It comprises nave, chancel, vestry, and porch. The former chapel was consecrated in the twelfth century.

The parish church at Camden Town has undergone some extensive alterations and improvements.

Additional improvements have been made to Christ Church, Wolverhampton, and it is now re-opened.

The tower of the parish church of St. Issey, Cornwall, which contained a fine peal of bells, fell with a tremendous crash on the 2nd inst. The roof of the church was broken entirely in, and the organ was smashed to pieces.

The Wilts and Dorset Banking Company have pulled down their premises in Salisbury, and are building a much more spacious and well-planned bank. Mr. Henry Hall, of 15 Duke Street, Adelphi (London), is the architect, and Mr. Robert Fulcher, of Salisbury, the builder. The cost of the new bank will be about 6,000*l.* The front of the building will be of Harn Hill stone; and the banking-room, 40 feet by 60 feet in extent, will be roofed with a dome supported on Devon marble columns. The bank, when completed, will be one of the finest architectural ornaments of the ancient city of Salisbury.

Towards the end of last year a handsome Statue of Charles XII. of Sweden was inaugurated at Stockholm with military honours. It has been erected in what was formerly called Charles XIII. Square, but is now known as the King's Garden; together with its pedestal, it reaches a height of 30 feet. The figure itself is 15 feet high, cast at Stockholm, but modelled by George Herolt, of Nuremberg, and displays no ordinary amount of life and animation. The King, who has been well called the 'Alexander of the North,' stands with head uncovered in the military costume of his time; his drawn sword is in his right hand, and the left arm is raised, pointing in an attitude of command. The pedestal is of Swedish grey granite, and plain. At the four corners are four mortars connected by chains. The mortars were taken in 1701, by Charles, at the battle of Neumünden, and the old inscriptions upon them tell us that they were cast at Dresden in 1678, by one Andrew Heraldt. The chains were taken from an old Swedish man-of-war. We are informed that all classes, from prince to peasant, contributed towards this national monument of the man who spread the fame of the Northmen from Copenhagen to Ukraine. Of him Johnson sang:—

Peace courts his hand, but spreads her charms in vain;  
'Think nothing gained,' he cries, 'till nought remain;  
On Moscow's walls till Gothic standards fly,  
And all be mine beneath the polar sky.'

It is the intention of the Erie Railway Company to extend its line to New Jersey by means of a tunnel under the Hudson. In order to obtain space for the necessary approaches at the New York end of the tunnel, Pike's Opera House and other property in the neighbourhood of 23 Street and 8th Avenue have already been purchased by the Company, and it is expected that the works will be commenced early this spring.

A new and very perfect aquarium is being added to the Zoological Gardens at Berlin, and will probably be finished in the course of this spring. No less than 10,000 animals are awaiting the completion of their new home, and amongst them are said to be twenty crocodiles.

#### QUESTIONS.

To the EDITOR of THE ARCHITECT.

DEAR SIR,—Will you kindly inform me, through the medium of your Journal, of a receipt for polishing marbles, granites, &c., and oblige  
Yours respectfully,  
MILEY SONAM.

#### ANSWERS.

SIR,—In your No. IV., January 23, there are two questions put to which I beg to submit answers.

In the first case, the Clerk of Works is responsible either for ordering or sanctioning any materials or workmanship not according to specification, because he is acting in opposition to the very objects for which he was appointed.

In the second case, if the work is specified to be done to the satisfaction of the architect, and he is satisfied, his opinion cannot be overruled by any proprietor or surveyor, except there is something very gross; something so different from the specification as not to be a matter of opinion at all. I had a similar case not long ago in my own professional experience, and the dispute was settled as now stated.

I am yours, &c.,

NORTH BRITAIN.

#### MEETINGS OF LEARNED SOCIETIES.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Monday, February 15, at 8 P.M.  
INSTITUTION OF CIVIL ENGINEERS.—Tuesday, February 16, at 8 P.M. 1. Renewed discussion on 'The Mauritius Railway, Midland Line.' 2. 'On the Lagoons and Marshes of certain parts of the Mediterranean,' by Professor Ansted, F.R.S.  
ARCHITECTURAL ASSOCIATION.—Friday, February 19, at 7.30 P.M. On 'The Arrangement of a Parish Church to meet the requirements of the present day,' by J. T. Mickethwaite, Esq.  
ROYAL INSTITUTION.—Tuesday, at 3 P.M. Mr. Westmacott on Fine Art. Thursday, at 3 P.M. Dr. Foster on Involuntary Movements. Friday, at 8 P.M. Mr. Greville Williams on the Female Poisoners of the 16th and 17th Centuries. Saturday, at 3 P.M. Professor Odling on Hydrogen and its Analogues.  
STATISTICAL SOCIETY.—Tuesday, February 16, when a paper by Mr. Horace Mann, 'On the Cost and Organisation of the Civil Service,' will be read.  
SOCIETY OF ARTS.—Wednesday, February 17, at 8 P.M.  
ROYAL BOTANIC.—Saturday, February 13, at 3.15 P.M.  
ROYAL ASIATIC SOCIETY.—Monday, February 15, at 3 P.M.  
ENTOMOLOGICAL SOCIETY.—Monday, February 15, at 7 P.M.  
SOCIAL SCIENCE ASSOCIATION.—Monday, February 15, at 8 P.M.  
METEOROLOGICAL SOCIETY.—Wednesday, February 17, at 7 P.M.

**PUBLISHER'S ANNOUNCEMENT.**

Advertisements cannot be received for insertion later than 2 P.M. on Thursdays.

Temporary Office, 4, Monument Yard, London.—GILBERT WOOD, Publisher.

**THE GAZETTE.**

**PARTNERSHIPS DISSOLVED.**

Kidd and Bourne, Birmingham, ornamental tube manufacturers; J. W. Brown and J. Harris, Upper Berkeley Street, Berkeley Mews, and Croydon Street, Bryanston Square, furnishing ironmongers; Hallam, Brothers and Co., Middleborough, wood planers; Johnson and Co., Gildersome, near Leeds, brickmakers; W. H. Ridgway and E. Belleruche, tile manufacturers, and Ridgway and Belleruche, London, commission agents; J. Glaholm and Sons, Newcastle-upon-Tyne, plumbers, as far as regards J. P. Dlaholm; R. Goodear and Sons, Manchester, timber merchants; H. Tidswell and Co., Queensbury, or elsewhere, Yorkshire, masons; F. Hutobinson and T. Evans, Caergrwle, Flintshire, and elsewhere, timber merchants; Pettifor and Nntt, Devonshire Terrace, Blake's Road, Peckham, builders; Fox, Walker and Co., St. George, near Bristol, engineers, as far as regards J. K. J. Hood.

**BANKRUPTS.**

William Bouchard, late of South Street, Bethnal Green, cabinet-maker, Feb. 22 at 12; Robert Collins, Alfred Place west, Kensington, bricklayer, Feb. 22 at 12; Henry C. Green, Featherstone Street, cabinet-maker, Feb. 26 at 12; Robert Edward Hatch, Carahalton, bricklayer, Feb. 25 at 2; Richard Jenkin, Clark's Place, and Grange Road, Dalston, carpenter, March 1 at 12; Thomas Roper, Leytonstone, carpenter, March 1 at 11; Henry F. Simmonds, late of Low Leyton, carpenter, Feb. 25 at 1; G. Ashley, Elgin Terrace, Maida Vale, builder, Feb. 17 at 1; W. B. Beaumont, sen., William Street, Pimlico, builder, Feb. 17 at 11; Benjamin A. Jackson, Blundeston, Suffolk, builder, Feb. 24 at 2.

**TO SURRENDER IN THE COUNTRY.**—George Hill, Motley Moor, Derbyshire, fire-brick manufacturer, March 3, Sheffield; James Hurrell, Ballingdon, builder, Feb. 20, Sudbury; Jesse and John Lacey, Birkenhead, builders, Feb. 24, Liverpool; Richard Martin, Darlington, builder, Feb. 20, Darlington; Jacob Stock, Weston-super-Mare, builder, Feb. 19, Bristol; J. Hunt Whitehead, Marke, Rasen, builder, Feb. 26, Market Rasen; R. Ibbetson, Witton, near Blackburn, builder, Feb. 16, Manchester; Francis Edward Smith, Gillingham, builder, Feb. 19, Rochester.

**TENDERS.**

Tenders for Workhouse at Edmonton for the Guardians of the Strand Union. W. S. Cross, Architect. Quantities by Messrs. W. S. Cross and Alfred Cross.

	Extra for Burlin bricks.
Patman & Fotheringham	£48,250 0 0
Newman & Mann	48,235 0 0
Ball & Russell	48,008 0 0
Gammson & Sons	47,917 0 0
Myers & Sons	47,765 0 0
Jackson & Shaw	47,338 0 0
Henshaw	46,500 0 0
Bull & Son	46,106 0 0
Phillip	46,100 0 0
Webster	46,000 0 0
Perry & Co.	45,857 0 0
Higgs	45,678 0 0
Powell	45,445 0 0
Jno. Kirk	45,000 0 0
Blackmore & Morley	44,950 0 0
Sewell & Son	44,850 0 0
Manley & Rogers	44,000 0 0
Macey	43,997 0 0
Wignmore	43,973 0 0
Howard (accepted)	43,800 0 0
Hill, Keddell & Waldram	42,777 0 0
Cooper & Cullum	42,460 0 0
Hart	41,390 0 0

**LOUGHBOROUGH PARK, BRINTON.**—For Nine houses. Mr. Alfred R. Pite, Architect.

	Market.	Grills and Gates.	Butchers' Stalls.	Total.
Laidlaw & Son	£11,760*	£3,838	£1,265*	£16,863
Hill & Smith	19,311	4,459	2,556	26,325
Coalbrookdale Co.	19,744	2,785*	1,554	24,083
A. Handyside & Co.	17,304	4,608.	1,726	23,636
E. Bellhouse & Co.	17,413	3,874	1,990	23,277
St. Pancras Iron Works	19,678	3,805	2,512	25,995
Jas. Haywood & Co.	16,244	3,683	1,535	21,362
Horsley & Co.	13,350	3,250	1,400	18,000

**BRISTOL.**—For the erection of a Granary, for Messrs. Wait & James, Welsh Back. Messrs. Fenton & Gough, architects. Quantities taken out by Mr. Clark:—

	GENERAL TENDERS.
Heal	£8,319 0 0
Brook	8,300 0 0
Davis & Son	7,925 0 0
Wilkins	7,820 0 0
Somerville	7,672 0 0
Thorn	7,666 0 0
Kingstone	7,637 0 0
Marquiss & Munro	7,500 0 0
Baker	7,481 0 0
Foster	7,399 0 0
Warburton	7,300 0 0
Diment	7,270 0 0
Stephens	7,047 0 0
Sanders	6,998 0 0

**MASONS' WORK.**

Cowlin	£3,823 0 0
Storkey	3,825 0 0
Flower	3,571 0 0
Wilkins	3,300 0 0
Bevan	3,296 0 0
Kingstone	3,284 0 0
Stephens	3,250 0 0
Thorn (accepted)	3,100 0 0
King	2,600 0 0

**CARPENTERS' WORK.**

Low	£2,875 0 0
Hatherly	2,879 0 0
Heal	2,717 0 0
Harris	2,714 0 0
Easterbrook	2,695 0 0
Davey	2,691 0 0
King	2,400 0 0
Sanders	2,483 0 0
Humphries	2,230 0 0
Somerville	2,115 0 0
Brooks (accepted)	1,851 0 0

**SMITH AND GASFITTERS' WORK.**

Edbrooke	£1,295 0 0
Priest	1,209 0 0
Harris (accepted)	1,191 0 0

**SLATING, PLASTERING, PAINTING AND GLAZING.**

Cowlin	£460 0 0
Levis	429 0 0
Bevan	410 0 0
Hill (accepted)	359 18 0
Tucker	351 16 0

**PLUMBERS' WORK.**

George	£235 0 0
Vesey	188 0 0
Burke	175 0 0
Slade	134 10 0
Tuckey	120 0 0
Lear	110 0 0
Palmer	109 0 0
Osborne	105 0 0
Lear (accepted)	100 0 0

**LIVERPOOL.**—For Offices, Victoria Street. Messrs. Picton, Chambers & Bradley, architects:—

Roberts & Robinson	£6,348 0 0
Henshaw	6,180 0 0
Burroughs & Son	6,174 0 0
Jones & Son	6,141 0 0
Culle	6,114 0 0
Urmson	6,055 0 0
Ray	6,035 0 0
Haigh & Co	5,996 0 0
Hughes (accepted)	5,996 0 0

**LIVERPOOL.**—For the erection of Lancaster Buildings, Tithebar Street, Liverpool, for the Liverpool Financial Association. Messrs. Picton, Chambers & Bradley, architects. Quantities supplied:—

Campbell	13,042 0 0
Mullin	11,815 0 0
Hughes	11,700 0 0
Haigh & Co.	11,624 0 0
Jones & Son	11,534 0 0
Holme & Nicol	11,492 0 0
Rome	11,800 0 0
Nicholson & Ayr	11,270 0 0
Callie	11,170 0 0
Westmoreland	11,120 0 0
Urmson (accepted)	10,935 0 0

**MONMOUTH UNION WORKHOUSE.**—Messrs. Haddon and Payton, architects. Quantities supplied:—

McCann & Everal	£11,800 0 0
Slim	11,692 0 0
Diment	11,600 0 0
Wood & Son	11,470 0 0
Miles	11,325 0 0
Lawrence	11,300 0 0
Trow & Son	11,169 0 0
Welsh & Son	10,850 0 0
Longley Bros.	10,790 0 0
Bolt & Co.	10,680 0 0
G. & H. Webb	10,425 0 0
Moreland	10,313 0 0
J. & W. Bowers	9,950 0 0

**ASHFORD, DERBYSHIRE.**—For Restoration of Church. Messrs. Medland and Henry Taylor, Architects. Quantities by H. Breary.

Gyte and Thorpe	£1,195 16 5
J. Brown & Co.	960 2 10

**For Four shops at New Swindon, Wilts. Mr. T. S. Lansdown, Architect.**

Dyer	£2,615 0 0
Wheeler	2,530 0 0
Lovatt	2,517 0 9
Kimberley	2,400 0 0
Newcombe	2,370 0 0
Smith	2,300 0 0
Barrett	2,220 0 0
Phillips	2,218 0 0
Drew	2,214 10 0

**Tenders for Four Cottages for Mr. Fisher, Swindon. Mr. T. S. Lansdown, Architect.**

Wheeler	£807 0 0
Drew (of Highworth)	762 12 0
Dyer	725 0 0
Drew (of Chalford)	697 10 0
Newcombe	690 0 0
Barrett	558 10 8
Wiltshire	556 0 0

**Tender for Carpenters' and Joiners' Works for Four Cottages, and One Shop for Mr. T. Turner, Swindon. Mr. T. S. Lansdown, Architect.**

Barrett	£416 17 6
Phillips	408 10 0
Haggood (accepted)	305 17 6

**For the whole of the Trades for do.**

Wheeler	£80 0 0
Norris	750 0 0

**Additions to Mr. Sewell's House, Swindon. Mr. T. S. Lansdown, Architect.**

Kimberley	£556 0 0
Drew	543 0 0
Dyer	532 0 0
Lovatt	520 0 0
Barrett	479 6 0
Newcombe (accepted)	430 0 0

**For Re-building King's Arms Hotel, Swindon. Mr. T. S. Lansdown, Architect.**

Wheeler	£1,210 0 0
Dyer	1,200 0 0
James	1,198 0 0
Lovatt	1,136 15 11
Kimberley	1,100 0 0
Drew	1,077 0 0
Frampton	1,060 0 0
Barrett	1,058 10 4
Phillips	1,048 0 0
Newcombe (accepted)	1,025 0 0

**For New Shop Front for Mr. Ing, Swindon. Mr. T. S. Lansdown, Architect.**

Phillips	£52 0 0
Spreadbury (accepted)	51 10 0

**For New Stables for W. Forester, Esq., Malmesbury, Wilts. Mr. T. S. Lansdown, Architect.**

Weeks & Bowman	£221 0 0
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**For additions to Dwelling-house, do.—**

Weeks & Bowman	400 0 0
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**BALDERSTONE, ROCHDALE.**—For erection of a Church. Messrs. Medland and Henry Taylor, Architects.

T. Clay, Manchester	£9,060
Ellis & Hinchliffe, Manchester	8,517
Rogers and Booth, Gosport	8,471
J. Robinson & Sons, Hyde	8,350
John Thompson, Manchester	7,568
W. Storrs, Stalybridge	7,555
M. Foggett, Manchester	7,532

**APPOINTMENTS VACANT.**

**MALVERN.**—February 19.—Surveyor and Inspector of Nuisances. Total salary 200l. per annum, with unfurnished house, gas, and coal. Chairman of Local Board, Gt. Malvern.

**WATFORD, HERTS.**—Feb. 13.—Road Surveyor. Salary 120l. per annum, with allowance of 30l. per year for a horse. The Clerk, Highway Board, Rickmansworth, Herts.

**INDIA.**—July.—Forty Appointments in Engineer Establishment of Public Works Department in India. Mr. W. T. Thornton, Secretary, Public Works Department, India Office.

**COMPETITIONS OPEN.**

**ROYAL ACADEMY OF ARTS.**—National Gallery. For the best painting in Oil—or Model and Design in Painting, Sculpture, and Architecture. The Gold Medal and the Discourses of Presidents Reynolds, West, &c.; and for the best Copies of Drawings, Models of Life, the Antique in Landscape Perspective, &c. The Silver Medals, &c. November 1.

**ROTHERHAM.**—March 15.—For Plans, &c., for erecting a Public Hospital and Dispensary. A prize of 75l. is offered for the best design, 50l. for the second, and 25l. for the third. John Barras, hon. secretary, Rotherham.

**DOVER.**—Feb. 20.—St. Mary's Burial Board. Designs for laying out 94 acres, for the purposes of a new Cemetery. Premiums 50l. and 20l. G. Fielding.

**KINGSTON-ON-THAMES.**—March 1.—Design for new School and Master's Residence. Cost not to exceed 5,000l. F. Gould, Esq., Kingston-on-Thames.

**BRECON.**—March 1.—Plans and Estimate for Alterations of County Gaol. A premium of 30l. is offered for best plan. Edward Williams, Clerk of Peace, Brecon.

**CORPORATION OF MANCHESTER.**—ALEXANDRA PARK—March 8.—The Corporation invite landscape gardeners, surveyors, and others to send in designs in competition for laying out the Alexandra Park. Joseph Heron, town clerk, Town Hall, Manchester.

**CONTRACTS OPEN.**

**CITY OF LONDON.**—February 23.—For Stone Paving in Carriageways and Footways. Joseph Daw, Sewers' Office, Guildhall.

**ST. GEORGE, HANOVER SQUARE.**—February 20.—For Materials from March 25, 1869, to March 24, 1870. Mr. Joseph Henry Smith, Clerk to the Vestry.

**ST. GILES, CAMBERWELL.**—February 15.—For Repairing of Roads. Mr. Geo. Wm. Marsden, Vestry Hall, Camberwell.

**LONDON DISTRICT.**—Feb. 15.—Tenders for Repairs to Public Buildings. Mr. George Russell, Her Majesty's Office of Works, 12 Whitehall Place, S.W.

**ST. PANCRAS.**—Feb. 22.—For removing Coal Ashes, &c.; also for supply of Water Carts, &c. Mr. Chas. Worrell, 10 Edward Street, Hampstead Road.

**ST. SAVOIR'S DISTRICT.**—Feb. 17.—For supply and use of Water Carts. Mr. Herbert Sturmy, Board-room, Emerson Street, Bankside, S.E.

**MILE END, OLD TOWN.**—Feb. 17.—For making up Carriage Roads and Kerbing and Paving Footpaths. Mr. Thomas Price, Vestry Hall, Bancroft Road, Mile End Road.

**SHOREDITCH.**—March 1.—For Watering Roads in parish of St. Leonard. Mr. W. G. Davis, Vestry Clerk, Town Hall, Old Street Road.

**SHOREDITCH, March 9.**—For Masons' and Pavers' Work, &c. Mr. W. G. Davis, Town Hall, Old Street Road.

**SOUTHWARK.** St. George the Martyr.—February 22.—For supply of broken Guernsey Granite, Yorkshire Paving, &c., &c. Mr. Daniel Birt, jun., Vestry Clerk's Office, Vestry Hall, Borough Road, S.E.

**BRIGHTON.**—Feb. 16.—20,000 Red-wood Sleeper Blocks, 3,000 tons double-headed Iron Rails, and 600 tons Cast-iron Chairs. Mr. William Walker, Brighton Station.

**POPULAR.**—Feb. 23.—For Erection of new Offices. Mr. S. Jeffries Bath, 291 East India Dock Road.

**CHISWICK.**—Feb. 17.—For Constructing a 12-in. pipe Sewer, about 4,000 feet in length. Mr. W. J. Threearne, C.E., 58 Great Russell Street, Bloomsbury.

**CHELSEA.**—Feb. 15.—For Plumbers', Bricklayers', and Masons' Work, &c. Mr. Charles Lahee, Vestry Hall, King's Road, Chelsea.

**RHYL.**—February 22.—For supplying Valves and Special Pipes, also for casting and laying about 14 miles of Cast-iron Water Pipes. Rhyll District Water Companies' Offices, Clywd Street, Rhyll. See Advertisement.

**TOWN MALLING.**—March 11. For Maintenance and Repair of Roads. Mr. W. South Norton, Clerk to the Board, Town Malling.

**ROCHESTER.**—February 23.—For Maintenance and Repair of Roads. Mr. Charles Martin, Clerk to the Board, Strood.

**STAFFORD.**—March 1.—For Erection of New Stone Bridge, and taking down the old one. Mr. Robert Griffiths, County Surveyor, Stafford. See Advertisement.

# The Architect.

## CONTRACTS.



THE question already raised in these columns as to the mutual relations existing between Clients, Architects, and Builders, is one of the greatest importance. It is also one of the greatest difficulty. Three conflicting interests force themselves into an unwholesome prominence; and in a manner which at present has defied all attempts at entirely reconciling them.

The proprietor naturally wishes to get as much as he can for his money; and he may well be pardoned for being somewhat exacting and suspicious, if he sees in his architect no desire to keep within compass, or in the builder no intention of sticking closely to his contract.

The builder naturally desires to ensure his fair profits; and he may fairly complain if he sees an attempt made to enforce upon him unfair conditions.

The architect, if he has anyone's interests at heart besides his own, and desires at the same time to serve his client, and to act with even-handed justice towards the builder, has to encounter an amount of difficulty which is well nigh insurmountable; on account of the free and easy way in which the former often seems to think that a trifle can cost but a trifle, whilst the latter takes for granted that all work actually done is—regardless of every other consideration—fairly entitled to payment.

The opening of these columns to the investigation of questions which affect the interests of all generally, rather than to the advocacy of any particular interests or courses of action, will be, it is to be hoped, of real value. A little free inquiry into these relations can do no harm, and can hardly fail to be productive of much good.

It is impossible not to accept the general statement already put forth in the two remarkable articles which appeared in our issues of January 30 and February 6, followed as they have been by communications bearing on several sides of the question, as evidence of the existence of a *prima facie* grievance. Whether it is at all capable of redress, and by whom, remains yet to be proved. We should be sorry to deny the general reasonableness of the remedies suggested by a 'London Contractor,' supposing that we are content to regard the matter from only a single point of view. But there are two sides even to a round plum-pudding, and it will hardly satisfy us to criticise the *outside*, without making some attempt to examine the *inside* also. And in our present case the merits do not lie merely on the surface.

Supposing the client, the architect, and the builder, to be all equally high-minded, well-intentioned, competent, honest, and good-tempered, it is not often that a difficulty need arise. But if any of the parties concerned should be deficient in any one of these qualities, some unpleasantness or other is not unlikely to arise. And it is chiefly to meet such cases that restraints of law, and a better understanding of their respective responsibilities, are required by all the three, in order to protect the interests of any one of them quite as much as of the other two.

It is undoubtedly very hard upon a builder that he should be responsible for the fulfilment of his contract, if no money is forthcoming from the proprietor, or if the architect refuses to certify the fair value of the work done. That such cases, however rare, do occur is proved by a statement which we publish in another part of our columns, and they must be admitted as a real grievance. At the same time it is seriously to be questioned whether an easy remedy for the evil would not prove worse than the disease itself, by enabling incompetent or embarrassed men to make even a justifiable refusal the ground for tedious disputes, and the excuse for vexatious delays in carrying out a work.

In case of the insolvency of a proprietor, summary justice ought to be obtainable for the builder; and a bankruptcy clause applicable to the proprietor, giving the builder release from the contract, and a lien upon all materials delivered by him and unfixed, would be quite as justifiable as is the usual clause against the builder. The insolvency of a proprietor has on the other hand been known occasionally to have been brought about, or his position seriously crippled, by a builder obtaining the work by an unjustifiably low tender, with the deliberate intention of making up any deficiency by extra works. If such an one be sometimes caught in his own trap, and receive well-merited punishment, it might appear that no further harm would be done. But if we look deeper we shall see that an incalculable amount of injury has been done to the building cause generally, by loss of credit amongst large bodies of deserving persons, by the creation of unworthy suspicion, and by the rousing a mutual, though it may be only tacit, want of confidence amongst all parties concerned.

This want of confidence, moreover, is nowise diminished by other facts which occasionally crop up, tending in the same direction. As for example, it is no exaggeration to say that in the case of a special stipulation as to agreement for extras beforehand, a builder, even of good standing and of honest reputation, has been known to value the work shown in a drawing at over 200 per cent. more than it was fairly worth, that is to say at more than three times its

fair actual value, to try and make up for his own ignorance or rashness in his original undertaking.

If such occurrences justify caution, and even create distrust on the part of architects and employers, it is quite possible that the recklessness, harshness, or incompetence of an architect, or the unreasonableness of an employer, may create similar suspicions and want of confidence in the contractor; and he, too, may no doubt at times fairly complain that the real basis of his contract, the bill of quantities, is frequently found defective, after having been offered for his acceptance in a way which can best be described by the homely simile of buying a pig in a poke.

The interests of the public, that is to say of the employer, must not be overlooked in this discussion, the more so that no correspondent has yet offered himself as the representative of that class which sets the whole building machinery in motion, and which afterwards has to pay the bill.

The main question often will be, not at all whether certain work is fairly worth a certain amount of payment, but whether a committee or a private gentleman embarking in an undertaking could be, under the conditions proposed by the contractors, kept so strictly informed beforehand of any extra liabilities as to enable him to judge whether he will be justified in incurring them, or able to meet them. As it has been urged on the one hand, 'that the contractor must not be supposed to know all the details of the work sufficiently to detect at once from a working drawing that it is in excess of the agreement, and that, if the builder unwarily carries it out, no charge can be made, or that an employer can repudiate the payment of work for which only a verbal order may have been given;' so, on the other hand, the architect can hardly be expected to take in at a glance that the work exhibited in a detail is in excess of what was agreed upon. How difficult it is to estimate the value of work is patent to the whole world, for we find in every list of tenders variations of 20, or 50, or 100 per cent. made in the estimates for certain works, according to certain accidental circumstances of person, time, or place.

The present customary stipulation that no extras shall be allowed unless an order in writing be given at least secures this, that no extra liability is incurred without the architect's becoming aware of the fact, and having the opportunity of endeavouring to come to some definite agreement as to the cost. And, in favour of agreement for extras beforehand, it may be safely assumed that it is far easier to avoid a dispute by a definite understanding previously, than it is to settle it afterwards by recrimination or by litigation.

Indeed, it is evident that, in these days, unless an architect is scrupulously careful, as well as thoroughly competent (and very often even then), he stands in great danger of coming into collision with his client or his builder, or with both of them, merely upon the grounds enumerated above. And he (equally with the other two) desires and deserves protection, as well from the builder's over-ready confidence or recklessness, or his superiority to such subliminary matters as pounds, shillings, and pence during the progress of a work, as from the limits exacted by a client. That is to say, he must have some such reliable safeguard as at present exists against the danger of what he intends and issues as working drawings being interpreted by the builder as orders for extras.

The dutiful nephew's considerate remembrance that 'Nunkey pays for all,' so useful in justifying his extravagance, certainly seems sometimes to meet its counterpart in many a builder's conception of the profundity of a proprietor's pocket. He needs not concern himself to represent to the architect that a work is more elaborate than in his opinion was intended. His province is only to do the work, and to take care that the work is paid for when done.

Let us not suppose, however, that undue advantage is commonly, or consciously, taken of any opportunities for increasing their claims which lie open to them by the great class of high-minded builders. We simply point out a difficulty sometimes met with, and one of equal magnitude, of equal importance—let us add, one we hope of equal rarity, with that set forth by writers on the other side—a difficulty requiring to be met, and dealt with, in any mutual arrangement between architects and builders which may be attempted. For, if the principle be acknowledged that a drawing alone shall be evidence of an order for extra work, and that there can be by no possible means any certainty of arriving at a certain understanding as to extras as the work proceeds, the door will be opened wide to the extortion of the unscrupulous.

The above are only some of the aspects of the question; we have only just named bills of quantities, we have not even so much as mentioned the arbitration clause, or the strike clause, and have not glanced at the grave question of how far any material change in the present plan may affect the position of the architect as an artist. So wide a question demands more space for its discussion than the limits of a single article, and we shall hope to return to it.

One thing more must be added. We trust it will be borne in mind that it is impossible to provide against every contingency and peculiarity of circumstance by any general series of stipulations or conditions of contract, however well-considered. We have endeavoured to show that if the conditions of contract now customary be altered in favour of the contractor, there is great danger of their being liable to abuse to the damage of the employer. The clearest evidence exists that in the majority of cases the present system when in good hands works excellently well for all parties; and we deprecate any change so great as would render the operation of a contract when in bad hands more injurious than it can be made at present.

## OUR RAMBLER

ALONG THE SITE OF THE THAMES EMBANKMENT.

BY the unusual good fortune of a series of minor disappointments, our Ramble down the left bank of the Thames, from Westminster to Blackfriars, was deferred till one of those rare and charming days when the sun looks down smilingly on London through a bright and newly washed atmosphere. A series of searching and angry gusts, hurrying as if to make up for some inexcusable loss of time in their long journey across the Atlantic, had routed out every atom of mist, and fog, and vapour, from its wonted lurking-place, and whirled it away towards the Channel. Pelting showers, of almost semi-tropical urgency, had washed roof, and wall, and pavement, and lent to the newly-stimulated activity of the scavengers a degree of credit that was not altogether due to their exertions. Over Westminster, thus rinsed from smoke and rough-dried from visible damp, the sun looked down as it rarely shines through our atmosphere. The great city crowding round the Thames reflected the sunshine, and seemed to offer the mute promise that, if the architect were allowed to work by no rules but those of his own art, She would become, in a few years, one of the most imposing capitals of Europe.

The careful selection of the tint of the granite which forms the noble quay wall has much to do with the brilliancy of the scene. Not extracted from one quarry, or even from one district, Scottish, Cornish, and French granites, from Dalbeattie, Ross of Mull, Hayter, Penrhyn, Morlaix, and Dinan, find their place in the long esplanade; but the harmony of tint is for the most part very successfully maintained.

You may take that walk on at least three hundred days out of the three hundred and sixty-five, and come each time to the conclusion that a picture of the scene, drawn on the brightest of the odd sixty-five, is an exaggeration. Every gilded nut and enrichment of the Charing Cross Railway Bridge gleamed in the sunlight, and the great length of the line of iron lattice, the apparent good proportion of structure to duty, and the constant line of trains puffing and crawling behind the reticulations of the girder-parapet, were clothed with a certain indescribable air of grandeur. The whole structure asserted its claim to be regarded as a great triumph of human skill. Passing eastward, the noble façade that does honour to the taste of Sir William Chambers struck the eye with a new force. A spire rose from each end of the pile, lending a strange beauty to the sky outline; two of the Strand churches falling accidentally into the exact position which crowned either end of Somerset House with their graceful steeples. Eastward, the tower of St. Dunstan's rose like that of some Flemish cathedral; St. Bride's soared far above it towards heaven; and towering supreme over all rose the majestic dome. Let the space between Somerset House and the Temple be filled by a building of appropriate grandeur, and we may challenge Europe to display such a noble architectural *coup d'œil*.

The Embankment from Westminster to Blackfriars was originally divided into three contracts. Of these, two are now complete, so far as regards the wall and the filling up of the area. The third, reaching from the verge of the Temple to the bridge in process of construction, is now in the condition in which it is at once most interesting and most instructive to view it. And our Rambler had the advantage of being piloted over the works by a courteous and intelligent Scotchman, who rules over granite and over mud; over masonry, that is to say, and over excavation—*quocunque nomine gaudet*;—one of those men who have both their head and their heart in their work.

A man need have that vivid remembrance of the state of similar works a quarter of a century ago which no casual acquaintance with the subject can impart, to appreciate the amount of skill and of thought that has been brought to bear on the arrangement of the works of this contract. Large experience leads to a conclusion the reverse of that which is arrived at by the uninitiated visitor. The more simple everything seems, THE LESS THERE IS TO SEE, in shape of variety of work, queer shifts, original expedients, picturesque incongruity and variety of parts;—the more evidence is there of patient, provident, systematic thought in planning and in directing. It is striking to observe how simple a really well managed piece of work looks, and how infinitely various and complex is the aspect of one carried on under the ancient and time-honoured 'rule of thumb.' The best testimony to engineering or architectural skill paid by a person not familiar with the conduct of works may be couched in the expression 'Is this all?'

This remark might be applied with some justice to the central labour of the genius of the place. In all riparian work, in many works of deep excavation, and, most notably of all, in all wet tunnels, the hand-to-hand struggle of the engineer with his great, ever present, enemy, water, is everywhere apparent. Two or three pumps here; an Archimedean screw there; the bucket and the scoop in another place; everywhere leakage, everywhere exertion, everywhere anxiety, everywhere water—such is our long and time-honoured experience.

The contractors of No. 3 Contract have taken a leaf out of another book. About the centre of the enclosed area is perched, on piles and on staging, a sort of ark or wooden booth. Within its open-faced shelter, a fourteen horse-power steam-engine is steadily at work, under charge of a grave and responsible-looking engineer. This engine not only discharges all the varied and painful functions of pumpers, and scoopers, and water men without end, but it seems to laugh at its work. Anything short of a fresh inroad of Father Thames is within

the power of this engine. Its immediate coadjutor in the task is a simple and powerful chain-pump, bearing the name of Murray as the inventor, which is the most admirably adapted machine for such a purpose that we have met in any of our rambles. A well has been sunk some 45 feet deep, into which the whole enclosed area drains. A vertical trunk is placed in this well, and an endless double chain, carrying a series of floats, is kept in constant revolution by the steam-engine. As the chains descend, the float-boards, which are attached by their edges, hang perpendicularly, and are hardly seen; but when the ascent commences, each float, in its turn endeavouring to fall in the opposite direction, pulls taut two diverging and supplemental pieces of shorter chain, attached to the main chain at some four or five feet distance from the joint that bears the float, by means of which a horizontal position is maintained during the ascent. As the chain is driven with a considerable velocity, the rising trunk is thus occupied by a series of ascending valves, not fitting very tight to the sides, but bringing up, with very little loss of water, a constant stream of a muddy mixture, in which mud, chips, wreck, or anything smaller than a young donkey, is borne up with irresistible force. A stream of water, thick with mud, but as voluminous and as rapid as that of the head water of the Thames itself, rushes down a neat wooden conduit from the delivery point of this most efficient chain-pump. The drainage of the works is completely within the power of the machinery.

So much, indeed, is this the case, that the contractors are not content that the pump should only discharge its primary function of raising water. They make it perform the work of the navy. It acts as wheelbarrow, as inclined plane, and as hoisting power, whether human or mechanical. For Father Thames is as munificent in his deposits as is the sacred Nile itself; and on his late impromptu visit to the works, when he entered, like a Roman Emperor honoured with a triumph, through a breach made for that express purpose in the walls, he left a very weighty memorial of his arrival in the shape of a thick bed of mud over the whole enclosed area. To dig, and fill, and harrow away this mud would be a matter of considerable cost; and the question would arise what was to be done with it when it had been removed from the surface, and more or less perfectly dried.

The chain-pump disposes of all this mud. It does so thus:—In the gutters and channels through which the surface drainage of the Embankment area is conveyed to the pump-well are stationed some thirty labourers, plunged up to their hips in enormous boots, and armed with implements which are colossal likenesses of the ordinary road-scraper. With these mud-compellers the men in boots constantly stir and turn the sludge into the channels and in the channels, and keep it in a state of suspension, or more than semi-fluidity, until it comes within the grip of the mighty pump itself. Then up and out it goes, were it ten times as black. This method of pumping up excavation is an admirable proof of the excellence of the machinery employed.

The area which is kept dry by this powerful machinery is protected from the entrance of the tide as follows:—A regiment of steam pile engines has been provided. Each of these machines looks, at a little distance, like one of our old acquaintances by means of which five or six men, in as many minutes, were accustomed to wind up the monkey till the action of the jaws on the nippers released the ponderous block, and it fell, with a rush, and a thump, and a rattle, on the head of the subjacent pile. But on examining these forty-two feet pile engines, they prove to be much stronger than their ancestors in their bracing and construction. They support tier after tier of aerial stages, giving free access by means of a ladder to every part of the endless chain, which circulates like that of the pump, motion being given to the driving wheel by a small inclined cylinder, like that of an American locomotive, fixed on the foot of the engine, and supplied by steam from a convenient boiler. The ran, or monkey, thus raised is rather long in proportion to its cross section, and weighs twenty-five cwt.

At intervals of some 17 feet 6 inches apart, the guide or waling piles are first driven, by these steam pile engines, in the line of the outer row of piling. Walings are then bolted to these piles in the usual manner, being whole timbers, placed horizontally, in pairs, so as to keep all the intermediate piles in line. These intermediate piles are also of whole timber, and, like the gauge piles, 45 feet long. They are driven some five or six feet into the solid clay below the gravel bed of the river. A row is driven, as closely as possible, between each pair of gauge piles; and when the two lines, proceeding from each end, meet in the middle of the space, a wedge pile is driven to key the whole as firmly as possible together.

Five feet within the outer line of piles is driven an inner row; and the space between the two wooden walls is filled up solid with puddle, made from the London clay. A third, a fourth, and a fifth line of buttress piles are driven, so as to correspond with the gauge piles; and horizontal and inclined struts form the whole into a solid bulwark against the pressure of high water in the Thames.

One additional line of these buttress piles has been driven where the breach took place. The system of struts had originally abutted against the fore shore: but the fore shore itself proved rotten, and unable to resist the pressure; and, yielding to the weight of an unexpectedly high tide, allowed a portion of the puddle dam to be blown in, and a further portion to be wrenched and twisted inwards.



No workman was injured by the accident. The piles which were only bent inwards were forced back into place by the simple and ingenious method of driving a whole pile at about 14 inches distance shoreward of the outer buttress piles, strutting and propping this new pile from the inner ones, and then driving wedge piles of half timber between the bent pile and its new neighbour. The regularity of the outer dam has thus been fully restored.

At the end of the work, which promises very fully to exercise the ingenuity of the architect, and where much care and skill will be requisite to avoid something unsatisfactory, the outer line runs shoreward at an angle till it joins the abutment of the new bridge. The piling here is single, the puddle wall being dispensed with, and the piles being caulked with tar and oakum. It is proposed that the wall of the Embankment should take a sort of ogee curve at this eastern extremity. It seems a pity that it does not run on, so as to make a land arch of the northern opening of the bridge.

The handy application of the steam-engine to replace the Irish labourer of the last generation is not limited to the pump and to the pile engines. A set of steam cranes, running, like the pile engines, on a temporary railway, raise and lower all that is requisite over the edge of the *enceinte*. The same power, applied to a well constructed traveller, is also set to work to raise, transport, and lower the sharply arched granite blocks, which are sent ready dressed from the quarries, to form the quay wall.

The care of the clerk of the works in the preservation of these arisres demands notice. The granite quarrymen are, for the most part, accustomed to insist on working the stone in the quarries; not merely scabbling it out, as is the practice at Bramley Fall and many other quarries, but actually working it, bed and face. Of course the merchants are responsible for delivering this stone with its arisres perfect; but a very limited experience in rambling over public works is sufficient to convince anyone of the difference between what is contracted for and what is. Constant mishap, quarrels, delay of work, and final use of stone not exactly satisfactory, but which there is no time to replace, keep engineer, contractor, clerk of the works, and foreman of masons in continual hot water. Expense, loss of time, loss of temper, and loss of excellence in the work are avoided in this instance by an excellent expedient. Holes are bored in each vertical bed, near the face, and plugged with wood. Rough slabs are nailed to these plugs, so as to surround each stone with a skeleton packing case, and thus keep every aris perfect. The first cost is in this instance the least cost, and this method should be insisted on by all who employ granite dressed at the quarries.

For the details of the solid and substantial wall of concrete faced with granite, the foundations of which are now about to be sunk within the puddled dam, our Rambler had to consult the drawings. Nor could he fail to remark the very great completeness and clearness of detail given in the atlas which contains the engraved designs of Mr. Bazalgette; the soundings of the river, taken across the area to be enclosed, and out to some depth beyond the face of the quay wall; and the survey of the riparian property. It would have rendered this set of drawings of yet more permanent value if the soundings had been continued across the whole bed of the Thames.

The foundations of the quay wall are to be sunk to the depth of 32 feet 6 inches below Trinity high-water mark, where they will rest in the solid clay. As the face of the wall has a curved batter, the width of the concrete varies, the foundation of the inner portion of the wall not being carried so low as that of the outer or riverward half. The extreme width of foundation filled in with concrete may be taken at about 20 feet, and the mean thickness of the wall at 16 feet. Granite bonders, 3 feet long, tie the ashlar of the facing to the entire mass.

Through this concrete wall, parallel with its course, will run two continuous openings. The lower one is a circular drain or culvert, of eight feet three inches diameter, intended to convey the intercepting sewer. The upper one, with a semi-circular crown, is a subway, intended for the conducting, and for the means of having access to, the pipes of the gas and water companies, and the wires of the Electric Telegraph. A very similar arrangement is made in the Holborn Viaduct. It ought to be imperative in every metropolitan street, although our Rambler was told that the gas and water companies are far from taking to it kindly. The privilege of being able to render any thoroughfare impassable at will, and to waste the money, as well as the time, of the public, by independent up-pickings of a road as soon as it has been put into decent order, is one which the companies will only relinquish when compelled. People are so unreasonable! What is the convenience of three millions of Londoners compared to the maintenance of the prescriptive rights of a board?

A Ramble is only half instructive if it lights upon nothing but what is admirable. Failure, rightly understood, is the surest pilot to success. Thus where there is so much that is excellent, criticism may be allowed a full hearing.

Would it not have very well repaid the able engineer of this noble work if he had asked some architect of the first eminence to look over the purely architectural details? If this had been done, a few would have been altered, to the very great advantage of the *ensemble* of the work. Gothic mouldings would not have been allowed to intrude themselves into work of an Italian character. The *wooden* treatment, which splay off the corners of some of the riverward piers, would have been avoided. So would the sharp vertical line, which inharmoniously replaces a regular return, in the pier by the steps; and

above all, the disproportionately heavy cornice, which the river archway by the old Temple pier seems constructed solely to carry, would have been replaced by some very different feature. Our Rambler sketched the archway. Seen endways, it assumed, in his note book (owing to some uncertainty of touch), the guise of a Welsh milkmaid, in a man's hat, with a yoke on her shoulders. Seen from the shore, it has neither the character of utility nor that of beauty. The upper block of masonry is disproportionately narrow, and seems placed merely to weight the crown of the arch. The arch itself, if opening on a flight of steps or on the level of high water, would be appropriate for a river access; but any passage through it is interdicted by a stone balustrade, the balusters of which and of the steamboat piers too much resemble turned work to be appropriate in granite, and the obstructive nature of which is brought to a maximum by a pier in the centre. A moulding intended to intimate the recurrence of similar piers at the sides looks like a church credence table. We cannot but think this gateway, in the arrangement of which constructive purpose has no part, a mistake. The features, and eyebrows, and water-logged beard of Father Thames on the key-stone do great honour to their sculptor, Mr. Farmer. But we regret his crown of bay: not one of the hoary senate of Sea and River Gods that sit, each on his throne, in the temple of memory, bore such a tiara. From the tridentine crown of Neptune, to the lobster claws and frill-like comb of fins of a bronze Proteus in the British Museum, under every kind of wreath, of flag, or water ranunculus, or sea or river weed, we can find no example for presenting Thames in the chaplet of a conqueror. The landing-stages, the idea of which is taken from the great one at Liverpool, is not yet launched on its pontoons, so that our Rambler returned to his starting-point without having gazed on the features that frown on the riverward key-stone of the Temple Arch.

THE BRIDGES ON THE THAMES.

IT is no exaggeration to say that so many well-designed bridges as those that span the River Thames in the four miles from London Bridge to Chelsea are not to be found in an equal length in any part of the world. In that short distance there are two masonry bridges, three of horizontal girders, six of wrought or cast iron arches, and two suspension bridges. Some of these are amongst the best of their kinds, but all are deserving of attentive study. They have been already partly described, but it is in different volumes, for, as far as we know, there is no complete description of the entire to be found in one place. This want we hope we may be able to satisfy.

LONDON BRIDGE.

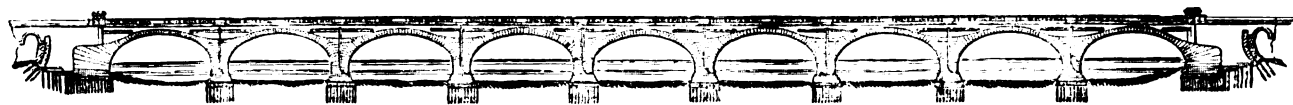
Old London Bridge, for which this was substituted in 1831, had lasted from 1209. It consisted originally of twenty arches of different sizes, the largest being 35 feet span. The piers varied in thickness, the one in the centre of the river (over which stood a chapel where the architect was said to be buried) being as large as 35 feet. On the roadway stood two rows of houses, with a space between of about 20 feet. As the traffic of the river increased, it was found that the small size of the arches and the mass of masonry in the piers offered great obstructions to it. From time to time various remedial alterations were suggested. Sir Christopher Wren advocated that eighteen of the arches should be thrown into nine; and long afterwards, in 1759, a step towards this was made by the removal of the large central pier, and the construction of an arch 70 feet span. At the same time the houses on the bridge were taken down. In 1801 Telford proposed to erect a cast-iron arch of 600 feet span, but after ordering an investigation by the ablest scientific men of the day, Parliament considered the project too bold to be approved of. The need for an enlarged waterway being every day rendered more apparent, after a lengthened inquiry, a Bill was passed to erect a new bridge, and Mr. Rennie was appointed the engineer. The practicability of altering the old bridge to answer all requirements was even then maintained by many eminent men, the great Telford holding the opinion that, at least, the piers would serve for the new arches. It was intended by Parliament when the Bill was passed that the new bridge should be on the site of the old one (a temporary bridge being erected for the traffic), with Fish Street Hill as the approach on one side, but the Corporation directed its construction 180 feet westward. This made new approaches on both sides indispensable, and the bridge was far advanced towards completion before an Act was obtained to construct them, as well as to legalise the adoption of the new site.

The increased and improved waterway of the bridge may be shown thus:—

	Old Bridge.	New Bridge.
	Feet.	Feet.
Obstruction-piers at high water . . . . .	407	92
"    "    low water . . . . .	700	
Waterway at high water . . . . .	524	690
"    "    low water . . . . .	231	

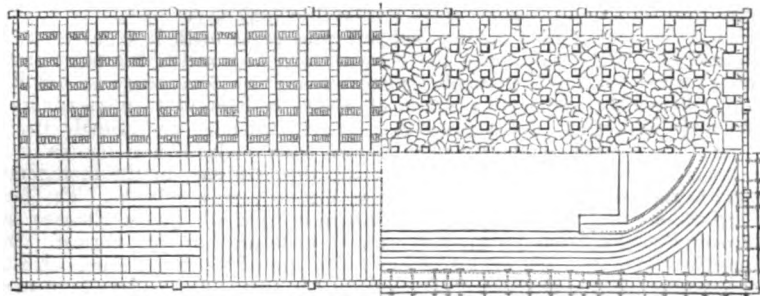
The first pile of the cofferdam of the south pier was driven on March 15, 1824; the first stone on the platform was laid by the Lord Mayor on June 15 (the company being comfortably seated in the cofferdam); and the bridge was opened by the King with much ceremony on August 1, 1831. From the drawings and the abstract of the specification (which is almost a treatise on building stone bridges) all the details of the construction are so evident as to render any further remarks on that part of the subject unnecessary.\* A settlement of 9 inches in the centre arch and piers and

\* For the drawings and permission to make an abstract of the specification in Cressy's *Encyclopædia* we are indebted to Messrs. Longmans, Green, Reader, & Dyer.



LONGITUDINAL SECTION.

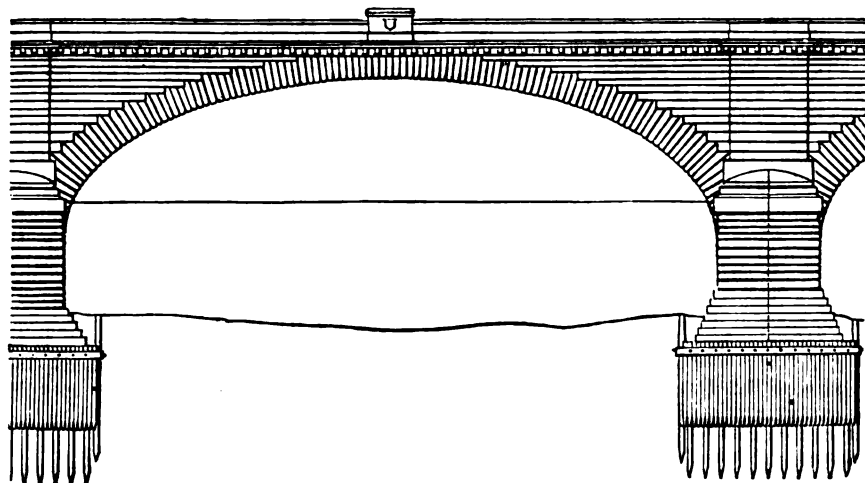
No. 2, showing Transverse Sills and Brickwork. | No. 1, showing Piles and Filling.



No. 3, showing Longitudinal Sills and 6-in. Planking.

No. 4, showing Masonry.

PLAN OF FOUNDATIONS OF PIER.



ELEVATION OF CENTRE ARCH.

(152 ft. span; 37 ft. 10 in. rise. Depth at crown, 5 ft. 0½ in.; at springing, 10 ft.)

8 inches in the others were allowed for by the engineer, but he stated that not more than 2 or 3 inches was observed. It was, however, maintained by some of the opponents of the bridge that the piers had settled more on the east side, to an extent estimated from 4 to 12 inches. An inquiry was directed by the House of Commons to be made on the subject, but it was found impossible to ascertain the extent of the deviation, or whether it arose from actual settlement of the masonry or from an inclination given to the platforms to facilitate drainage.

As specimens of architectural engineering Rennie's bridges have been never surpassed. There is a severe beauty and grandeur about them too often absent from modern structures. The ornamental portions seem to be there of necessity, and a cube foot of cut stone could from no part be removed without detriment. There is so little intricacy in their construction that few examples could be found better suited to engineering students, or to which it is easier to apply ordinary formulæ.

#### ABSTRACT OF SPECIFICATION.

**Cofferdams for Abutments** to be of circular form, of best Memel, Dantzic, Riga, or Stettin fir. Piles to be whole timbers, none less than 12½ inches square. Inner row to be driven not less than 10 feet, and outer 8 feet, below lowest part of foundations; both rows to stand 5 feet above H.W.M. Both rows to be secured with three rows of double waling 12½ inches square, having 2-inch wrought-iron screw bolts 10 feet apart, with nuts and cleats 3 feet long by 12½ square. An outer row of piles to be driven 6 feet from main row, of similar timber, and to 8 feet below foundations; to have three rows of double walings as before, with 2 in. screw-bolts passing through the three rows. Piles to be planed and straightened on edges; joints of inner rows to be made watertight with pitch; piles to have transverse and diagonal bracings of half timbers fitted and spiked; to be hooped and shod with wrought iron; spaces between piles to be filled with tough, well-beaten clay puddle to 2 feet above H.W.M. Interior of dam to have main transverse and longitudinal bracing of double whole timber, scarfed, strapped, and bolted. A tunnel 3 feet square to be placed towards centre of dam and secured to the piles; to have a sluice, and joints to be caulked.

(Cofferdams for Piers were of elliptical form, and similar in character to the above.)

**Foundations.**—Excavation for *abutments* to be to a depth of 34 feet 6 inches below H.W.M. at front and 25 feet at back of platform.

*Side Piers* to be excavated, that top of platform shall not be less than 40 feet below H.W.M. *Middle Piers* to be 43 feet below H.W.M. After the

excavation, piles 20 feet long by 12 inches diameter are to be driven in rows 4 feet apart. Those under piers, perpendicular; under abutments, at right angles to inclination of foundations. Piles to have wrought-iron shoes weighing 35 lbs. each, and hoops=30 lbs. After piles are driven, their heads to be cut off level, and the earth between is to be excavated for 9 inches below pile heads, and space filled with Kentish rag stone, well beat down and racked with gravel and lime screenings of one part lime to five parts gravel. Sills of beech, elm, or fir, not less than 12 inches square, are to be spiked on pile heads in *transverse* direction of foundations. Spaces between to be built up with brickwork, with square blocks of stone at extremities. Above these sills other rows are to be laid in *longitudinal* direction of foundations, of similar dimensions and materials, fastened with 18-inch spikes. Spaces between to be filled with Bramley or other stone in mortar grouted. The whole of the foundations to be then covered with 6-inch planking bedded in mortar and fastened to sills with 12-inch spikes, forming a platform for the masonry. Along fronts and returns of abutments, and around piers, sheet piling to be driven to a depth of 12 feet below top of platforms for abutments, and 14 feet for piers. Piles to be 6 inches square for abutments and 12 inches square for piers, and to be hooped and shod.

**Masonry** of abutments and piers to springing of arches to be ashlar, in courses not less than 15 or more than 24 inches in front. Exterior stone for an average depth of 5 feet 6 inches, and to within 3 feet of springing, to be of granite; interior of one half Bramley Fall and remainder of Painshaw or other approved stone. To be header and stretcher courses alternately; headers not less than 4½ feet long, and average breadth of 3 feet. No stone to be less than 2'3 wide. Stretchers not less than 4 feet long. Backing to be laid in headers and stretchers alternately, headers being opposite stretchers in front. Double joggles to be used where required. Exterior course to be smooth and fine hammer-dressed on face. Horizontal beds to be fine-dressed and rusticated 2 inches each way; upright joints to be plain, straight, and fine-dressed for at least 15 inches inwards; remainder of stone to preserve its full dimension. All the backing of each course to preserve an equal thickness. Interior of stair walls to be well-burnt stock bricks; exterior, to level of river bed, of Bramley Fall or other stone, in courses not less than 15 or more than 24 inches thick; above bed of river of granite as before.

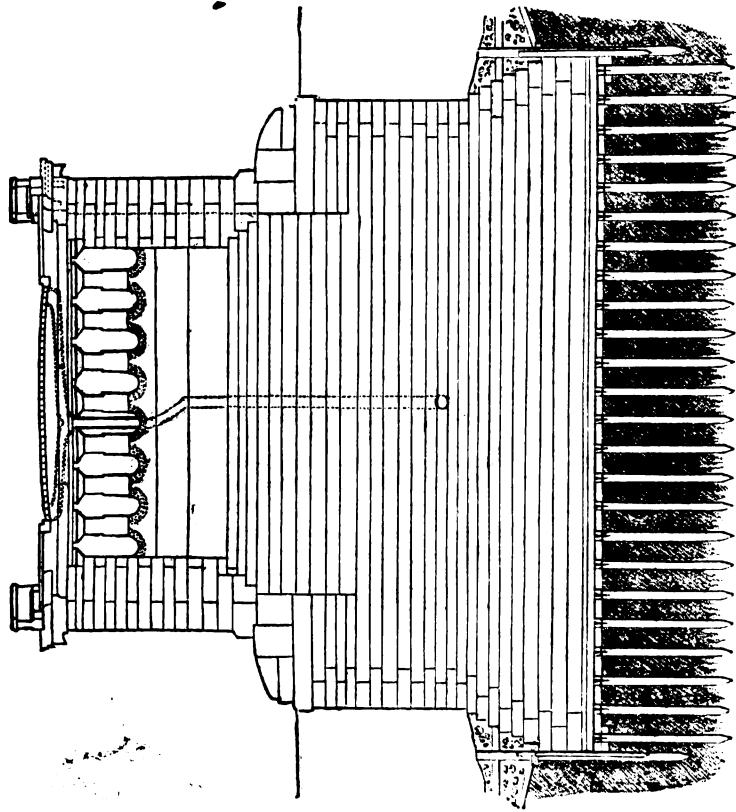
**Centres.**—There are to be four complete sets. Each set to consist of eight ribs properly braced; to be of best Dantzic, Memel, Riga, or Stettin fir, except springing pieces, which are to be of elm, and striking wedges to be of oak, cased, on upper and lower sides, with copper ½ inch thick. Iron to be best English. Trestles to be best fir. The whole to be braced longitudinally and diagonally. Covering of centres to be fir half timbers 7 inches thick.

**Arch-stones.**—The whole of the arch-stones to be headers, 18 inches thick at intrados, increasing according to radiature: none to be less than 2 feet 6 inches wide, or to overlap at joints less than 15 inches. Length of arch-stones to increase where inverted or abutting arches on piers commence, and in abutments to be continued on same line of radius to the extremity of abutments. Quoins of arches to be continued to meet horizontal courses in the spandrels. Arch-stones to be dressed smooth and straight; faces and soffits fine-dressed and rusticated; extrados rough hammer-dressed except where inverted arches join, where they are to be smooth-dressed. Arches interior and exterior to be of granite.

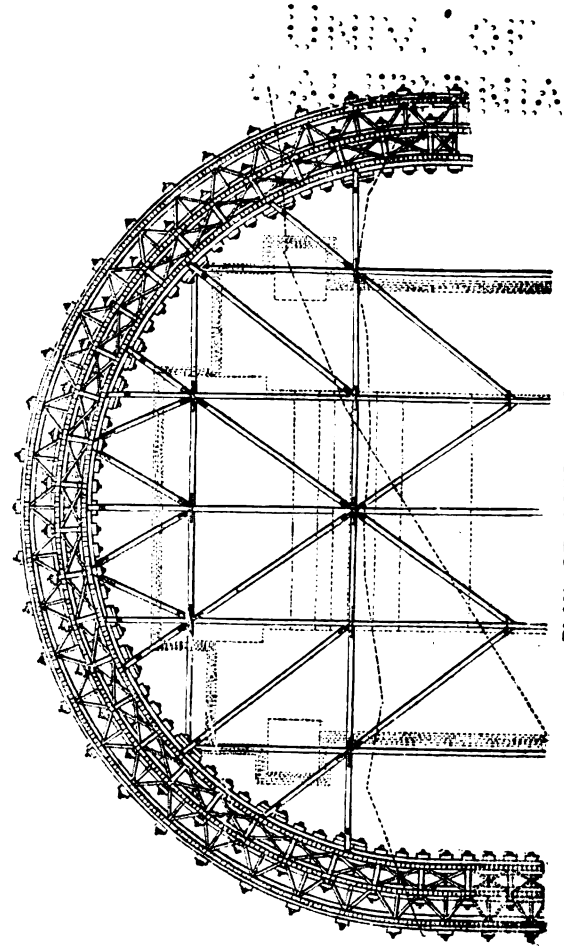
**Spandrels** to be of solid masonry in horizontal courses, corresponding in thickness, and closely fitted to arch-stones.

**Inverted Arches** to be not less than 18 inches at soffit, increasing according to radius, to rest on spandrels, and to be accurately fitted to them and the arch-stones. A circular opening 18 inches diameter through centre of pier, from inverted arches, to carry off leakage. *Outside spandril walls* to be 5 feet thick, fronted with granite in courses corresponding with arch-stones. Horizontal joints of courses to be rusticated; vertical joints to be plain and fair-dressed, outside face fair hammer-dressed. Caps of piers to be fair-dressed on exterior, and dowelled to fascia-course. Rectangular buttresses over piers and abutments to be faced with granite at least 3 feet 6 inches deep.

**Interior Spandril Walls.**—Before these are commenced the joints on the back of arches, &c., to be well cleared out, openings to be grouted and pointed with Roman cement. They are to be of best hard grey stock bricks, seven in number over each pier, and 2 feet 3 inches thick. On tops, stone corbels, 18 inches deep, projecting 12 inches on each side, or Bramley Fall stone. The whole surface over these walls to be covered with Yorkshire landings 9 inches thick; the longitudinal joints to be over centres of interior spandrels.

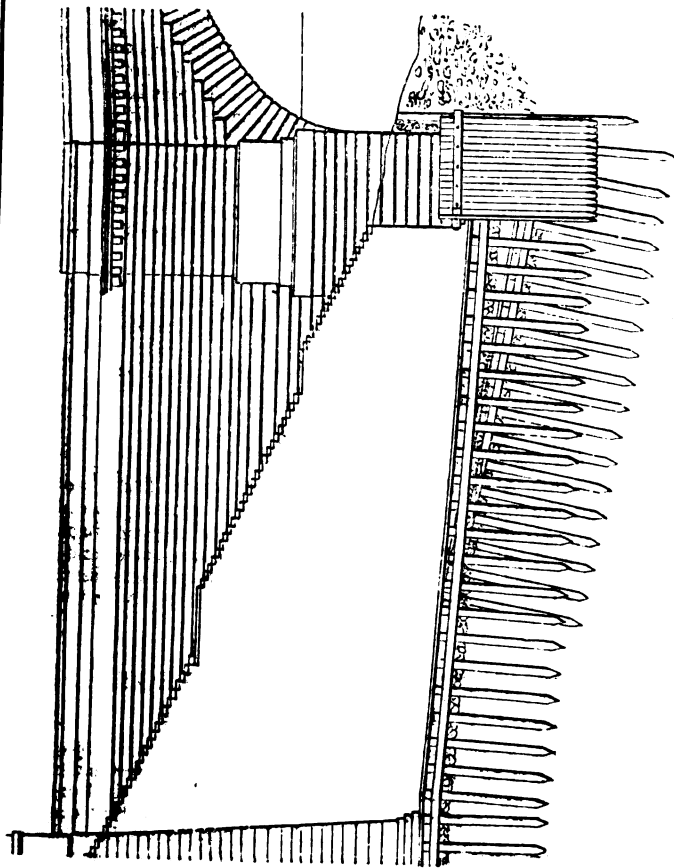


TRANSVERSE SECTION THROUGH PIER.

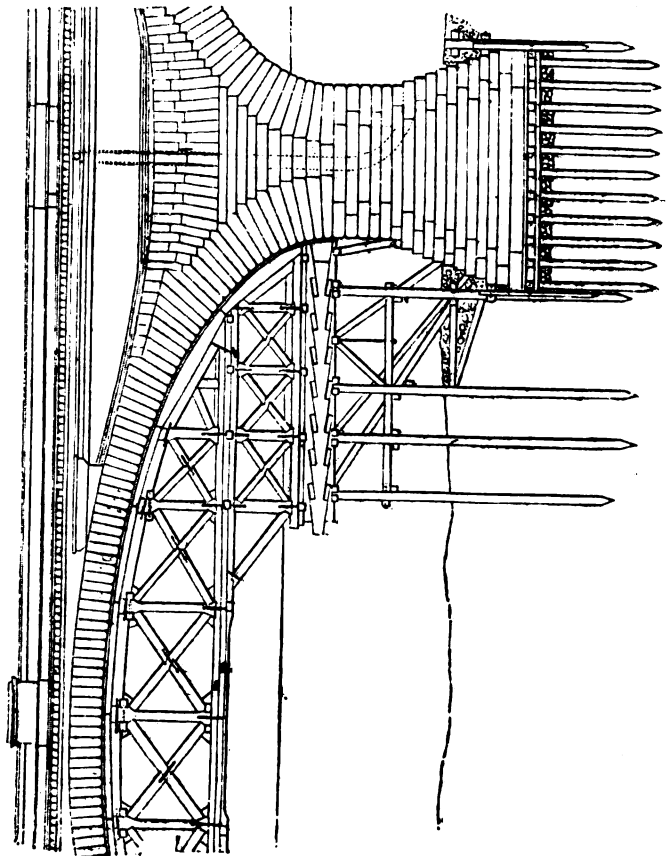


PLAN OF COFFERDAM.

Scale--80 feet to an inch.



SECTION THROUGH STAIRS.  
Showing Piling at right angles to inclination of foundations.



LONGITUDINAL SECTION.  
Showing Centres, Inverted Arches, &c.

### LONDON BRIDGE.

(BY PERMISSION OF MESSRS. LONGMAN.)

**Roadway.**—The whole surface of bridge to be covered with clay puddle 15 inches thick—then with 3 inches of fine sand, and 12 inches of fine flint stones, none larger than 2 inches diameter. Foot-paving to be of granite; each flag to be the whole width of foot-path, equal 7 feet 6 inches by 8 inches thick, one end bedded on cornice, the other resting on curbstones 4 feet by 9 inches by 12 inches of granite, and edgeways; intermediate spaces being filled with fine gravel or sand.

**Approaches** to be formed of solid embankments and arches. Embankments to be supported on sides with brick retaining walls. Piers of arches to be founded 6 feet below H.W.M., and retaining walls 3 feet. Foundations are to be concrete, 6 inches thick; Yorkshire landings, 6 inches thick; and Bramley Fall or other stone laid 15 inches thick. Piers to be 4 feet wide at bottom, at 4 feet high to be 2 feet 3 inches wide. Over each pier 18 inches of stone. Arches to be semicircular, 16 feet span, 18 inches deep at crown, increasing towards haunches.

**Mortar** to be of best Dorking, Merstham, or other lime, well burnt and ground on the spot. The exterior mortar from foundations to H.W.M. to be one part Pozzolano, one part Dorking lime, and two parts sand. For the remainder of exterior three parts sand and one part lime; for interior work four parts sand to one part lime.

The cost of the bridge and approaches was 1,458,311l.

## HOMERIC ARCHITECTURE.

(Continued from page 89.)

OF two kinds of the structures alluded to by Homer we are able to judge from existing examples—walls and treasuries. In his day Greece was studded with a number of independent towns, so close that, according to Colonel Mure, a ride of twelve hours enables one to visit at least four places celebrated by Homer. We are ignorant as to what race the original founders belonged, but it is established that they divided into groups, and, taking advantage of the natural features of the country, selected the most inaccessible positions as their dwelling places. That they must have stood in fear of each other, and it may be of other enemies, is evident from this choice and from the massive walls with which some of the villages were surrounded. In an age when mercy was not recognised as a fitting attribute of gods or men, these walls would become the most important possession of a town. If they were well defended, so that scaling was prevented, as there were no engines of attack, besiegers might have to wait for years before an opportunity offered of entering the town by stratagem. It is remarkable how carefully Homer distinguishes the towns that were possessed of walls from those which relied upon the natural security of the site. For example, 'All who Hypothebe hold—a nobly-built fortress,' 'Dion's fortress steep,' 'Wall-encircled Gortyn,' as compared with 'Where high Neritos shakes his waving woods,' 'Where Ægilipa's rugged sides are green.' In no case does he mention that the existing inhabitants had raised them—a proof that they must have been built before his time. Of the character of these 'heaven-built Cyclopean' walls we may form an idea from the remains scattered throughout the country, especially those at Tiryns. Here they are in parts 43 feet high and 25 feet thick, the enormous stones being rudely piled in tiers for about a quarter of a mile in circuit, producing at a distance, as Mure says, an effect similar to the hulk of a large man-of-war floating in a harbour. It is held by some that those elevated sites must have to some extent influenced the style of Grecian architecture, which, as Cockerell says, seems to have grown spontaneously from its rocky bed, and to partake in its monolithic masses of the stony aboriginal material on which it was founded, its horizontal outline and regularity admirably contrasting with the surrounding vertical and irregular forms.

The same desire for security which made such walls necessary, caused also the construction of underground storehouses or treasuries. To these allusion is sometimes made by Homer, as when Achilles rejects the offers of Agamemnon:—

Life is not bought with heaps of gold:  
Not all Apollo's Phytian treasures hold,  
Or Troy once held in peace and pride of sway,  
Can bribe the poor possession of a day.

The most perfect specimen remaining is at Mycenæ, where it was known by the irreverent but expressive name of 'the Oven,' until the enquiries of travellers gave it interest, when it became 'the Agamemnon.' It resembles somewhat a gigantic beehive, about 50 feet in diameter at base, and the same in height, the stones being placed in horizontal layers, each gradually projecting over the other until they meet at the top, where one stone closed the vault. It was probably at one time covered with plates of copper, as large nails by which they were fastened have been found in parts of the building.

We have already stated it is believed that in the Homeric times temples were not needed for the purposes of religion. In the Iliad allusion is made but once to a Grecian temple, one dedicated to Minerva at Athens; but as Lord Aberdeen has shown, there is little doubt it must have been an interpolation. In the 'Hymn to Apollo' there is much about the founding of the temple at Delphi; but although it is on this poem the popular idea of Homer's blindness and poverty is founded, it is supposed to belong to an age much later than his. In Troy there was a temple or shrine which had gates; and as offerings of robes and such things were deposited in it, it must have had a roof of some kind, probably boughs. As the object of reverence was symbolical rather than representative, such as

a stone or beam, without any attempt at a likeness to any form, the receptacle might be rude enough and still be worthy of it.

We are able to form a clearer idea, from what is said in Homer, of the arrangement of the palaces than of their appearance. Priam's is thus described:—

Then hasted he access  
To Priam's goodly builded court, which round about was run  
With walking porches, galleries to keep off rain and sun.  
Within of one side on a row of sundry coloured stones  
Fifty fair lodgings were built for Priam's fifty sons,  
And of as fair sort for their wives; and in the opposite view  
Twelve lodgings of like stone, like height, were likewise built arow.

From this and other allusions in the poems (tested by comparison with the existing houses of the district), it is believed the different parts of the Homeric house were disposed somewhat in this manner:—

In front and opening to the road was the *aule*, which was a square or oblong enclosure, paved, and having in the midst of it the family altar. Within or around this *aule* were galleries, corridors, or open chambers called *aihousesai*, i.e. probably glowing or shining, as, being in front of the building, they were full of light. These galleries, which are usually translated as porticoes, were used as places of general assembly, where the inmates sat to sun themselves, and at night were converted into sleeping places for strangers. The house itself mainly consisted of a large chamber or hall called the *megaron*, the roof of which had often to be supported by wooden columns. Usually around this were the private apartments, which seem to have been generally small, and varied in number according to the inhabitants. It is possible that in some there was a second storey, the approach being by means of a ladder. The roof, as in Eastern houses, was commonly flat; but from the simile of the wrestling match between Ulysses and Ajax it must have been sometimes pointed:—

Then nicely belted both came forth and in the middle stand,  
And seize each other's elbows with the firmly grasping hand,  
Firm as two beams which carpenters with nice dovetailing binds,  
High on a lofty roof to hold against the blustering winds.

There is no mention of a chimney; and if the fuel was of dry olive or pine wood, as some think, little smoke would be emitted, and consequently no need of one. But as we know that Ulysses discovered the site of Circe's dwelling, or 'stately dome,' by the smoke rising, and he so longed to see it upspringing from his own hearth that he desired death, there must have been some provision of the kind.

Since the days of Wolf it has been a matter of controversy whether the Iliad and Odyssey have been the work of one or of several poets. English opinion in general has inclined towards the belief that both must have been written by Homer—and with reason, for it is not often a second poet is found capable of continuing such a poem. But this does not prevent the possibility of many passages being inserted from time to time. There are some which relate to architecture, and describe edifices so different that it is impossible to believe they could have been composed about the same time. To take one case. Above we have given the description of Priam's palace, which, on account of its position towards the east, might be expected to have all the magnificence that was known at the time; and from its relation to the poem, nothing that was noteworthy was likely to be omitted by Homer. In architecture, if one type of building is at any time adopted, it may be said to be almost permanent, and changes of style are not made suddenly, but imperceptibly. Priam's palace is exactly the kind of building that might be expected in such primitive times. If it is, what can be thought of the following, and does it seem probable that both could be contemporaneous in the same country?—

The walls were masonry brass: the cornice high  
Blue metals crowned, in colour of the sky;  
Rich plates of gold the folding doors incase;  
The pillars silver, on a brazen base:  
Silver the lintels deep projecting o'er,  
And gold the ringlets that surround the door.  
Two rows of stately dogs on either hand,  
In sculptured gold and labour'd silver, stand.  
These Vulcan formed with art divine, to wait  
Immortal guardians at Alecton's gate.

Fair thrones within from space to space were rais'd,  
Where various carpets with embroidery blaz'd,  
The work of matrons.

It may be said that this is one of the architectural visions that sometimes rise before the half-shut eyes of poets, but it is contrary to our idea of Homer's excellence to believe that he drew airy nothings. Besides, we think it will be found that poets have never been architectural designers, and that their castles in the air have had a basis in reality, and were usually suggested by some work of an artist-architect.

## CAN AN ENGINEER OR ARCHITECT WITHHOLD HIS CERTIFICATE?

THE relations between architects or engineers and contractors is a subject that at present is receiving deserved attention. As in the end it resolves itself into a question of what is law and what is not, the legal aspects of the subject are of primary importance, and every case that can illustrate any part merits consideration. In the last number of the *Irish Law Reports* (January 1869) there is a report of one of those cases that (to the credit of architects and engineers) seldom arise, where a contractor, or rather his representatives, were obliged to take proceedings against an engineer for loss incurred by the withholding of his certificate: we allude to the case of Murphy (Official Assignee) and others v. Bower.

In 1861 Messrs. Moore contracted to construct the 'Finn Valley Railway,' under the ordinary conditions, that the works were to be according to



the plans and instructions of the engineer; that monthly, nine-tenths of the amounts certified by the engineer were to be paid, the balance remaining until completion, &c. Before they were able to complete the works, Messrs. Moore became bankrupts, and the obligation devolved upon their creditors. When everything was duly performed, the engineer's final certificate for 6,659*l.* was applied for, but could not be obtained. The Company were then sued for the amount, and they pleaded that the necessary certificate was not given, and consequently the action was lost. The creditors then sued the engineer, who demurred—1. Because he never contracted with the Messrs. Moore to give certificates or perform the duties of an engineer. 2. That his duty as engineer was not to the Messrs. Moore, but to the Company. 3. The counts in the summons are actions upon duties arising out of contract, of which persons not parties to the contract are endeavouring to take advantage. 4. The fraudulent breach of a contract or duty arising solely out of contract, can give no cause of action except to a party to the contract. 5. A breach of contract or of duty arising out of contract, committed by one party to a contract in collusion with the only other party to said contract, is insensible, and gives no cause of action to any person, and particularly not to a stranger to the contract.

Against these pleas it was urged for the plaintiffs that the mere fact of the engineer's entering upon the duties contemplated by the contract created a duty upon his part to discharge that duty rightly. He contracted to serve the Railway Company, and the Company, armed with his authority, contracted that, as between them and the Messrs. Moore, he would do his duty. It was impossible to suppose that the Messrs. Moore would have bound themselves to incur vast expense, or that the Railway Company would have dreamt of asking them to do so, if their remuneration was to depend upon the whim of a servant of the Company, with whom they had no connection. However, even if there never had been any contract between plaintiffs and defendant, it was clearly the duty of the engineer, as engineer, to give the usual certificates given by all engineers, and a breach of that duty renders the defendant answerable.

Chief Justice Monahan delivered this judgment:—It appears that the engineer was not a party to the original agreement between Messrs. Moore and the Company, and that the alleged duty of the defendant to give a certificate, so far as it exists, arises from the simple fact that he was employed by the Company as their engineer to superintend their works. The question then arises, whether the defendant has rendered himself liable to plaintiffs' action by merely refusing to give his certificate, though aware that the plaintiffs had done everything to entitle themselves to it, and how far the matter would be affected by the fact of his being actuated by a fraudulent motive in withholding such certificate, or having done so in collusion with the Company. The argument for the defendant is, that since the duty of the engineer to give a certificate arises, if at all, out of a contract, the Messrs. Moore, or their assignees, not being parties to it, cannot maintain an action for its breach; and this argument is equally applicable, whether the contract out of which the duty arises is a contract between the engineer and the Company, or, as has been suggested, between the Railway Company and the Messrs. Moore, assuming them to have contracted on the part of their engineer, that he, as their employé, should do his duty, and give such certificate. It was also contended on the part of the plaintiffs that, inasmuch as the defendant has taken upon himself the duty of engineer, it might be inferred that he had expressly contracted with the Messrs. Moore to perform his duty as such engineer; but the answer to this suggestion is, that, if any such contract was intended to be relied on, it should have been stated that such a contract was in fact entered into; the consideration for that contract should have been also stated, and it would have been then competent for the defendant to traverse the alleged consideration. If the contract stated in the summons and plaint was an express contract between the Railway Company and the Messrs. Moore, by which the Railway Company contracted that their engineer should do his duty properly, there is no doubt but that a right to maintain an action against the Railway Company would have accrued to them upon the engineer's default; but some cases have been referred to in which it has been decided that, where the foundation of the right of action is rested upon contract, no one can maintain an action who is not a party to the contract. . . . The question then arises, are the plaintiffs remediless? There is authority to show that, if collusion did exist between the engineer and the Company, the plaintiffs have a remedy against the Railway Company. The case of *Clarke v. Watson* decides that in the absence of fraud or collusion they have not. But here fraud and collusion with the Company have been alleged; and if fraud exists, most certainly if collusion, there *must* be a remedy. In *Milner v. Field* the Court expressed an opinion that an action at law would lie against parties who fraudulently prevented such a certificate from being given, and thus attempted to shelter themselves from liability on their contract. In *Batterbury v. Vyse* a declaration upon a contract by an employer who stood in the position of the present Railway Company, charging as a breach thereof that the architect had improperly refused to give his certificate, and had neglected to do so, in collusion with the defendant and by his procurement, was supported upon demurrer. The proper course, therefore, for the plaintiffs to adopt is, to proceed, not against the engineer alone, but against both the engineer and the Railway Company, if they go into a court of equity; or if they elect to sue at law, they must proceed against the Company who contracted with them.

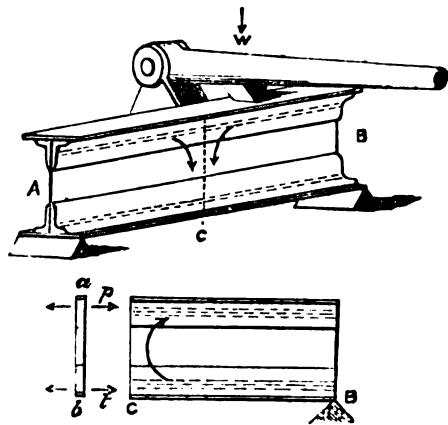
The engineer's demurrer was consequently allowed.

WROUGHT IRON GIRDERS.

A BEAM may be considered in two aspects: as regards stiffness, or as regards strength. We may enquire, on the one hand, what load may safely be put upon it; or, on the other, how much it will deflect under any given load. There is a close and essential connection between these two properties, yet they are not identical. One beam may be far stronger than another of the same rigidity. By a mere change in the section of a beam, without altering either its depth or its total weight of material, it is, in

certain cases, possible to increase its strength, at the same time that we reduce its stiffness.

The rigidity of beams is a question involving some use of the higher mathematics. It is well that the more important question of strength is comparatively an easy one in ordinary circumstances.



The reason of the compression at the top and tension at the bottom of a loaded beam is not far to seek. If we suppose the girder, A B, to be divided into two sections by an imaginary line at any intermediate point, C, it is obvious that these sections have a tendency to turn in opposite directions under the load. Such will be the case wherever we take C, and the result is, that more or less bending strain is at work at every point throughout the length of the beam. This strain depends both on the amount of the load, and on the purchase or leverage between the supported ends and the loaded intermediate portions of the beam. It accordingly varies with the product of the number of feet span, and the number of pounds load, modified by the way in which the latter is distributed or concentrated. If we call the load in pounds W, and the clear span in feet S, then—

When load W is equally distributed over span S,

$$\text{Bending strain} = \frac{WS}{8};$$

and when load W is concentrated at the half span.

$$\text{Bending strain} = \frac{WS}{4};$$

these being the strains at the half span, where the stress is greatest. Now, the top and bottom being firmly connected by the web, so that there cannot be any sliding (such as takes place, for example, between the *laminæ* of a railway carriage spring), there can be no bending unless the upper flange is compressed and the lower flange stretched; because they are constrained to assume, not parallel, but concentric curves. Corresponding elastic resistances, at the top to compression, at the bottom to tension, are consequently brought into play. The amounts of these two descriptions of elastic reaction must be equal, in the absence of any external lateral force tending to shorten or lengthen the girder as a whole.

If we take one portion, C B, of the beam, and indicate by the arrows p and t the resistances respectively to compression and extension of the upper and lower portions of the vertical slice a b adjacent to the section line, we have in these resistances a pair of parallel and opposite pressures, with a leverage equal to the depth of the girder, and tending to cause upward rotation. All that is required being that this upward reaction should just balance the deflecting action of the load, it becomes an easy task to determine the amounts of compression and tension caused by a given load, and thence the sectional area needed in top and bottom flange.

For ordinary purposes of construction in buildings, wrought iron girders carry the same section from end to end, and this section is of course calculated for the maximum strain, which occurs at the half-span. When the areas of the upper and lower flanges are pretty large in proportion to the thickness of the web, the latter need not enter into the calculation of the strains, which may accordingly be considered as thrown entirely on the flanges. Calling load (in lbs.) W, and span (in feet) S, as before, and depth of girder d (in inches); we find the total compression at the top, or extension at the bottom, to be equal to

$$12 \times \frac{WS}{8d} = \frac{3WS}{2d},$$

when the load is equally distributed over the span. The same load applied at the half-span would create a stress of double the amount. Care must be taken to ascertain (as the value of W) the greatest weight that can in any possible contingency come upon the beam after it is in the building.

Good boiler plate and angle irons, as used in girders, ought to stand, per square inch of section, compression of 8,400 lbs., or tension of 10,500 lbs., without any injury to their elasticity. To keep the *maximum* intensity of strain within these safe limits, the following rules will give the requisite areas for flanges; provided the greatest load is one *equally distributed*.

$$\frac{WS}{5600d} = \text{No. of square inches area in section of top flange.}$$

Say, multiply the distributed load in pounds by the number of feet span, and divide by 5,600 times the depth in inches; the result will give the sectional area of top flange in square inches.

When the plates and angle irons are in entire lengths, without joint—

$$\frac{WS}{7000d} = \text{No. of square inches area in section of bottom flange.}$$

When the plates and angle irons are in more than one length, with secure butt joints, double riveted:—

$$\frac{WS}{5000d} = \text{No. of square inches area in section of bottom flange.}$$

The preceding rules pretty nearly accord with the results which have been deduced by Mr. Fairbairn from actual experiment. We have thought it most convenient to state the load in lbs., and the span in feet, as somewhat facilitating the application of the formulæ.

In cases where *W* is a load concentrated at the half span, the areas of flanges must be double what the rules just given would make them, so that we get

$$\frac{WS}{2800d} \text{ square inches for area of top flange;}$$

Say, multiply the *maximum* concentrated load in pounds by the span in feet, and divide by 2,800 times the depth in inches; the result will give the sectional area of top flange in inches:—

$$\text{and either } \frac{WS}{8500d} \text{ square inches, or } \frac{WS}{2500d} \text{ square inches}$$

for ditto of bottom flange—the first if the flange is in one length, and the second if it is in more than one.

When the greatest load is partly concentrated and partly distributed (as, for instance, when a beam carries a wall and also supports the end of a floor girder), the areas of flanges calculated for the concentrated load must be added to those calculated for the distributed load, and the sums will be the requisite areas.

It will sometimes happen that a girder has to carry a load concentrated at a point nearer to one support than to the other. For such a case a ready rule will be as follows:—Multiply four times the load by the product of its distances from the two supports respectively, and divide by the square of the clear span. Consider the quotient as a load applied at the half span, and calculate the flanges accordingly.

Having determined the section of girder, its weight may be pretty closely estimated by the following method:—Multiply 10 times the sum of the areas of top and bottom flanges in square inches by the length of the girder in yards, and, to the product thus obtained, add 10 times the number of square feet of web (computed from the side elevation), if its thickness be one quarter of an inch; if its thickness be more or less than the quarter of an inch, the multiplier 10 must be increased or reduced, at the rate of 2½ for each sixteenth of an inch.

The sum will be the number of lbs. weight of wrought iron in flanges and web; omitting gussets, ends, joints (if any), and rivet heads, which must be estimated separately, as no general rule can be given for them.

The thickness of the web, in the ordinary  $\Pi$ -shaped plate girders, should be not less than such as will make the number of square inches in the web, as shown on plan (i.e., the product of its thickness and its length in inches), equal to 3 times the number of square inches in the cross section of the girder: e.g., if the cross section of a beam be 20 square inches in area, and its length 20 feet (= 240 inches), the web should be ½ inch thick. Owing to the lateral weakness and inferior durability of very thin plates, the *minimum* given by this rule will often be largely exceeded in beams of light section.

For cases where very large spans and loads have to be dealt with, the box-shaped beam offers the advantage of superior lateral stiffness. In ordinary cases the  $\Pi$ -beam meets all requirements, and its single web gives it the advantage in point of economy. In estimating the strength from the cross section, one square inch of flange counts for 3 times as much as a square inch of web, on the average; so that a double web adds to the weight of metal much more in proportion than it adds to the vertical rigidity; and the more effective distribution of material is secured with the single web, provided it be kept from buckling sideways, by means of gussets or stiffening plates, or by the mode in which the cross joists or binders are attached. The sectional area of top or bottom of a box-beam will not materially differ from those given by the preceding rules for the  $\Pi$ -beam.

For testing a plate beam, it will not be necessary to subject it to more strain than that caused by the *maximum* load; and if after the removal of the test load the permanent set be found not to exceed one-third of the deflection under test, the workmanship and material may be considered free from serious defect; although, with high excellence of work, the permanent set will be much less in proportion to the deflection.

Wrought-iron joists, binders, and girders or bressumers for moderate spans and loads, are turned out from the rolling mill, so that the riveted work, with its attendant cost, may be saved in cases where the available bearings are not very far asunder. With rolled beams, an amount of metal is commonly put in the web that renders its *quota* of strength of some account, over and above its special service as solid trussing between the upper and lower parts of the beam.

We may here note the main points that make for economy in the employment of wrought-iron beams. First and most obvious is the selection of the shortest practicable bearings, and the keeping the distance between supports as small as the special conditions of the case will allow. Where walls are strong and massive, and well steadied with the weight of upper storeys, the introduction of through-stone corbels is available for some small reduction of the clear span. Secondly, the greater the depth that can be given the beam, the lighter section will suffice for the same duty, with this further advantage, that, while securing equal *strength* with less metal, we are also getting a *stiffer* beam; and thus carry the load with equal safety, and less deflection, at a reduced cost. Of course it is possible to give excessive depth to a beam; the sideways warping or buckling of the web (in the  $\Pi$  section) is a danger to be sedulously guarded against, which increases with the increase of depth. Sometimes lateral stiffness may be secured by the mode of attachment of binders or deep joists; sometimes, by timber cheeks, firmly secured by bolts passing through the web; sometimes gusset or stiffening plates will be indispensable; and end plates are of course essential in all plate girders. The third source of economy has already been adverted to as available with moderate spans, namely, the employment of solid rolled, in preference to built, beams. And,

although the greater thickness of web in the former does not give so advantageous a distribution of metal on the cross section, it is not without its service in adding lateral stiffness. Fourthly, in plate girders, economy is to be consulted by the avoidance of cross joints everywhere, but especially in the lower flange. All cross joints add expense in butt plates and riveting; but a cross joint in the lower flange involves (as has been already pointed out) an increase of some 40 per cent. in the weight of metal in the flange itself. In some cases, where the bottom plate is too heavy to procure in one piece from the rolling mill, it may be composed of *two strips*, one on each side of the web, each being in one length. Or, it may perhaps be preferable, instead of thus slitting the bottom flange along the middle, to laminate it, employing two, or, if need require, more plates; each the full width, and in one length. The thinner the plate, the more reliable the quality of the metal; and, so long as the lower flange has only tension to sustain, the laminated structure is no defect. A fifth mode of economy consists in the reduction of the flanges from the half span towards the points of support—a reduction which (with wrought iron) is of practical advantage only where very heavy spans are encountered. The question of continuity comes last, but not least, as one of economy in girders. The advantage derivable is dependent on the section of beam (if uniform) being the same at top and bottom, and on the ends being firmly fixed down. In very large built beams, the section can of course be varied to suit the distribution of strain peculiar to continuous flexure.

## ILLUSTRATIONS.

ST. GEORGE'S CHURCH, LENNOXVILLE.

(WITH AN ILLUSTRATION.)

LENNOXVILLE is a considerable and still growing village, in the eastern townships of Canada and province of Quebec. It is the centre of a population of British and American descent, and in close proximity to the village has been erected the University of Bishop's College, the chief seat of education, in connection with the Church, in the two dioceses of Montreal and Quebec.

For many years a congregation has existed at Lennoxville, and the increasing number of members has made it imperative to provide additional accommodation; and for this purpose it was wisely determined to erect a new church, rather than to attempt to enlarge and alter the present poor and ill-ordered building.

For this purpose I have prepared plans for a church to accommodate 687 persons, my aim having been to design a building sufficiently dignified for its important position in the province, and yet simple in its details and moderate in its cost. The church will be built of local brick, red and black being used for the exterior, and white and red for the interior. The black on the outside and the red inside have been sparingly used, and in purely architectural lines. Stone is difficult to obtain, but a white marble is much used, and the simple forms of the capitals and window tracery have been designed for its use. The nave and chancel piers are of polished red Aberdeen granite. The reredos, pulpit, chancel screen, and some other fittings will be added as funds allow, and will probably be worked in England. All the windows are to be double glazed, the exterior glazing being of plate-glass, in wrought-iron frames, the interior, cathedral or painted glass. All the entrances have double doors.

Durham, February, 1869.

C. HODGSON FOWLER.

THE NORTH PORCH, BRISTOL CATHEDRAL.

G. E. STREET, A.R.A., ARCHITECT.

(WITH AN ILLUSTRATION.)

THIS work, of which we give an illustration which has been reduced by photo-lithography from a drawing by the architect, is one of those portions of this restoration as to which there was no guide in the old work, although it was known that a Norman Porch existed on the position which it occupies. The new Porch is therefore an entirely original design of the architect.

The rebuilding of the Nave of Bristol Cathedral is now in active progress. The Committee at present have been only able to contract for two complete bays, and the foundations of the four western bays, and of the two western steeples up to the top of the plinth.

It is hoped that a third bay may be at once undertaken and completed, and then probably a temporary end wall will be erected, and the remaining three bays and the steeples carried on gradually as the funds come in.

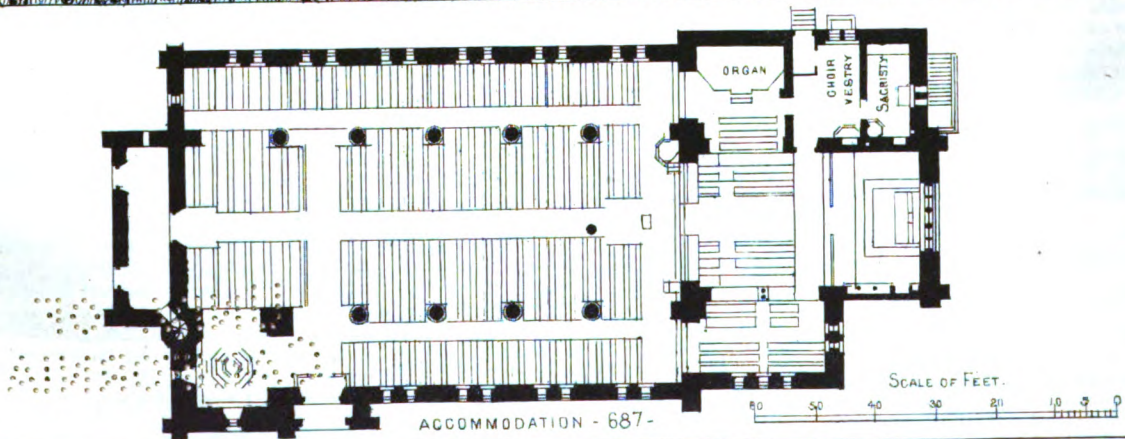
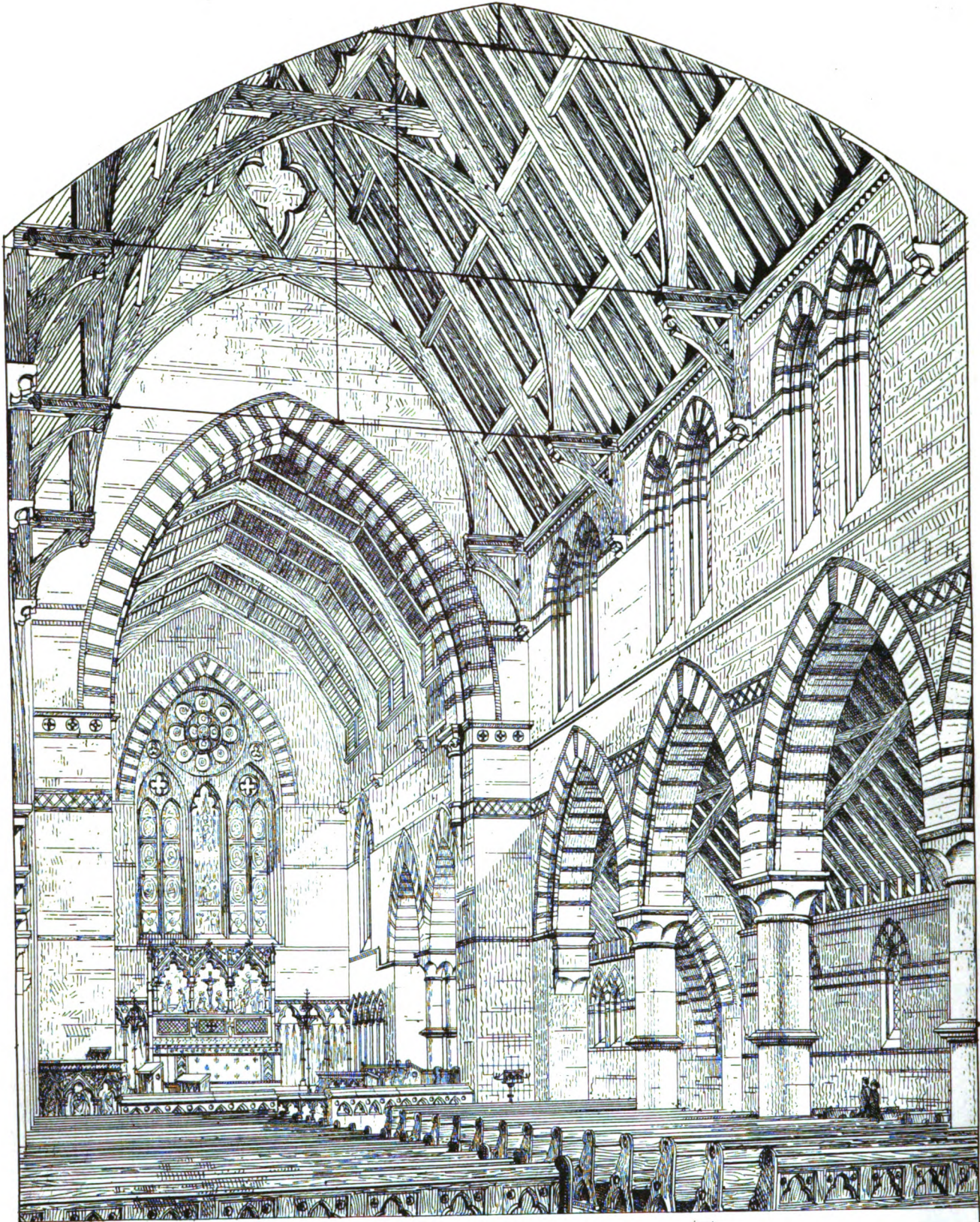
In making excavations, the foundations of the old Norman nave were discovered exactly where Mr. Street had shown in his original report that they were to be expected.

Mr. Booth, of Gosport, has the contract for the works, and Douling stone is being employed for the whole work, inside and out.

New Water Works are about to be constructed at Winwick for the purpose of giving an additional supply to Warrington. They will consist of a well to be sunk in the red sandstone, a powerful pumping engine, and a covered reservoir. The Act authorising the construction of these works was obtained last Session. The late Mr. Thomas Duncan was the consulting engineer, and Mr. Charles H. Beloe the engineer. The works are being carried on under the superintendence of the latter gentleman.

Day of  
Columbus



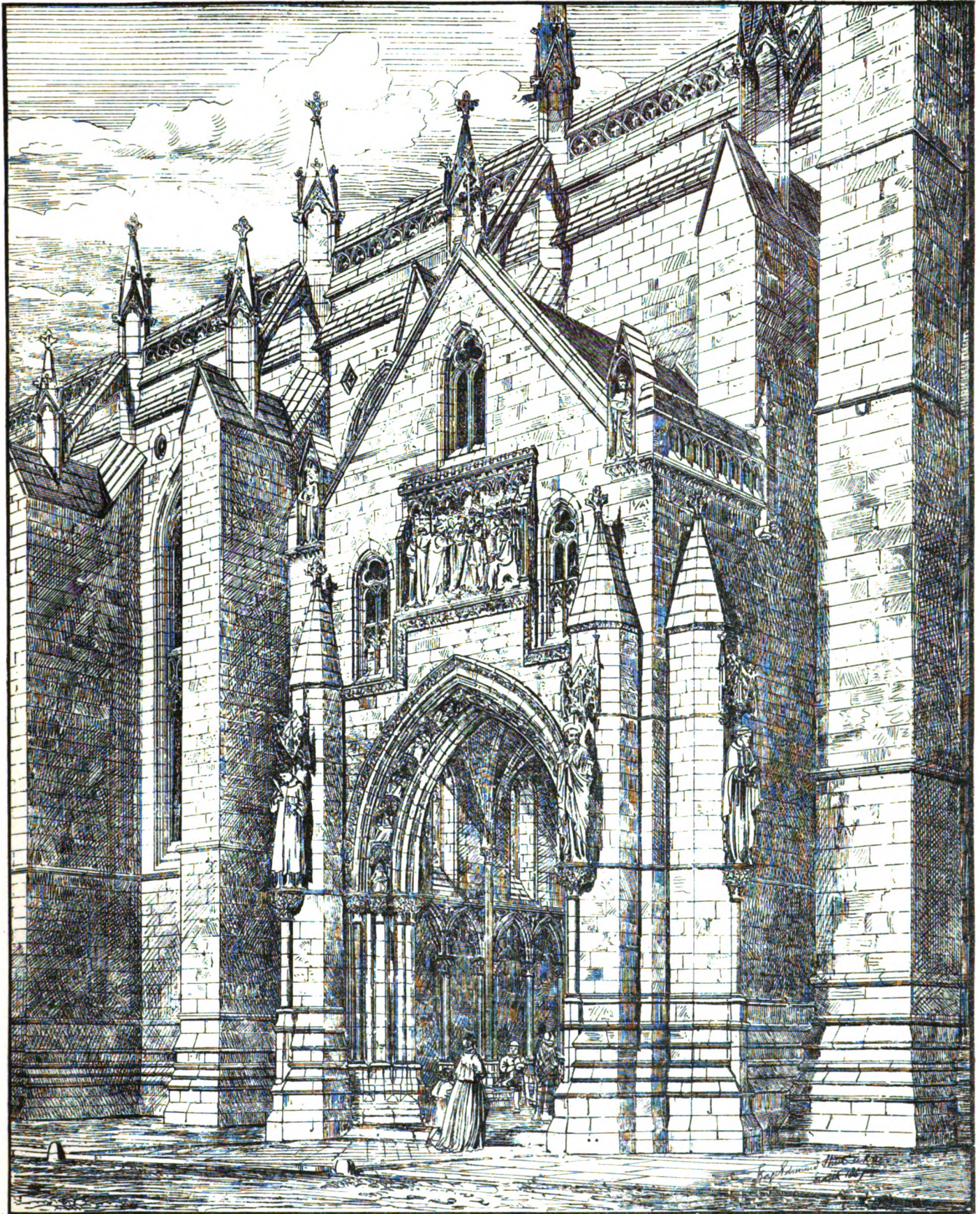


Printed by W.W. Spanglow & Co. London, E.C.

# St. George's Church · Kennoxville · Canada.

C. HODGSON FOWLER, M.R.I.B.A. ARCHITECT.





S Aying, Photo-Litho.

W. W. Wynne & Co. London, E.C.

# Bristol Cathedral · North Porch.

ARCHITECT, G. E. STREET, A. R. A., F. R. L. B. A.



ॐ नमो भगवते वासुदेवाय

## SOCIETIES.

## Metropolitan Buildings and Management Bill.

At a recent special general meeting of the Royal Institute of British Architects, the report of a committee appointed by the Council on the Metropolitan Buildings and Management Bill, having been considered and amended, was adopted, and the following resolution was come to:—'That while this Institute recognises the importance of making certain modifications in the Building Act of 1855, proposed and embodied in the Metropolitan Buildings and Management Bill now under consideration, it is of opinion that there are no adequate grounds for such a complete alteration of the Act as that which would be involved by the adoption of the Bill in its entirety.' The following is the most important portion of the report of the Committee:—

We, the Committee,—appointed by the Royal Institute of British Architects to examine and report on the draft of a proposed new Metropolitan Buildings and Management Bill—having duly examined the same, and considered the provisions therein contained, both in their relation to those set forth in previous Acts of the same nature, and in relation to the necessities of current practice in the Metropolis, beg to report as follows:—

Having reference to the present stage of the Bill, and the probability of its being extensively altered, we have only dealt with it at the present time in general terms, leaving the minute details to a future time.

We observed that its scope differs from that of the existing Building Act in the extended powers given to the Metropolitan Board of Works. Not only has that body, by the proposed Bill, power of authorising any deviation from the conditions of structure laid down in the Act, but it retains the sole and absolute court of appeal in all matters or questions arising out of the Act, having at the same time such despotic rule over the position of the district surveyors as to render them entirely powerless, if the Board sees fit to exercise its authority. Our chief objections to the Metropolitan Board of Works, as holding this great power, are not of any personal nature, but rest on the following considerations.

Questions arising out of this Act are generally on matters of detail of an altogether technical nature; that is, technical either from an architectural or a legal point of view. While the variety and importance of other duties already devolving upon that Board are not likely to leave them time to properly investigate complicated questions of construction, and the numerous other matters which must necessarily arise out of the working of the Bill; and the number of members of which the Board is composed must neutralise to a great extent the sense of personal responsibility which is essential for the due administration of it of such matters of detail. Your Committee would have preferred to have seen the authority conferred by the Draft Bill upon the Metropolitan Board of Works, vested in a smaller tribunal, appointed, it may be, by the Board, and adequately remunerated, especially selected for possessing the necessary legal and constructional knowledge, and directly responsible for their judgment of all questions upon which any power of discretion is left by the Act. Such tribunal should, we think, consist of one or more architects or surveyors of repute, and of one or more magistrates or barristers.

We would further observe, that the Draft Bill, as compared with the existing Metropolitan Building Act, contains various provisions, founded in the main on the Building Act in operation at Liverpool, with respect to fire-resisting buildings, more particularly of the warehouse class; and the conditions under which goods of greater or less combustibility may be stored therein. The introduction of these clauses (subject to some remarks we shall hereafter offer in detail) will, we consider, confer a benefit both upon the public, and upon those especially connected with the use or erection of such structures.

The Bill comprises various clauses, more particularly affecting Metropolitan local management, which we consider tend to complicate unnecessarily an Act for the special regulation of buildings, a kind of Bill which, from its very nature, must always be somewhat complicated. We consider, therefore, that any such clauses would, with greater propriety, be included in a Bill for the Revision of Metropolitan Local Management.

We find so many clauses and provisions relating to the prevention of fire, that we think more general prominence should be given to the subject in the preamble of the Bill.

We think, also, that the attention of the Metropolitan Board might with advantage be recalled to the suggestion already made by this Institute, that the introduction of a Part (similar to Part VI. for party walls), having reference to questions of light and air in the Metropolis, would be a great public boon, as tending to diminish and prevent litigation on that difficult subject, and to simplify procedure when damage is caused by the erection or alterations of buildings.

The Committee then proceed to refer to certain details of the Draft Bill, which they think call for special remark, desiring to observe at the same time that they leave many other points without comment at present, but which will require more or less revision, before the Draft Bill can become law with any prospect of public usefulness.

## On Architecture in Belgium.

By R. PHÉNÉ SPIERS.

(Continued from page 92.)

By the great commercial prosperity of the country, and its large trade during the Middle Ages, a vast amount of wealth was accumulated, to which, as well as to the political and social freedom enjoyed by the people, we owe the development of a number of municipal and trade buildings of great size and magnificence. These buildings were of four kinds: 1. The Belfries, which were the emblems of civil liberty; 2. The Town Halls, where the town authorities assembled, and where justice was administered; 3. The Trade Halls, in which the commerce of the country was developed; and 4. The Guild Halls, buildings set apart for the protection of the various guilds or, as we term them, trades' unions. In the belfries were kept the records and archives of the town, before the town halls were erected, and in the upper part were placed the bells. One of the oldest belfries is at Tournai, but the largest and best known is at Ghent. Of the town halls, the most important are those of Brussels, Ghent, Bruges, Louvain, Oudenarde, and Antwerp. The requirements of these town halls were somewhat the same as with us, except that the number of offices was not so great. On the ground floor was a great hall with offices for civil marriages, committees, and courts of justice. In some cases there was a second floor, the original use of which it is not clear to see, as they are now invariably occupied by museums. The offices attached to these halls, and the staircase, were in the rear. Verticality of line predominates in nearly all these town halls, the façades generally divided by a series of slight buttresses between the windows, and decorated with two or more rows of statues or corbels, with canopies over the window heads, and cills alone marking the horizontal lines of the floors. Mr. Spiers then proceeded to describe what he considered the best specimens of this class of buildings, taking in his survey the Town Halls of Bruges, Brussels, and Ghent; the Hôtel de Ville, Louvain; the Town Hall, Oudenarde; the Hôtel de Ville, Courtrai; and the Town Hall, Antwerp. The Trade Halls are of greater antiquity than the Town Halls. The earliest of the former is that at Ypres, the foundations of which

were laid by Baldwin I. in 1201, and the right and left wings respectively completed in 1230 and 1285. We have here, therefore, the most ancient secular building of the middle ages of any large size. The main façade is 400 feet long, and has a massive square tower in the centre, with large octagonal turrets at each angle, which latter would have looked better if they had been carried down to the ground; as it is, they have a heavy and clumsy appearance. There are two floors, each consisting of a large hall extending from one end of the building to the other, the ceiling of the ground floor being carried by a row of pillars down the centre. Latterly this floor has been subdivided. The openings on the ground floor are all doorways, above which are windows, with pointed arches and tracery, to give light. The first floor has a series of very fine painted windows and arcades, or niches, with statues alternately, the whole crowned by a cornice of small shafts carried on corbels and a battlement. The necessary support for the tower almost cuts in two the great hall on the ground floor, which otherwise would have been the finest in existence. One of the rooms at the back of this hall is being painted with some remarkable frescoes recording the chief historical events of the town. Mr. Spiers, after describing the Trade Halls at Bruges, Louvain, and Ghent, and the 'Bougeries' of Bruges, Ghent, and Antwerp, proceeded to say that of the Guild Halls, the most interesting was that belonging to the Boatmen's Guild at Ghent. It was built in the first half of the 16th century, and its ornamental features and the quaint carvings on the walls show, to some extent, the influence of Spain on the country at that period. The arms of Charles V. and those of the guild are carved over the doorway. After referring to the Antwerp Exchange—the original building burnt down about ten years ago—the Tribunal of Justice at Bruges, and the Episcopal Palace at Liège, Mr. Spiers turned to the domestic architecture of Belgium. In no other country are the relics of bygone days found so close together or so little unaltered; and this is the more singular, because the country has not only been the field of civil war, but the 'cockpit of Europe.' To the progress of civilisation on the one hand, and of commercial projects on the other, we must attribute the ruthless destruction of all that is fine in Art; and it is, perhaps, to the lack of the latter, as compared with bygone days, that we owe the preservation of the domestic buildings of Belgium. In the Middle Ages she—then part of the Netherlands—took the lead in commerce; her docks and her halls teemed with merchandise, and her cities with large populations, resulting in the construction of a number of buildings of vast size, which at the present day are more than ample for her wants; and just as we, till within the last fifty years, had no need to build new churches or cathedrals, so in Belgium they have no need of more accommodation than can be found in their halls and residences, the solidly-built erections of their forefathers. The grass in the streets of Ypres or Ghent, the half-fallen houses of Mechlin, Antwerp, and Tournai, sad and mournful though they may appear to the political economist—to the architect, to the artist, and the antiquary, who picture their condition in bygone days, and who 'conjure' up old associations, these towns have a tenfold interest, and teach lessons not easily to be forgotten. The earlier domestic residences of Belgium, as elsewhere, presented more or less the appearance of fortresses. In those days it was literally necessary that 'every man's house should be his castle.' They were built of stone, with towers, gateway, and small external windows. There are remains of two of these houses at Ghent, and one—the Gravensteen—with its two octagonal towers and fine gateway, forms a picturesque group overlooking the market. The earliest houses are found at Tournai. They were built in rubble with stone dressings, and consist of long walls, occasionally with gable ends pierced with windows, square-headed and divided by a single column. In the thirteenth century, painted windows with mullions and tracery appear, and the houses have as many as three and four floors. The gable ends are remarkable features, being flanked with circular or octagonal turrets. The ground floor is sometimes raised, and then the basement, with a row of pillars to cover the vault, becomes more important. The most interesting series of buildings are those found for the most part in the north of Belgium, and more especially in Bruges, built wholly or in part with brick; they date from the fifteenth and sixteenth centuries. Many of them have received a complete coat of white-wash, which hides their material and the pretty effect which the red brick, with dressings of blue stones, must have produced. One of the earliest of these brick buildings is on the Grand Place at Bruges, and is similar in style to those found in the north of Germany. The windows generally of these houses are inclosed between piers which run from the top to the bottom of the building without a break or horizontal line, so that the floors are only indicated by the heads of the windows. These are square-headed, the space between the window head of one floor and the cill of the window of the next being decorated with black tracery. The building above-mentioned at Bruges has a flat roof, but generally all the houses have gable ends, and these are stepped. Though disagreeable at the first view, the eye soon becomes accustomed to these steps, and then they form the most picturesque skyline. At Louvain there is a façade which is decorated with the mullions and tracery of a large church window, the real window being cut out between the mullions. Two of the richest houses in Belgium are to be seen at Mechlin. They are built in stone, and the upper storeys advance slightly over those beneath. Towards the end of the 16th century the detail of the Renaissance began to creep in and influence the domestic architecture, and the vertical lines which abounded in the prevalent public buildings are supplanted by horizontal mouldings marking the several floors; the windows are always square-headed (which is the real and proper form for a domestic building, whether it be Gothic or Renaissance), and are divided by mullions and transoms. The lower portion of these houses is very simple, the decoration, if there is any, being confined to the head of the doorway. The ingenuity of the Renaissance architects seems to have centred itself in the gable ends, which, though generally bad in taste, by the constant variety and change in form and silhouette, give an aspect of picturesqueness of skyline not obtained by the somewhat monotonous stepped gable. The houses themselves are imposing from their immense height. At Brussels, on the Grand Place, are a number of these houses, in the design of which more freedom has been displayed than elsewhere, to the detriment of good architectural effect. At Antwerp, where the style is more severe, the result

is far better, and Mr. Spiers knows no more delightful town about which to roam, the streets between the Town Hall and the river being lined with houses 200 to 300 years old. He wished to draw especial attention to the shop-fronts, which were in every way applicable to the requirements of the present day; and he thought a hint also was to be taken from the manner in which they support the heads of their windows by an iron bar running across into the sides of the windows, an apparent support being given by two brackets, one on each side. There still remain at Ghent and Antwerp some wooden houses covered, as the case may be, with wooden laths or slate, where the floors project one over the other. The ground floors are generally of stone, with large windows, and the gable ends are sometimes elaborately carved. Mr. Spiers wished he could speak of the development of modern architecture in Belgium with the same praise that he did of the old work, or in fact with any praise at all. There are some new works—large churches—in course of erection, and fine public buildings; but with the exception of a new bank at Brussels, which is evidently the work of the modern French school, there is nothing which calls for one's attention; and this is the more singular, because in his (Mr. Spiers's) opinion Belgium holds the highest rank in the sister arts of painting and sculpture in Europe. The pictures of Gallait representing the feeling of the classical on the one hand, and those of Leys the feeling of the Gothic on the other, both took us quite by surprise in the Great International Exhibition of 1862. He visited the Triennial Exhibition held last year at Ghent, and was astonished at the immense resource of talent possessed by the Belgian painters and sculptors, while the architectural drawings were, without exception, the vilest he had ever seen—which is saying a great deal. (Laughter.) The only way in which he could account for it was that there is no academy or school of architecture in Belgium, so that architects are obliged to pick up their knowledge in the best way they can, as in England; there being, however, this difference, that the students do not seem to be imbued with those true principles of taste based upon a knowledge of good examples and of thorough artistic construction which in England oozes forth here and there, and which has, notwithstanding many drawbacks, resulted in the production of many buildings of which all Englishmen have reason to be proud. (Loud and prolonged applause.)

The CHAIRMAN trusted that, although Mr. Spiers's paper had been exhaustive, some remarks upon it would fall from those present. The subject was one deserving attention and the most careful study.

Mr. POTTER was sure that all concurred with Mr. Spiers's views, and he would move a vote of thanks to that gentleman for his interesting paper, and for the vast number of drawings and illustrations which accompanied it. Mr. Spiers certainly had alluded to stained glass and ornamental iron-work, but he thought that an evening could be very well devoted to each of these two subjects. Even if the ghost of Quintin Matsys could appear, he thought the apparition would be satisfied, for being left out in the cold, with the apology that nothing more could be squeezed into an hour's lecture. He had therefore much pleasure in moving a vote of thanks to Mr. Spiers for his very interesting and able paper.

Mr. ALDRIDGE had much pleasure in seconding the motion.

Messrs. BIRCH and PERRY having also spoken, the CHAIRMAN put the motion, which was carried unanimously.

Mr. SPIERS having responded, the meeting separated.

N.B.—We are again compelled to postpone the reports of several other meetings till next week.



### BUILDING CONTRACTS.

By a LONDON ARCHITECT.

SIR,—As a London Architect, conscious that the moot question of 'Building Contracts' vitally affects the status of architects, if not their very *raison d'être* in the community, I sincerely trust the question raised in your columns by 'A London Contractor' and taken up by 'A London Engineer' will be exhaustively dealt with. With this question are inseparably connected the questions of architectural education, architectural competitions and architectural remuneration; and this being so, I am not a little surprised at the reticence of architects on a subject that contractors and building surveyors have said so much about. 'A London Contractor' is evidently very capable of writing well and courteously on this topic; and although I disagree with his views, I hardly sympathize with the tone of wit and banter with which 'A London Engineer' has received them. They seem to myself to have been very temperately stated. I am, of course, far from asserting that the existing system is immaculate: contractors have, I dare say, much to complain of. They have, especially the country contractors, complained pretty strongly of late, for building is not what it used to be. I may go further, and say its operations are hardly as respectable as they were thirty or forty years ago; and, as a builder's calling is a noble one, and there are men of integrity who wish to honestly and usefully follow it, it is only natural there should be an outcry raised against its existing anomalies. Let us look back some forty years. The system of contracting for a 'lump' sum is, we know, a very old one; but up to that time it was by no means so prevalent in this country as it is now. In both London and the provinces the system of contracting by schedule and ultimate admeasurement of the work done was very common indeed. A builder in those days always knew that, however exacting might be the demands of the architect as to quality of work, or however fanciful his employer, he was sure, ere the settling up of the accounts, to receive the value of his work and material, or at least to have a voice in their assessment. In those days, every

architect in the provinces was a building-surveyor, as were many architects in the metropolis, and the architect was the sole assessor. A London architect *pur et simple* would, in those days, certify instalments from time to time, leaving the question of ultimate value in the hands of a surveyor (often a provincial one), nominated by himself and his client on one side, and by the builder on the other. It was a very defective system, for the architect took very little interest in the operation, thereby grievously neglecting the interests of his client. The surveyors and builders had it all their own way; the client used to get the worst of it, and the system came deservedly into disrepute and discontinuance. It was bad—I wish I could say that the present London system is much better.

We have now in exchange for it the system of 'lump' contracts; with this difference that, while forty years ago the town and provincial customs were nearly identical, they are in 1869 wholly dissimilar. In the provinces still, nearly every architect is more or less of a building surveyor, capable, and in the habit of, estimating and measuring up the works he designs. Exceptions there are to the rule; but the provincial rule is that the bills of quantities and the admeasurements of extras and omissions are prepared in the architect's office. The provincial architect does indeed consult with the builder, and usually hears all he has to allege before final decision; but, having so done, he makes up the accounts, and settles them in his own way. If he happen to be an ignorant, inexperienced, or unjust man, the contractor suffers by these bad qualities, and provincial builders are loud in their protest against his irresponsible exercise of power.

In London the custom is wholly different. To understand the difference one must take a glance at the influence of the Institute of British Architects, to which learned corporation every respectable London architect is supposed to belong. The influence of the Institute has been to discourage amongst architects the practice of estimating and measuring artificers' works. By a by-law of the Institute no Fellow (that is to say, no member of the senior class) is permitted to estimate or measure up any artificers' works but such as relate to his own buildings. I am old enough to remember the earnest protest against this by-law uttered by one of the most munificent benefactors of the Institute—the late Sir John Soane; and I have lived long enough to see the evil consequences of that by-law. It was established with the very excellent motive of inducing architects to devote more attention to the Fine Art they professed, the practice of which was at the time in danger of being absorbed in the squaring and abstracting of measured dimensions; and so far it has been useful in its day. But, unfortunately, it has tended to diminish our power, as well as our practice, of measuring and estimating works; and in the case of very modern practitioners it has resulted in the utter annihilation of both practice and power. There are now many London architects who know nothing of measuring and valuing artificers' work. I think 'A London Contractor' could very well explain that this is a very serious evil in the building trade—a huge annoyance to contractors themselves. Nor is that the only evil of the by-law (or rather the abuse of it): it operates most prejudicially against the interests of our clients; and deprives us all of not merely an accomplishment very necessary to the efficient service of our employers, but of a good and regular source of honourable income. 'In my early days,' said Sir John Soane, 'I used to estimate, measure, and value considerably for Messrs. Holland, the builders. I found the practice very conducive to my acquisition of practical knowledge, and believe it affords an honourable source of employment to young architects, an excellent school for future professional practice.' This was at least the purport of Sir John Soane's words: their exact text will, I doubt not, be found in the Archives of the Institute—too late, I fear; for the more Sir John protested, the more the Council wouldn't listen to him; and we see the consequence—young architects, with only half their year employed, obliged to send their own work—their own bread—out of the office, obliged to call in an independent building surveyor or quantity taker, whose 'reduced rods, cubic yards and feet,' with all the rest of it, they have no other resource but to take unchallenged; so that, as far as the London custom is concerned, the contractors and surveyors (small blame to them) have everything again in their own hands; as our Gallios of the Institute care 'for none of these things:' that is to say, with poor Mantalini, 'the dim'd total' of pounds, shillings and pence. Our clients do, it seems, care about them. They are beginning (witness the Sick Asylum competitions) to take the law—the law which we should, but don't, administer—into their own hands; and, as might be expected, with very little discretion, and no benefit to anyone; for what does the general public know of the mysteries of building?

My letter, already too long, has barely half dealt with the subject raised by 'A London Contractor.' It will be seen that, though I admire the manner of his communication, my sympathies are with the matter contained in that of 'A London Engineer.' I see no great hardship to contractors in an unskilled capatillist, and a contractor 'cunning of fence,' constituting any respectable architect a little equity judge in his own office; especially as the contractor has always access to the works in progress, and access at all times to the ear of the architect, by himself, his clerks, or (where the contract is large) his surveyor. The client is well-known to have no such facilities, even if he had the technical skill to know when and how to use them. His sole advocate, or rather guardian, is the architect, in whom he confides, and ought to confide, to do justice between employer and contractor. It is no answer to allege that some architects are afflicted with want of principle, want of knowledge, or 'infirmity of temper.' So much the worse for them in the long run. Clients are expected to abide by the arbitrament of their architects, and why should not contractors?

I feel sure that the client's case has not been half stated in this controversy. Contractors feel their own grievances; but have, I think, been somewhat oblivious of the interests of employers. It is the province of the architects to see these are not forgotten. I think architects do forget them; forget their own interest and greatly endanger the welfare of the building trade, when they shrink as they do from taking their proper position as sole referees between employers and builders, and maintaining it with a high hand. Do we not always see a judge in a court of law refer building disputes to an arbitrator? What arbitrator, even though he be a surveyor or an architect, can possibly know so much of a case as the one



who, from the cutting of the first sod to the applying the last coat of varnish, has been nominated by both employer and contractor to adjudicate between them? His office is very properly a petty court of equity, which of course a higher one can always supersede, though I think not always improve upon.

A LONDON ARCHITECT.

BY A LONDON CONTRACTOR.

SIR,—As the 'London Engineer' who writes on this subject in your last number considers that 'nothing can be fairer than that a builder should have a voice in nominating the surveyor who is to take off the quantities of any work for which he is to compete, and as he is also willing to agree in an attempt being made by the Institute and the Builders' Society to frame an improved set of 'general conditions,' I am more inclined to congratulate myself on that which he approves than to grieve over that which he condemns.

The 'London Engineer' considers that I am asking for his sympathy with 'only imaginary grievances;' and with reference to my assertion that there is no power at common law, and but a doubtful one in equity, to compel an architect to give a certificate without a special clause in the contract empowering, he asks, 'Could the architect be ignorant of possessing this terrible power if he ever exercised it, or heard of any one who did?' and remarks that 'any case that stands in this marvellous position cannot do much harm to any one.' Now, in writing the articles which you have inserted on this subject, I was careful to avoid all reference to personal cases, and endeavoured to get these questions argued as points of abstract justice; but I was equally careful not to bring forward any grievance for remedy which I did not know to have been the cause of suffering and loss either to myself or some other member of the building trade. My only knowledge of the law as applied to this question of the issue of certificates is based on the experience of a friend who was the victim of these very circumstances, where thousands of pounds were involved, and to whom I must refer the 'London Engineer,' as to whether 'this marvellous position cannot do much harm to any one.' I am afraid the 'Engineer' will think he has answered this with his stock argument, applied in some form or other to every one of the points referred to by me, namely, that the evils complained of do not 'often happen;' but, in addition to pointing out that this belongs to the 'only a little one' school of argument, I must urge upon him that if it were a fact (which I do not admit), it would not justify the architects in refusing to insert a clause protecting the builder from the possible inconveniences complained of; nor could any honourable man decline to forego the power of doing an injustice, but insist on still retaining

The right divine to govern wrong.

The 'Engineer' laughs at the idea of any builder requiring to know that it is necessary to have a clause in their contracts giving them power to suspend the works in the case of inability or refusal on the part of the employer to pay what is due; but if he will have patience to listen, I should like to tell him a tale, the moral of which is that, even where the usual custom of payment by instalments is adopted, it may still be necessary.

Once upon a time a young contractor, with only a moderate capital, was fortunate enough (as he thought at the time) to obtain a contract for some extensive works at a nobleman's country seat. Large additions to the contract were made, but as the nobleman fell ill during the progress of the work, my young and inexperienced friend the contractor was content not to worry his lordship for written orders, as he should have done under his contract, but took the verbal orders of the architect. My lord died, and his heirs and executors refused to make any further payments, on the ground that no written orders had been given, besides raising several other objections. Having sought legal assistance, the contractor was advised by the present Mr. Justice Lush, then a member of the bar, that he had better finish his contract before taking action. Accordingly, my young friend had, at much inconvenience, to spend many thousands in completing the work before he could reach 'the beginning of the end,' that end being a wearisome Chancery suit, followed by a still more wearisome reference, ending, it is true, in his obtaining the greater part of his claim, but at a cost of time, money, and anxiety which would have raised the case, even in the opinion of a 'London Engineer,' beyond an 'imaginary grievance.'

I had said 'that all points in contracts having reference to legal questions should be settled by the lawyers and not the architects,' but the 'Engineer' finds a difficulty in separating them. My meaning was that the lawyers should frame those portions which are now called the 'general conditions,' and the architect the specification describing the works. I confess I do not see how, under this arrangement, a lawyer (that *bête noire* of the engineers) could 'meddle with' the mixing of mortar, or revise his plans.

I am afraid my remarks on the arbitration clause were a sadly confused performance. The 'Engineer' evidently can make neither head nor tail out of them. He begins by converting my humble confession that I was in such a minority, even with the members of my own trade, in seeing advantages in a lawyer as arbitrator, as to make it useless wasting your readers' time, or my own, in fighting at such odds as 'nine-tenths of the builders and nineteen-twentieths of the architects,' into a want of respect for architects and engineers. He further says 'I have never heard an important case where the architect who designed or superintended the work was appointed as arbitrator by a judge in chambers or out of chambers.' Nor I! It is my belief that there is not a judge on the bench who would not decide that such a course was contrary to the first principles of justice. But the 'unkindest cut of all' is where the 'Engineer,' after doubting whether I maintain that which I unreservedly deny, hesitating as to whether he understands the 'remainder of the communication,' and only dimly fancying that I object to the architect of the works deciding all questions, winds up with the air of a person who has not listened to a word you have been saying, by asking whether all architects do not desire this, and 'is there anything wrong in doing so?' As I spent a whole column in explaining that I thought there was, I clearly must not repeat what I said.

It is beside the question, no doubt, and I have already trespassed con-

siderably on your space and good nature, but I should like to ask a 'London Engineer' why he is so much tickled by my reference to the 'Platonic Dialogues,' that he wings his parting shaft with a second reference to it. Of course he is aware that the subject of keeping an architect to architecture, and a lawyer to the law, is more than once used as an illustration in that celebrated work, and will easily understand therefore how it came into my head; but can he have been under the misapprehension that I had read it in the original? I assure him I am incapable of it. I only know the work through Whewell's translation, and the 'Engineer' will, I think, admit that this book, though 'to the purpose,' contains only such 'easy things to understand' as to be within the comprehension even of

A LONDON CONTRACTOR.

## LEGAL.

Court of Common Pleas, Dublin.—February 15.

(Before the CHIEF JUSTICE and a Common Jury.)

This was an action brought by Mr. James Scanlan, builder, against Mr. J. M. Craig, the proprietor of the 'Pembroke Drug Hall,' Upper Baggot Street, Dublin, for the sum of 72*l.* 6*s.* 6*d.*, balance due at foot of a building contract, and for 50*l.* claimed for loss incurred by reason of defendant's having withheld the specification and other documents, and for the neglect of the defendant's architect in not supplying the necessary working drawings and directions for carrying on the work.

The defence was that the sum of 59*l.* 7*s.* 6*d.* only was due, which sum was kept back by defendant as penalties for the non-completion of the contract on the day named in the agreement between the parties.

The facts of the case as given in evidence were—that plaintiff engaged in April, 1868, to execute certain works for the sum of 225*l.*, according to the plans prepared by Mr. Wm. Sterling, architect, the work to be finished by June 3, 1868, under a penalty of 2*l.* per day. The contract was signed on April 21, and the works commenced on that day. The contract was based on a bill of quantities, which was prepared by the architect, and no working drawings were given at the time. Plaintiff alleged that it was arranged with the architect to meet on the day after the contract was signed, to get the working drawings, &c. Mr. Sterling, who was then surveyor to the Pembroke Township, resigned his situation on April 23, and got a fortnight's leave of absence pending the appointment of his successor, and did not give plaintiff the instructions required, and could not be seen except on a few occasions during the progress of the works. Some of the working drawings were not given for one month after the date named for the completion of the work.

When the works were finished, the architect and contractor met to settle the accounts; it was then arranged to forego the claim for penalties on either side, and after giving credit for omitted works and allowing for extra works, the sum of 72*l.* 6*s.* 6*d.*, as alleged by plaintiff, was found to be due, but according to the architect's statement there was only 59*l.* 7*s.* 6*d.* due. The defendant refused to pay either sum, and claimed the sum of 2*l.* per day for every day the works were unfinished after June 3—the works were not finished till July 11.

The Solicitor-General, in opening the case on the part of the plaintiff, said that in the absence of his learned friend, who was to have opened the pleadings, he would briefly tell the jury the nature of the case which they had to try. The action had been brought by Mr. Scanlan, his client, who was a contractor for buildings, and whose reputation was well sustained in that professional capacity, against the defendant, who was a druggist, whose establishment was situated in Upper Baggot Street. The precise facts of the case were as follows:—In April, 1868, Mr. Craig, the defendant, had been anxious to effect alterations in a house in Upper Baggot Street. He employed Mr. Sterling as his architect and Mr. Scanlan as contractor. Engaged as the contractor, an agreement is entered into between all parties, and that agreement he (the Solicitor-General) now produced. [Document of agreement read.] The contract was for a sum of 225*l.*, and the works executed were admitted to have been properly done, even according to the statement of the witnesses who might, perhaps would, be produced on the opposite side. He would, before going further, remind the jury that the contract had been a contract accepted by tender; and after the agreement had been made, Mr. Scanlan proceeded to execute the works.

The point was this, the necessity to have 'working drawings,' and these working drawings ought to have been supplied by the architect engaged in this transaction—a Mr. Sterling. Now Mr. Sterling is absent when those drawings are absolutely required. Absent in Belfast and various other places; and after the plaintiff had received various communications, the working drawings appeared. The character of the work would involve a matter of great detail. The learned counsel then proceeded to particularise the various items set forth in the specification, and having done so, said that the plaintiff would himself tell them that he could not carry out the suggestions—in fact, the propositions of Mr. Craig—for the want of the plans, which were not forthcoming; and towards the end of June, last year, Mr. Scanlan said to the defendant, 'I have sustained a great deal of loss, my time has been occupied, and I have been idle instead of doing my work. Now I give you warning that I hold you responsible for the loss I have sustained.' Sterling comes back and says to the plaintiff, 'You had better look sharp, you are bound to have the works done on the 3rd.' They were completed on the 11th. Plaintiff then asked to have them taken up. The answer again is—and that from defendant—'I cannot take up those works until Mr. Sterling comes;' Sterling only returns on August 7, when he visits the work, and after fully examining it, he sits down with plaintiff and tells him that the amount of his claim is 72*l.* 6*s.* 6*d.*

The Chief-Justice—When was that?

The Solicitor-General—On August 7. And that is what we complain of—the delay. Mr. Scanlan, having accepted this settlement, which was made in one of the rooms in the premises in Baggot Street, Sterling left the room, leaving Mr. Scanlan to await his return. Into another room he

went, where defendant and his father-in-law (who, I believe, is the author of this litigation) were. Mr. Sterling comes back, and, with a long face upon him, seeing that the matter was broken up, says, 'Mr. Craig's father-in-law has come in, and refuses to pay the amount we have agreed on; he then offers 40l., which my client refused; subsequently 50l. was offered. It was also refused, and what we are here now for is the sum of 72l. 6s. 6d.; and we also claim damages for the loss of time and the delay. The father-in-law, as I have said, had to be consulted, and, in that consultation, the reduction, such as you heard, was suggested. They say that, according to the contract price, you only did work to the amount of 203l., and that we gave you 150l.; and as to the rest of the contract, you owe us for forty-four days, at the rate of so much per diem, for the non-completion of the works, a sum of 88l. That, gentlemen, is substantially the case for you. You will have to try whether plaintiff has executed those works; whether, having done so, he is entitled to his fair and legitimate demand for the same, having due regard to the execution of the contract and the instructions which he received, as will be proved to you in evidence. I will add that I do not blame the conduct of Mr. Sterling; but at the same time I think that it was rather hard that my client should be called upon to pay penalties, and penalties at the rate of 2l. a-day, for that which he ought not in justice to be made in even the slightest degree liable.

After a large number of witnesses had been examined,

The Chief Justice, addressing the jury, said: Gentlemen,—The whole question in this matter—about which we have heard so much, and respecting which we have wasted so much time—actually resolves itself into a very narrow and limited compass. The question really is—What is the sum due—whether it is 72l. 6s. 6d. or 59l.? Now, taking the matter in its fullest light, having regard to all the facts of the case—the witnesses upon the one side, the evidence upon the other—it will be for you, gentlemen, to say whether you accept the evidence given for the plaintiff for his demand for the 72l., or the evidence adduced for the defendant as regards the deductions.

The jury were then directed to retire, and after three minutes' deliberation, they returned into Court with a verdict for the plaintiff for the full amount claimed, and 6d. costs.

Counsel for plaintiff, the Solicitor-General, Mr. Falkiner, Q.C., and Mr. Philip Keogh; attorney, Mr. Thomas J. White. For defendant, Mr. Carleton, Q.C., Mr. Monahan, Q.C., and Mr. E. M. Kelly; attorney, Mr. John Frazer.

#### Middlesex Sessions.—Feb. 12.

(Before the ASSISTANT-JUDGE.)

##### THE EXTENSIVE BRICK ROBBERY.

Robert Manning and Thomas Crofts, the latter a contractor in a very large way of business, were indicted for stealing and receiving 218,000 bricks, value 400l., the property of William Henshaw.

Mr. Metcalf and Mr. Collins prosecuted; the Hon. G. Denman, Q.C. (specially retained), and Mr. F. H. Lewis defended the prisoner Crofts. Manning was undefended.

The case excited great interest owing to the superior position of the prisoner Crofts.

Crofts had several large contracts on hand for the erection of public buildings, and through one of his workmen he induced Manning, who was employed as 'tally-man' by the prosecutor, to sell him the enormous number of bricks mentioned at 4s. and 5s. a thousand, and for an unlimited supply of drink. Evidence was given tracing the bricks from the premises of the prosecutor to various parts of London, where Crofts had contracts on hand, and as each brick bore a peculiar stamp, there was no doubt about their identity.

The jury found both prisoners guilty.

The Assistant-Judge, in passing sentence, said the jury had felt constrained by the evidence to find a verdict of guilty, and he thought that no one else in court who had heard the evidence could have come to any other conclusion. The prisoner Crofts was a very different person to those whom they usually had the misfortune to see in the dock. He was a person surrounded by wealth, and made a deliberate arrangement with his own servant to commit a robbery. He should sentence Crofts to five years' penal servitude; the other prisoner to eighteen months' imprisonment with hard labour.

## NEW BUILDINGS AND RESTORATIONS.

**New School at Leamside.**—A new school at Leamside, near Durham, has lately been opened. The buildings are in the style of the thirteenth century, and comprise a large school room, with class room, porch with bell cot over it, and the usual out-offices. Accommodation is provided for nearly eighty, at a total cost of 450l. The works have been carried out by Mr. R. Sanderson, from the designs and under the superintendence of C. Hodgson Fowler, M.R.I.B.A.

**Restoration of the Transepts of Hexham Abbey.**—Of the noble Abbey Church of Hexham, the choir and transepts alone remain, the magnificent nave, cloisters, and chapter house having been almost completely destroyed. The choir was restored, and the east end rebuilt some few years ago, considerable damage unfortunately being done by injudicious alterations in rebuilding. The works now undertaken embrace the thorough restoration of the transepts, the removal of the Italian doorway inserted in the north transept, and the restoration of the thirteenth century vestibule of the destroyed chapter house, to serve as the new entrance. The great western arch of the central tower is to have its filling-in rebuilt on its western face, so as to open the arch to the church. The various works are to be at once begun, and will be carried out from the plans and under the able direction of R. J. Johnson, Esq., F.R.I.B.A., Architect, of Newcastle, whose name will be a guarantee that the work will be carried out in a thoroughly conservative and artistic manner.

**St. Margaret's Church, Durham.**—The chancel of this ancient Norman church has just been refitted, under the direction of C. Hodgson Fowler, Esq., architect to the Dean and Chapter of Durham, who were large contributors to the restoration. The works just completed comprise the removal of the plaster ceiling, and the opening out of a good 17th century oak roof, new pavement of stone and tile, oak choir seats, and new altar vestments. A three-light window, in the style of the local 15th century work, has also recently been placed in the east wall of the south aisle, and has been filled with extremely fine glass by Messrs. Clayton & Bell.

**Re-opening of Sherburn Hospital Chapel.**—The chapel of this ancient foundation was restored some years ago by the late Mr. Austin, but was burnt down in the beginning of 1865. It has now been rebuilt and improved, under the direction of Mr. R. J. Johnson, architect, of Newcastle.

**A new Congregational church** has been opened at Nether Kellet, Lancaster. It is Gothic in style, stands about 30 yards from the road, and is closely contiguous to the school-room. The dimensions of the building are 43 feet by 27 feet, and accommodation is provided for seating 200 persons comfortably. The building is of freestone, clean chiselled and filled in with six-inch coursings. In the centre, fronting the road, there is a bell-tower, terminating in a spire, built, we believe, to meet the wishes of some of the inhabitants, who have a prejudice in favour of being called to church by a bell. The entrance is by a porch at the north end, and on the south side is the vestry. The interior fittings are neat and simple in arrangement, the seats being open and of stained wood. The desk is at the south end, and is a plain, unpretending structure. The architect was Mr. John Thompson, of Lancaster.

**The Lord Bishop** of the diocese, the Duc d'Aumale, and Miss Porter of Birlingham, have each given the munificent donation of 500l. towards rebuilding the parish church of Bishampton, and Mr. Preedy, of London, has been engaged as the architect.

**Munificent Gift to the Town of Bolton.**—On Saturday, Dr. Chadwick, of Southport, presented to the town of Bolton, where he formerly practised, 5,000l. towards the erection of modern dwellings for the poor, and an orphan asylum. Only twelve months ago Dr. Chadwick made a bequest to the town of 17,000l. for the same object, so that the total amount of his gifts is now 22,000l. Plans have been passed for the erection of two blocks of dwellings, in the Italian style of architecture, none of which will contain less than three bedrooms, while the end houses of each block will be carried up an additional storey.

**Early in May** the foundation stone of the Smithfield Martyrs' Memorial Church is to be laid, half of the required money having been subscribed. It is to be erected in the St. John Street Road, upon the site purchased for a new district church in Clerkenwell, adjoining Smithfield; to take 8,000 of the 25,000 of the population of the parish of St. James's. The Council of the Bishop of London's Fund have granted 1,000l. It is to contain special memorials of all the martyrs burned at Smithfield during the reigns of Henry VIII. and Mary, and will have a very noble memorial tower.

**The New Church of St. John the Evangelist**, in the parish of St. George's-in-the-East, was consecrated on the 12th instant. The building is of the decorative Gothic style, from the designs of Messrs. F. and H. Francis. It will afford sittings for 750. The cost, without extras, was 3,500l.

**Memorial Church at Oxford to Archbishop Longley.**—It is proposed to erect, within a few paces of Magdalen Bridge, Oxford, a church which shall be worthy to be a memorial to the late Archbishop, and an ornament to the University of which he was so distinguished a member. Accommodation will be provided for at least 1,000 persons. Probable cost 15,000l. to 20,000l. Archbishop Tait, his successor, and the Bishop of Oxford, have both promised their support.

**The Restoration of St. David's Church, Marthyr Tydfil**, is expected to be completed in the Spring.

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

**Mr. E. R. Robson**, the Architect and Surveyor to the Corporation of Liverpool, has resigned his appointment. Mr. Robson was appointed in 1864, his predecessor, Mr. Weightman, being retained as Consulting Surveyor for twelve months afterwards. Mr. Robson's principal architectural works during his term of office have been the completion of the extensive municipal offices in Dale Street, commenced before his appointment, the works at the Stanley and Newham Parks, the erection of two new Bridewells, large additions to the Borough Gaol, the north Haymarket, the Judges' Lodgings, and other public buildings. In addition to these works he has planned and carried out extensive street improvements in Liverpool, and had charge of the immense purchases of property connected therewith, and of the large landed estate of the Corporation. He also prepared designs for a Fine Art Gallery, and for the rebuilding of St. Anne's Church, which are not yet commenced. Mr. Robson was formerly the architect to the Dean and Chapter of Durham. We believe that Mr. Robson intends practising his profession in Liverpool. The salary of the appointment thus rendered vacant has been for some years 1,000l. per annum, clear of all office expenses.

**Marble Statue of D. Sassoon**, by T. Woolner.

A sculptor must be a bold man to bring his offspring into the presence of the marble children of the mighty Florentine master. The gigantic David of Michael Angelo, even when only shadowed in plaster, looks down, as if in half unconscious contempt, on a modern intruder. But it is in the presence not only of the copies, but of some of the actual work of the unrivalled compeller of marble, that we are invited to look at a statue of to-day.

Mr. Woolner, we feel sure, did not think of this when he sent his recent marble statue of David Sassoon to be exhibited at the South Kensington Museum. In such company, and under the ever-shifting light shed down from the glass overhead, it is impossible to form a fair estimate of the merit of the work. We see the glistening white of the new cut marble, fresh and dazzling among the more subdued tints of the surrounding objects; but the figure stands too high on its pedestal to be seen close, and fades into one among many of the clustering ornaments of a fairy-like palace of art, when seen from a distance. At every hour of the day the shadows of the figure alter; so that no judge of sculpture can form an opinion as to what would appear to be its actual merit if seen alone, against a background of crimson cloth, and under a proper light. The face appears, so far as one can see it, to be characteristic and well cut. There is a certain degree of dignity in the drapery. There are marks of want of finish, especially in the hands; and the white surface of the marble is cruelly veined with blue. The statue claims attention, and we think that, if judiciously placed and properly illuminated, it would claim admiration. But it is rarely the case that a statue is to be seen in this country under circumstances such as can be approved by a sculptor.—BRAS DE FER.

#### The Architectural Museum.

The Council of the Architectural Museum appointed on the 15th instant Mr. Joseph H. Wallis curator of the Museum. The new building for the Museum being now practically completed, the work of removal from South Kensington will commence at once, and the Council confidently hope to be able to announce the re-opening of the Museum in its new and permanent home for an early day.

It deserves to be generally known that the intention of the Museum is to arrange for the instruction of carvers and other classes of art-workmen and students in drawing and modelling of natural forms and architectural ornament. The newly-appointed curator will have the conduct of this instruction, and the testimonials which led the Council to appoint him give, it is understood, the best guarantees for the efficient conduct of this work, the value and importance of which can perhaps hardly be overrated.

The classes will not, it is understood, form part of the South Kensington system, or be affiliated to that Institution in the first instance, the Council having very wisely judged it best to begin entirely unfettered by any Government control or Government assistance. For our part we hail this decision as a step in the right direction. The Museum has so long been eclipsed and threatened with total absorption by its great rival, that we welcome its reappearance almost like an emancipation. That there still is an Architectural Museum, and that it has a home of its own built for it, is mainly due to the indefatigable exertions and dauntless energy of its Honorary Secretary, who has laboured in this cause to an extent of which very few have any idea.

#### Notes for Connoisseurs.

The Directors of the Bibliothèque Impériale of Paris have taken a step which has given rise to considerable discussion. The establishment possesses a large number of antique monuments, with bas reliefs and inscriptions, which could not be exhibited for want of space. The Parisians were surprised the other day by seeing what looked not unlike a quantity of funeral monuments in the garden of the establishment, on the side of the Rue Vivienne. It is objected that the effect of the atmosphere will soon dispose of the inscriptions and sculpture, and that the garden now looks like a graveyard. The latter objection is puerile, while the former may or may not have any force in it, according to the nature of the material. The directors of the 'Ecole des Beaux Arts' have also converted a fine paved court into a museum of casts; but in this case a glass roof has been thrown over what was lately open to the sky, and thus a most valuable gallery of ancient sculpture has been formed.

The sale of the Delessert Gallery is announced to take place at the residence of the deceased, 172 Rue Montmartre, Paris, on March 15 and following days; the sale will last four days at least, there being no less than 250 pictures to be disposed of. The sale catalogue is not yet ready, but while awaiting it we may say that the Flemish school is the best represented, there being amongst others very fine examples of Teniers, Jean Steen, Hobbema, and G. Van de Velde; but the gem of the collection is the small Holy Family of Raphael, known as the 'Sainte Famille de la Maison d'Orléans,' which will certainly give rise to warm competition.

#### The Emperor's Prize.

As most of our readers are probably aware, this prize was instituted a few years ago by the Emperor of the French, and is awarded once every five years. It is a money prize, the amount being 100,000 francs, and is given to the artist who within the period of five years has produced the greatest and most important work. In the present year this prize again becomes due, and as the time approaches for the award to be made, many are the speculations and surmises as to who will be the fortunate recipient. Four gentlemen are supposed to have good chances, these chances varying of course according to the individual tastes of their friends and backers. They are:—

- Mr. Charles Garnier, for the new Opera.
- „ Viollet-le-Duc, for the 'Château Pierrefonds' and for his 'Dictionnaire.'
- „ Duc, for his additions to the Palais de Justice.
- „ Meissonnier (miniature painter), for his last pictures.

The first of these gentlemen has perhaps the least apparent chance of the four; in the first place the Opera has been an immense time building, and secondly there are those who have already plenty of real or imaginary faults to find before it is finished. Then there is M. Viollet-le-Duc, the value of whose archaeological works is acknowledged even by those who are not altogether of his way of thinking. His restoration of the Château of Pierrefonds, near Compiègne, has been recently completed for the Emperor, and those who think that he followed rather than led his Imperial master in matters artistic, will tell you that M. le Duc's chance is all the greater, because in honouring the servant the master honours himself. The

architect of the Palais de Justice, M. Duc, is no courtier, and the handsome façades next the river are as yet invisible, inasmuch as the wretched houses in which many of the executive authorities of Paris are at present temporarily housed, are not yet demolished. Not until these have been swept away will M. Duc's creation be seen to advantage—we had almost written be seen at all—from the Pont Neuf. Perhaps the greatest favourite of the four is M. Meissonnier, for the popularity of a painter to that of an architect of equal talent is as five to one, if not ten to one. Meissonnier is the greatest of French artists since *Ingres*, though this is not saying much in these days of Imperial materialism. Meanwhile all four are secretly not without hope. *Nous verrons.*

#### Artistic and Archæological Exhibition at Chartres.

The Archæological Society of the department of the Eure-et-Loir announces an international exhibition of the Beaux Arts of all kinds, and an exhibition of ancient works of art and curiosities, including sculpture, painting, tapestry, furniture, arms and armour, china and earthenware, books, &c., either the production of the department, or of interest in connection with its history or archæology. In order to induce collectors to contribute to the archæological portion of the exhibition, the committee offers to defray the costs of packing, unpacking, and transport, if so desired; and the members of the committee propose to act in turn as guardians during the night as well as the day, together with the staff of the exhibition, over the treasures entrusted to them. All declarations are to be made before the end of the present month of February, addressed to M. Merlet, Secretary of the Committee, Chartres. Works are to be sent in between April 1 and 15, and the exhibition is to be opened on May 1, and remain open about a month. Prices may be sent in with a view to the sale of works of art, and there will be a lottery organised by the committee, and a number of prizes awarded to artists. The exhibition of modern art includes architectural works and engravings. This is not the first instance of an archæological exhibition being held at Chartres. The same society organised one in the year 1838, and achieved great success; the plan of the present one is, however, much more extensive than the former. The time selected for these exhibitions is that of the great agricultural exhibition of the department, which will draw a very large concourse of people. Architects who have not yet seen the Cathedral of Chartres will have additional reason for paying a visit on the occasion.

#### India.

*Engineering.*—Since the beginning of October last a uniform rate of charge for telegraph messages has been fixed for the whole of India, viz., one rupee for ten words. In the first month of the new rate there was a loss amounting to 8,000 rupees; but in November, when the public had become aware of the boon, there was a gain of 3,500 rupees on paying messages.

A trial was recently made at Ballygunge with one of Norton's tube wells, but without any notable success, the wet and sandy soil having choked the holes through which the water is pumped up. In the Madras Presidency, however, these pumps appear to have been attended with better success; several experiments have been made with them at Madras, Bangalore, and elsewhere; and now they are being sent into the Godavery district, which is suffering from want of water.

Orders for the commencement of the great irrigation works in Behar have been issued by the Government of India.

A commission has been appointed at Bombay to enquire into and report upon the different schemes for draining Bombay.

An English company, says the *Friend of India*, has received a concession from the Persian Government, conveying to them the sole right of making railways in Persia for the next twenty years. A contractor has already left to commence at once the construction of a short line from Teheran to Rey, a fashionable suburb, where the wealthy Persians combine pleasure and devotion. Between that place and the capital a weekly passenger traffic of forty thousand souls is expected. The line is to be completed for less than 100,000*l.*, and will, it is estimated, yield a good dividend, exclusive of an 8 per cent. guarantee. We may next expect to hear of an undertaking to connect Teheran with Bussorah or some point on the route to Mecca. It is impossible that the enormous pilgrim and commercial traffic in that direction can be long overlooked.

Mr. Lee Smith, Chief Engineer of the Lahore and Peshawur Railway, has been telegraphed to, to remain two months longer in England to arrange for the ironwork of the bridges over the Ravee, Chenab, and Jheelum. It is stated that on this line the low-rates system is to be carried out, in which case it will take nearly a generation to complete the line.

The works at Khadakooahla, for the supply of Poona with water, have been vigorously commenced, and will be carried out under the direction of Lieutenant Bucks, R.E.

*Architecture.*—The following is the Latin inscription on the foundation-stone of the new Bombay University, which was laid by Sir Seymour Fitzgerald on December 29 last:—

Hunc Lapidem Primum Ædificiorum Universitatis  
Bombaiensis  
Posuit vir Honoratissimus Gulielmus Robertus  
Seymour Vesey Fitzgerald,  
Ordinis Præclarissimi Stellæ Indicæ Eques Amplissimus,  
E Secretis Regniæ Consiliis,  
Præfecturæ Bombaiensis Gubernator,  
Universitatis Cancellarius,  
Anno Tricesimo Secundo Victoris,  
Britanniarum Regiæ  
Et Imperatricis Regionum Indicarum  
A.D. MDCCCLXIX.

The main building of the new Municipal Market on the Esplanade at Bombay is making rapid progress. The corner portion of the building, the upper part of which it is intended shall be used as municipal offices, is rapidly approaching completion. One of the ornamental marble sculptures has lately been placed in position over the centre doorway. This work of art is one of the largest which has hitherto been attempted in Western India, and has been carried out by Mr. Kipling, of the School of Arts. The subject is an allegorical representation of the progress of agriculture.

A large portion of the ironwork for the market has arrived from England, and has been partly erected.

The plans for the new Telegraph office at Calcutta have been completed and approved by the Director-General. They had then to be submitted to the Lieutenant-Governor. The building will be erected at the south-east corner of Dalhousie Square, at a cost of 5 lakhs.

About four years ago Mr. Sorabjee Jamsetjee Jejeebhoy, during his travels in Guzerat, contributed the munificent sum of Rs. 35,000 for the erection of a building for the High School at Surat. This sum being inadequate for the purpose, a similar amount has been offered by the Government for the completion of the building.

The new Scotch church at Kurrachee, named 'St. Andrew's Presbyterian Church,' was formally opened for divine service on Saturday evening, January 2.

The Tanna Jail in Bombay is to be rebuilt at a cost of 2,75,000 rupees. The old buildings were of a worthless character, and are unfit for use as a prison. As reconstructed, the buildings will accommodate 655 prisoners, and afford a fair proportion of hospital accommodation besides. Of the 655 prisoners, 572 will be confined in sections, 73 on the separate system, and 10 on the solitary system. The new Tanna Jail is to be considered an instalment of a general scheme proposed by the Bombay Government for increasing the amount and improving the character of the jail accommodation of that Presidency.

The Sanitary Commissioner of Madras, at a recent visit of inspection to Kumpote, condemned the whole of the barracks for European troops at that station—those in process of construction as well as those already built, and has suggested that new ones should be erected on the rising ground on the site of the present recurrence.

A French Theatre was opened at Cairo on January 4. The building was only commenced on October 15 of last year. It was therefore erected in less than three months!

The Architects of Berlin are at present engaged in considering the best means of effectually protecting their designs against unauthorised reproduction, whether by actual execution or by lithography, wood-cuts, &c. It is intended to name a small commission to inquire into the matter, and to prepare a petition containing the results thus obtained, and requesting the 'Bund' to add the item of architectural designs to the list of such mental productions as are now protected by the Prussian Copyright Law.

The statue of an Amazon was, within the last few months, discovered in the Vincolo di San Nicola di Tolentino, at Rome, and passed into the possession of the Cavaliero Ugo. It is about 8 feet high, of Pentelic marble, and but very little damaged, principally at the hands and feet. The attitude somewhat resembles those of the Amazons in the Vatican and Capitoline Museums, but is considered far above either in artistic value. The statue has now been purchased by Dr. Helbig, on behalf of the Prussian Government, for the sum of 16,500 francs, and is on its way to the Museum at Berlin.

#### Palastine Exploration Fund—The Foundation of the Temple.

Lieutenant Warren's last letters from Jerusalem give an account of the results up to the present of a shaft sunk at the south-east angle of the Haram Area. The rock at this point is reached about 70 feet below the present surface of the ground. The slope is very considerable at this point. The rock is soft and decayed. The corner-stone is let into it about 2 feet, and is about 4 feet high. On the second stone three letters in red paint were found. The stones are all described as in the most excellent preservation—as perfect as if they had been cut yesterday. A marginal draft was observed along the top of each, exactly like that in the perfect specimens found above ground, except in the stones of the fourth course, where the draft was different from that in any of the others. The marginal drafts, and about 2 inches round the projecting surface, have been picked over with an eight-toothed chisel, about eight teeth to the inch. Within this a point or single-pointed chisel has been used. The letters are in red paint, apparently put in with a brush. The larger letters are 5 inches high. The colour of the paint appears to be vermilion; it easily rubs off on being touched with a wet finger. Splashes of it, as if from a brush, are lying about. Close to the angle (3 feet to the east) a hole was found scooped out of the rock, about a foot across and a foot deep. Standing in this hole is a small earthenware jar. Further to the north, and still close to the wall, the rock was found to be cut away in the form of a semicircle or horse-shoe, 2 feet wide, and about 2 feet 8 inches deep. Lieut. Warren suggests that the horse-shoe hole was for the purpose of allowing the tackle to work when lowering the corner stone into its bed. Pottery, broken into very small fragments, and a long rusty iron nail were found, but no tools. On driving a gallery along the second course to north, it was found that the first stone is 10 feet 6 inches long, and the second only 4 feet 9 inches. On the second is a deeply-engraved mark like the Greek H, and on the stone many 'flourishes' with red paint; there is also a mark in black paint. Two more characters in red paint have been found on the fourth and fifth course. All these characters and letters have been sketched and sent home. They have been referred to the British Museum for examination. Lieut. Warren conjectures that they may be only Mason's marks.

#### Curious Composition.

The well-known painter Kaulbach is said to be at work on a 'Dance of Death,' the first sheet of which represents the Empress Marie Louise, with the little King of Rome on her knees, and receiving the homage of the German princes. At the head of the latter personages is Death, in the costume of the Pope's Nuncio, about to crown the young king with a wreath composed of bones, while the sovereigns flourish their coronets in the air, with triumphant huzzas. In order that the Devil may not be wanting, says the report, Talleyrand stands behind the figure of Death! The second sheet is said to be a charming representation of the famous *lied* of the *Trouvère* Walter de Vogeleweide: 'Sous les Tilleuls.'

## General.

### Floods in the Thames.

The present state of the valley of the Thames reflects little credit on our civilisation or skill in dealing with natural phenomena. The late heavy rains have sent down large quantities of water from the upland districts, which have swollen the already overcharged river till it has overflowed its banks in all directions. The country is under water for miles and miles, and one can now travel over or through the hedges and farm gates by rowing or punting. If this were an exceptional state of things we should have nothing to say, but this is not the case. These floods occur every year and many times every year, and, as far as we know, no proposition is ever hinted at to provide a remedy, at least by those in authority. We believe there have been three of these floods this year; certainly we have seen two ourselves.

Meantime, it is to be remembered that the water, which, in the state of flood, is doing all the farmers harm and stopping communication from place to place, would be most useful if it were impounded and used during the summer to supply the metropolis. The river in its attenuated summer flow is every year more and more inadequate to the supply of this great, ever-growing city; and propositions are made to bring water from the Severn or the English lakes to supply London, while we have more water than we know what to do with within a few miles of Charing Cross.

Be this as it may, however, we are sure that something ought to be done to curb the power of Father Thames, either by impounding the floods or by improving the outlets. The present state of the country from Hampton to Oxford is simply discredit to our common sense. It is not a slur on our engineers, as none of them have, we believe, ever been called upon to deal scientifically with the Thames valley.

### The Guardians of the Strand Union and their New Workhouse.

—Our attention has been called, says the *Daily News*, to the recent proceedings of this board in letting the contract for the erection of the new workhouse at Edmonton. It appears that the guardians invited, by advertisements in the public journals, tenders to be sent from plans and quantities prepared and supplied by their own architect. Twenty-three builders, for the most part of high standing in the trade, sent in tenders for the works, the highest being by Messrs. Myers and Sons, at 52,865*l.*, and the lowest by Mr. Henry Hart, at 43,940*l.* Mr. Hart has recently built, to the complete satisfaction of the authorities, the new workhouse for the Stepney board of guardians; also that for the West London Union, and the new workhouse at Croydon. The guardians of the Strand Union, however, rejected his tender, and accepted that of Mr. Howard, a local tradesman, at 45,800*l.*—a sum in excess of the lowest amount of nearly 2,000*l.* There were two other tenders lower than Mr. Howard's—viz., Messrs. Hill, Keddell, and Waldron's, the contractors for the Holborn Viaduct, at 45,257*l.*; and Messrs. Cooper and Cullum's, at 44,745*l.*

The subject given this year for the competition for the Gold Medal at the Royal Academy is a 'Theatre to accommodate 2,500 persons, and to be situated in the centre of an open space.'

The report of the Millwall Freehold Land and Docks Company, presented on the 8th of February, stated that the net profit for the half-year (7,002*l.*) is equal to the amount of the very heavy interest, &c., on the debentures which the company are liable to pay. In future the debenture interest will be reduced under the arrangement with the Credit Foncier, and the directors trust that in a short time the whole of the debentures will be placed out at 5 per cent.

The Abbey Church.—A beautiful stained glass window by Mr. Hughes, of Frith Street, London (the most effective of his works in the Abbey), has been placed in the south aisle of the above church. The window contains five subjects, viz.:—'The Raising of the Widow's Son,' 'Our Lord addressing the Nobleman, and telling him that his Son liveth,' 'Christ receiving Little Children,' 'The Prayer in the Garden and the Sleep of the Disciples,' and 'The Payment of Tribute Money.' At the top of the window (which was exhibited at the Paris Exposition) are figures of angels bearing banners, on which texts are inscribed. We observe that the scaffolding in the nave has been removed, and the beauty of the stone groining can now be seen to advantage.

The excavation of the shaft for the subway from the Tower to Southwark was commenced on Tuesday last, on the property of the Crown at Tower Hill.

The word *Theodolite* is generally supposed to be derived from the three Greek words, *θέω*, I see, *δός*, a way or road, and *λίθος*, a stone; the latter owing to the fact that the first instruments of this kind were placed, not upon a moveable rest or stand as now, but upon a fixed and immovable basis, generally a stone. Professor Dr. Heinzerling, of the University of Giessen, now furnishes us with a fresh etymology, which originated with Professor Weigand of the same university. We are told the word is derived from the Arabic, thus:—*al-hadja* or *al-hidja* signifies 'a straight course' (from *hadaj*, to lead upon the right road), and was adopted as the name of the instrument by the French, who, however, called it *Alhidade*. This we English corrupted into *Alydeday*, and subsequently, by transposition of letters, into *Athelida*. The *Athelida* was the indisputed name until the French took our two words as one, and called it *Le Theodolite*. Verily the Italian proverb applies here, 'If it isn't true, it's at all events well concocted!'

Birkenhead and Liverpool Railways.—This important Bill, for which Mr. John Fowler is the engineer-in-chief, came before the Examiner on Standing Orders on Monday week. The case lasted the whole day, and was concluded on Tuesday. The Examiner decided that in sixteen cases the Standing Orders have not been complied with, and will report the same to the Standing Orders Committee. This Bill is for the construction of a railway tunnel under the river Mersey, with branch lines connecting the tunnel with the existing railways on both sides of the river. The estimated cost is 900,000*l.*



During the Recent Gale, the whole of the ornamental parapet on the south side of the roof of the chancel of St. Mary Redcliff yielded to the immense pressure of the wind, and the fall of the huge pieces of stone caused a crash which, in the stillness of the night, was heard for a considerable distance around. As early as practicable a number of men were employed to remove the western and northern parapets, in order to avoid further danger. Several pinnacles were blown down, but they fell on the roof and were not materially damaged.

The value of hewn fir imported last year into the United Kingdom was 2,772,148*l.*, viz., from Russia, 197,480*l.*; Sweden, 407,196*l.*; Norway, 209,858*l.*; Prussia, 501,447*l.*; United States, 161,089*l.*; British North America, 1,279,810*l.*; other parts, 15,268*l.*

Last year, walnut wood—chiefly from Italy and British North America—was imported into the United Kingdom to the value of 28,441*l.*; and dye-woods, chiefly from Mexico, Curaçoa, and Brazil, to the value of 15,798*l.*

A new bridge is to be erected over the river at Farnham, from the plans of the local surveyor.

The Archbishop of Canterbury has written to Mr. Arthur Arnold with reference to the request that several acres of the grounds of Lambeth Palace should be given up for the purpose of public recreation and sanitary improvement, stating that the subject is still under consideration.

The committee appointed to consider the most suitable site for the new buildings of the Airedale and Rotherham Colleges have issued their report. In their opinion, 'Leeds is the most eligible centre in the West Riding for the amalgamated college.'

Mr. E. G. Papworth has been entrusted with the important work of executing a series of statues for the new Manchester Exchange, illustrating the various arts, sciences, and manufactures, also emblematical figures of the principal commercial cities of the empire.

The Scotch Memorial to the Prince Consort at Edinburgh is, according to the *Scotsman*, advancing towards completion:—The bronze bas-reliefs, to form the panels of the pedestal, were finished a few months since, together with the other portions of the artistic work. Of the groups of figures to occupy the angles of the base, that by Mr. Brodie was ready some time ago, and Mr. Clark Stanton has just given the finishing touches to his commission. The equestrian statue of the Prince is assuming form under the hands of Mr. Steell, and a corner group by that gentleman is also well advanced. The late Mr. George Macallan had been entrusted with the fourth group, which is now in the hands of his successor in business, Mr. Stevenson. Mr. Stanton's group is yet in the clay, but in a short time it will be reproduced in plaster, and subsequently cast in bronze at Mr. Steell's foundry.

The Earl of Carnarvon is about to build a church at Highclere, Hants, within an easy distance of the castle. The work is to be commenced shortly from a design of Mr. George Gilbert Scott.

The amount already subscribed to the fund for rebuilding the Medical Hospital in Edinburgh is 71,055*l.* 3*s.* 2*d.* The estimated cost is 100,000*l.*

Boyal Scottish Academy.—Mr. Hugh Cameron and Mr. R. T. Ross were elected Academicians, in room of the late Mr. John Stevens and Mr. W. B. Johnstone, on the 10th instant.

Blasting Granite.—In one of the granite quarries near Penryn, worked by Mr. W. Hosken, a large mass of good sound granite, after being carefully cleared of all obstructions, has just been moved from its natural bed some inches by 50 lbs. of blasting powder, confined in a hole 12 feet deep and 6½ inches in diameter, bored in the rock. The stone measures, at least, 40 feet by 40 feet by 12 feet, which equals 19,200 cubic feet, or 1,280 tons, taking 15 cubic feet as equal to one ton.

At Saumur five houses have been crushed by an avalanche of earth, but no lives were lost, owing to timely warning. Masses of stone thirty feet long and six or eight thick remain suspended over the houses in the Rue Feret, and the authorities have ordered the occupants to depart. That quarter of the town was in similar danger in 1852.

Messrs. Saunders, of Malden Road, London, have just erected three very handsome stained glass windows in the chancel of St. John's Church, Monkstown, co. Dublin, as a thankoffering from a parishioner whose family narrowly escaped destruction in the Abergole accident.

An Underground River.—Midway between Donegal and Ballyshannon a very singular phenomenon may be seen. Running through the grounds of Major Hamilton, of Brownhall, is a small river, which bores its way underground, from cavern to cavern, for nearly two miles. The caverns are formed in the limestone, and the power of petrification possessed by the water is very astonishing. Sticks, straws, leaves, &c., are soon coated and crusted over, and, by degrees, harden into stone; and so rapid is this process, that we may see one half of the same leaf of moss green and growing, and the other half crusted over in process of petrification. The caves are, some of them, very beautiful, and when lighted up by the aid of a fragment of magnesium wire, the effect is most brilliant and striking, the walls sparkling as though studded by countless diamonds. In one of them the river makes a fine waterfall. The roof of the cavern is broken; and as the spectator stands in the subdued green light, looking up through a mass of ferns, and stems of trees, with the hoarse roar of the waterfall plunging into an unseen depth through a cloud of mist at his feet, the dim cave partially lighted up around, but dark and mysterious in its recesses—the effect is inexpressibly charming—it is a perfect chamber of romance, and one can fancy superstition formerly holding high court here. Almost equally striking in another way is the manner in which the river once more makes its appearance into the light, welling up from a dark, unfathomable-looking hole under a wide rift of rock: stealthily emerging from the ground, it oozes forth in a still black stream—a veritable kelpie's hole, about which,

if legends do not exist, it certainly is high time they did, as a most eligible opportunity has been hitherto unaccountably neglected.—*Fraser's Magazine*.

Considerable improvements and additions to Ballynastragh House, co. Wexford, for Sir John Esmonde, Bart., M.P., are about to be carried out. Mr. G. C. Ashlin, architect.

New warerooms are in course of erection in Thomas Street, Dublin for Messrs. Garratt & Co. Mr. M'Curdy, architect; Messrs. Beckett builders.

Mr. Waterhouse, the eminent silversmith and jeweller, of Dame Street, Dublin, is having extensive alterations and additions made to his premises. Mr. M'Curdy, architect.

The new Berwick Wing, to be built to the Convalescent Home, Stillorgan, as a memorial to the late Judge Berwick, who met his death in the lamentable accident at Abergole, is to be commenced forthwith. The works are to be completed for by a limited number of contractors. Mr. M'Curdy, architect.

The Cathedral of Sydney, N.S.W., was opened on St. Andrew's Day. It is a very large and handsome structure, lighted with gas.

The French Academy of Fine Arts has nominated Mr. Leighton and Mr. Herbert as Corresponding artists.

An Electrical Clock, constructed by Hipp of Neufchatel, for the Central Railway Station at Stuttgart, has now been in constant and perfect working order for the last nine months. The apparatus consists of a Regulator and one of Meidinger's batteries, and is connected with 22 dials throughout the station, besides indicating the time in the halls of two neighbouring Hotels. Some parts of Brussels have long had similar dials worked from a central clock in the Hôtel de Ville.

A Committee has been formed at Berlin for the purpose of erecting a monument over the grave of Madame Charlotte Birch-Pfeiffer, the well-known theatrical authoress. The monument will be of the simplest kind, merely a plain but handsome slab bearing her name and the words 'The German Stage, in thankful remembrance.' Subscriptions are not to exceed 1*s.* 6*d.* in order that all actors and actresses may share in the honour of subscribing.

The City of Berlin contains 700 public buildings; of these 61 are devoted to religious purposes, 107 to education, and 73 to the treatment of diseases; 200 are Government offices, 87 municipal ditto, and 170 barracks, guard-houses, &c. Private houses number 33,263, of which 21,919 are dwelling-houses, 1,164 factories, and 10,180 stables and goods sheds. 7.9 per cent. of the houses of Berlin are only one storey high, 15.3 per cent. have two storeys, 25.4 per cent. have three storeys, 36.2 per cent. have four storeys, and 15.2 per cent. have five or more storeys.

Although much has yet to be done before they are wanted, Mr. Voigtel, the superintending architect of Cologne Cathedral, is already thinking about the finials which are to crown the two western towers of the Dom. Each finial will be 27 feet high, the thickness of the stem being 4 feet; it will have two rows or tiers of Gothic foliage, the lower measuring 12 feet each way (nearly 17 feet diagonally) and 4 feet in depth. It will take 432 cubic feet of rough hewn stone, weighing about 650 cwt., to execute this lower tier in four pieces, and, when finished, this will probably weigh not less than 360 cwt. The upper row of foliage will be 6 feet above the lower, the points of the four leaves being placed diagonally over those below, giving the effect of a double cross when seen from below. The total weight of each finial is estimated at 450 cwt. They cannot be fixed for the next six or seven years, but there will be some difficulty in quarrying such huge blocks free from all flaws, and hence they are to be taken in hand in good time.

Tadolini, the celebrated sculptor, who is the son of Canova's best pupil, has just finished an admirable group in marble, representing St. Michael wrestling with Lucifer.

There is nothing new respecting the Darien Ship Canal project. Washington reports state that the Government have made a proposition to the Colombian Government to assume a protectorate over the Isthmus of Panama, in order better to maintain American supremacy over the work when constructed. For the canal three routes are proposed, two of which require tunnels, one of them 1,750 feet long. The third and most feasible route is said to be 30 miles long, with a cutting through rock of about two miles.

Mr. Woolner has received a commission to execute the large marble statue of the late Sir Bartle Frere, which is to be placed in the Town Hall at Bombay.

A fine crypt, declared to be of the twelfth century, has just been discovered near the Cathedral of Graf in Hungary. The vaults of the roof are supported by eight granite columns, the capitals of which are all different from each other.

#### MEETINGS OF LEARNED SOCIETIES.

INSTITUTION OF CIVIL ENGINEERS.—Tuesday, February 23, at 8 P.M. 1. Discussion 'On the Lagoons and Marshes of the Mediterranean.' 2. 'On Sinking Wells for the Foundations of the Piers of the Jumna Bridge, Delhi Railway,' by Mr. Imrie Bell. 3. 'Description of Apparatus for Excavating the Interior of, and for Sinking Iron Cylinders,' by Mr. John Milroy.

INSTITUTION OF SURVEYORS.—Monday, February 22, at 8 P.M.

ROYAL INSTITUTION.—Friday, February 26, at 8 P.M. Mr. John H. Bridges 'On the Influence of Civilization upon Public Health.'

CIVIL AND MECHANICAL ENGINEERS' SOCIETY.—Wednesday, February 24, at 8 P.M. Mr. Charles W. Whittaker, 'On the Scarborough Harbour Competition.'

EDITORIAL NOTICES.

No communication can be inserted unless authenticated by the name and address of the writer, —not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

Our readers are invited to address us on subjects of interest to themselves or the public. We shall be always ready to insert letters asking for a solution of any suitable questions of a professional or practical nature, and to receive replies to such enquiries.

PUBLISHER'S ANNOUNCEMENT.

Advertisements cannot be received for insertion later than 2 P.M. on Thursdays.

Temporary Office, 4 Monument Yard, London.—GILBERT WOOD, Publisher.

THE GAZETTE.

PARTNERSHIPS DISSOLVED.

Tracy, Southall, & Watson, Hampstead, builders, as far as regards J. Watson; Heal & Marsh, Bristol, builders; J. C. & G. E. Brown, Maidstone, pumpmakers; Hazard & Grimwood, Sylvan Grove, Old Kent Road, engineers; T. Saville & Co., Chorley, builders, as far as regards T. Saville; Waite & Jones, Derby, building surveyors; Cox & Wood, Oxford Street and Shenstone Street, Old Kent Road, patent Maresco marble manufacturers; G. Hunter & J. Simpson, Wakefield, cabinetmakers.

BANKRUPTS.

Edward William Matthews, Hayward's Heath, builder, Feb. 26, at 2; John Pallant, Hadleigh, builder, March 1, at 1; Benjamin Reynolds, Chiswick, March 1, at 1; George Smith, Church Cobham, engineer, Feb. 26, at 2; Robert Banting, Florence Terrace, Kensington, painter, March 1, at 11; George & Walter Hodes, Worthing, engineers, March 1, at 12; Edwin Sadgrove, Caledonian Road, plumber, March 1, at 12; George Slater and Samuel John Salkeld, Lambs' Passage, Chiswell Street, engineers, Feb. 26, at 11.

To surrender in the Country.

George Henry Edwardes, Worth, near Crawley, estate agent, Feb. 25, East Grinstead; Joseph Foster, Whalley, timber merchant, March 3, Sheffield; John Liddle, West Hartlepool, builder, Feb. 27, Hartlepool; William Clarke, Eastwood, builder, March 2, Nottingham; William Downes, Torquay, builder, Feb. 26, Exeter.

SCOTCH SEQUESTRATIONS.

W. Mack, Glasgow, builder, Faculty Hall, Glasgow; J. Walker, Kilsyth, manufacturer of malleable iron, Feb. 22, at 12, Faculty Hall, Glasgow; R. Neilson, Falkirk, cabinetmaker, Feb. 19, at 1 Red Lion Inn, Falkirk.

TENDERS.

LONDON.—New Street, from Holborn Circus to Shoe-Lane, for the City of London Corporation. William Haywood, Esq., Engineer. Quantities by Mr. F. Warburton Stent.

Table with 2 columns: Name and Amount. Includes Clemence (£10,276), Trollope (10,100), Mowlem & Co. (9,816), Little (9,640), Brown & Robinson (9,612), Ebbs & Sons (9,542), Mansfield, Price & Co. (9,473), Jackson and Shaw (9,125), Gammon & Sons (9,090), Macey (8,994), Hill, Keddel & Waldram (accepted) (8,771).

LONDON.—For alteration to Messrs. Parton's premises, at Pimlico, Messrs. Jarvis & Son, architects:—

Table with 2 columns: Name and Amount. Includes Thompson (£927 0 0), Turner & Son (791 0 0), Baguley (787 0 0), Tarrant (749 0 0), Henshaw (726 0 0), Richardson (697 0 0), Stimpson (695 0 0).

ACTON.—For Building Four Pairs of Houses, in concrete. Quantities supplied. Apparatus for concrete building provided by the proprietor. Mr. E. Wyndham, Architect.

Table with 3 columns: Name, Per pair, and Yard lineal. Includes Holmes (£650 0 0), Ebbe (649 0 0), Drake & Reid (585 0 0), Watkins (574 0 0), Corpe (567 0 0), Turner (519 0 0), Hewson (500 0 0), Wright (350 0 0).

\* Fence wall of concrete, 6 in. thick and 5 ft. high, with foundation 9 in. by 9 in.

PUTEY.—For building a Pair of Houses. Mr. E. Wyndham Tarn, architect:—

Table with 2 columns: Name and Amount. Includes Adamson (£1,500 0 0), Ebbage (1,455 0 0).

BRITTON.—For Nine Houses at Loughborough Park. Aldred R. Pite, Architect.

Table with 2 columns: Name and Amount. Includes Sutton & Dunley (£5,914 0 0), Cowland (5,297 0 0), Baker & Constable (5,170 0 0), Kitson (5,089 0 0), Manley & Rogers (4,977 0 0), Watkins (4,626 0 0), Riley (4,347 0 0), Johnson (4,105 0 0).

HOMERTON.—Alterations and Additions to the Hackney Union Workhouse at Homerton. Wm. Lee, Esq., Architect. Quantities by Messrs. Linsdell & Giffard.

Table with 2 columns: Name and Amount. Includes Chessum (£11,150 0 0), Lewis (11,133 0 0), Cowdor (10,887 0 0), Higgs (10,629 0 0), Ashby & Son (10,450 0 0), Perry & Co. (10,443 0 0), Brown & Robinson (10,330 0 0), Hill, Keddel & Waldram (9,989 0 0), Sawyer (9,953 0 0), Henshaw (9,672 0 0), Webb & Son (9,366 0 0).

TOTTENHAM.—For finishing Two Carcases, at Park, for Mr. W. Baker. Mr. S. Cooper, Architect:—

Table with 2 columns: Name and Amount. Includes Cook & Green (£496 0 0), Marion (490 0 0), Yates (465 0 0), Hill & Co. (439 0 0), Stone (415 0 0), Hodgson (390 0 0), Rist & Brown (367 0 0), Warr (359 0 0), Rowe & Co. (345 10 0), Smyth (339 0 0), Allen (338 0 0), Gladwell (329 0 0), Abraham & Son (295 0 0), Chapman (275 0 0), Davies F. (275 0 0), Norman (250 0 0).

WALTHAMSTOW.—For Main Sewers for the South-Eastern District. Mr. John T. Brasey, Surveyor:—

Table with 2 columns: Name and Amount. Includes Smith (£3,008 14 6), Smart (2,175 10 0), Parker (2,754 17 6), Reed (2,650 0 0), Dickinson & Oliver (2,630 0 0), Turner (2,000 0 0), Topkiss (2,547 0 0), G. Harris (2,539 0 0), Jackson (2,504 0 0), J. Porter (2,440 0 0), Howe & Presney (2,300 0 0), W. Harris (2,373 0 0), Jones & Jepson (2,238 0 0), Stenson (2,222 0 0), Thackrah (2,200 0 0), Gardner (2,187 0 0), Anderson & Son (2,115 0 0), King (2,104 0 0), Crockett (2,100 0 0), Tinsley (2,071 0 0), Austin (1,998 0 0), Knight (1,994 0 0), Bloomfield (1,973 0 0), Young (1,905 0 0), Nicholson (1,896 0 0), Cole (1,892 0 0), Maxwell (1,869 0 0), P. Porter (1,865 0 0), Fell (1,782 0 0), Wigmore (1,725 0 0), Carter (1,640 0 0).

ABERDEEN.—Town Hall, Markets, &c. Messrs. Wilson & Willcox, Architects.

Table with 2 columns: Name and Amount. Includes Wall & Hook (£10,050 0 0), Bolt & Co. (9,078 4 0), Beaven & Son (8,607 12 0), Jones & Co. (8,521 0 0), Moreland (8,229 0 0), Welsh (7,980 0 0), Diment (7,688 0 0), Woodford (7,468 0 0), Trow & Son (7,300 0 0), Bladwell (6,990 0 0), Dixon (6,975 0 0).

BRADFORD.—For the erection of a Pair of Villa Residences, in The Grove, for Mr. Thomas Lester. Mr. Usher, Architect. Quantities supplied.

Table with 2 columns: Name and Amount. Includes Winn & Foster (£1,506 6 0), Corby (1,500 0 0), Lawson (1,459 0 0), Dickens (1,453 0 0), Moore (1,451 0 0), Hull (1,440 0 0), Cunvin (1,435 0 0).

DERBY.—New Hotel and Offices for the Derby Improvement and Hotel Company, Limited.

Table with 3 columns: Name, 1st Div., 2nd Div., Total. Includes Lowe & Eons, Burton (£8,500 £4,900 £13,400), J. Gadsby, Derby (7,575 £4,832 12,407), Wade Bros. (7,703 £4,597 12,300), Edwin Thompson, Derby (7,175 £4,824 11,999), R. Dennett & Co., Nottingham (7,046 £4,651 11,697), Messrs. Slater & Co. (7,062 £4,485 11,550), Stephenson & Weston, Nottingham (7,162 £4,316 11,478), E. Dunsantoy, Derby (accepted) (6,454 £3,920 10,374).

BRISTOL (Kent).—For a Villa Residence and Billiard Room. Mr. H. Ford, Architect. Quantities supplied.

Table with 2 columns: Name and Amount. Includes Pritchard (£5,234 0 0), Turner & Sons (5,112 0 0), Scrivener & White (5,057 8 0), Bayes (4,984 6 0), Sanders (4,918 17 3), Kilby (4,806 8 3), Nightingale (4,670 0 0), Francis (4,624 12 0), Clements (too late) (4,548 10 0), Targue (4,504 10 9), Turner (error 108) (4,462 0 0), Foale (4,314 0 0).

MALVERN COLLEGE-HOUSE.—The following were the tenders for this building. Haddon Bros., Architects.

Table with 2 columns: Name and Amount. Includes Wood & Son (£5,904 10 0), Smart (5,830 0 0), Garbutt (5,828 0 0), Dixon (5,848 18 3), Griffiths (5,616 0 0), M'Caan & Everal (5,489 0 0), Inwood (5,106 0 0), Slim (accepted) (5,092 0 0).

PICKERING.—For building Church at Newton-upon-Rawcliffe. Mr. E. Wyndham Tarn, architect:—

Table with 2 columns: Name and Amount. Includes Tinsley (£750 0 0), Watson (652 0 0).

STROUD GREEN.—For Sewers, Holly Park, Stroud Green. Mr. Frederick Wallen, architect.

Table with 2 columns: Name and Amount. Includes James Abbott (240 0 0).

SOOTHILL.—For a Power Loom Shed to be erected for the Alexandra Mill Company. Sheard & Hanstock, architects.

MASONS' WORK.

Table with 3 columns: Name, Highest, Accepted. Includes George Mallinson, Dewsbury (£657 0 0), Robinson, Hirst & Co., Batley (£562 0 0).

CARPENTERS' and JOINERS' WORK.

Table with 2 columns: Name and Amount. Includes Robert Ibberson, Batley (829 10 0), William Whitehead, Batley Carr (530).

PLUMBERS', &c. WORK.

Table with 2 columns: Name and Amount. Includes Henry Harrop, Batley Carr (69 19 0), Matthew Lobley, Batley (50 5).

IRONFOUNDERS' WORK.

Table with 2 columns: Name and Amount. Includes Michael Shillito, Batley (155 0 0), William Stead, Cleckheaton (135 14).

SLATERS' WORK.

Table with 2 columns: Name and Amount. Includes Robinson, Hirst & Co., Batley (282 0 0), Jonas Thornton, Batley (250 0).

APPOINTMENT VACANT.

INDIA.—July.—Forty Appointments in Engineer Establishment of Public Works Department in India. Mr. W. T. Thornton, Secretary, Public Works Department, India Office.

COMPETITIONS OPEN.

ROYAL ACADEMY OF ARTS.—National Gallery. For the best painting in Oil—or Model and Design in Painting, Sculpture, and Architecture. The Gold Medal and the Discourses of Presidents Reynolds, West, &c.; and for the best Copies of Drawings, Models of Life, the Antique in Landscape Perspective, &c. The Silver Medals, &c. November 1.

ROTHERHAM.—March 15.—For Plans, &c., for erecting a Public Hospital and Dispensary. A prize of 75l. is offered for the best design, 50l. for the second, and 25l. for the third. John Barrae, hon. secretary, Rotherham.

KINGSTON-ON-THAMES.—March 1.—Design for new School and Master's Residence. Cost not to exceed 5,000l. F. Gould, Esq., Kingston-on-Thames.

BRECON.—March 1.—Plans and Estimate for Alterations of County Gaol. A premium of 30l. is offered for best plan. Edward Williams, Clerk of Peace, Brecon.

CORPORATION OF MANCHESTER.—ALEXANDRA PARK.—March 8.—The Corporation invite landscape gardeners, surveyors, and others to send in designs in competition for laying out the Alexandra Park. Joseph Heron, town clerk, Town Hall, Manchester.

CONTRACTS OPEN.

CITY OF LONDON.—February 23.—For Stone Paving in Carriageways and Footways. Joseph Daw, Sewers' Office, Guildhall.

LONDON.—March 5.—The Commissioners of Her Majesty's Works and Public Buildings are prepared to receive Tenders for the ordinary Works and Repairs to Public Buildings, &c., in the London District. George Russell, Secretary, Whitehall.

FINSBURY SCHOOL DISTRICT.—March 1.—For the Erection of Proposed Buildings, at Upton, West Ham, Essex. Architect, Mr. Frederick Peck, 15 Furnival's Inn, E.C. C. S. Waldron, Clerk to the Managers.

POPULAR DISTRICT BOARD OF WORKS.—February 23.—For the Erection of New Offices for the above Board, in High Street, and Woodstock Road, Poplar, Middlesex. S. Jeffries Bath, Clerk to the Board, 291 East India Dock Road.

TRINITY HOUSE, LONDON.—Feb. 22.—For the Erection of an Electric Light Establishment, comprising a Lighthouse, Tower, Engine-house, Keeper's Dwellings, and other Works at Souter Point, about midway between Sunderland and South Shields. Robin Allen, Secretary.

SHOREDITCH.—March 1.—For Watering Roads in parish of St. Leonard. Mr. W. G. Davis, Vestry Clerk, Town Hall, Old Street Road.

SHOREDITCH, March 9.—For Masons' and Pavers' Work, &c. Mr. W. G. Davis, Town Hall, Old Street Road.

SOUTHWARK. St. George the Martyr.—February 22.—For supply of broken Guernsey Granite, Yorkshire Paving, &c. &c. Mr. Daniel Birt, jun., Vestry Clerk's Office, Vestry Hall, Borough Road. S.E.

POPULAR.—Feb. 23.—For Erection of new Offices. Mr. S. Jeffries Bath, 291 East India Dock Road.

POPULAR.—February 23.—For Paving several Streets. Office of the Surveyor, 291 East India Dock Road.

TOWN MALLING.—March 11. For Maintenance and Repair of Roads. Mr. W. South Norton, Clerk to the Board, Town Malling.

STAFFORD.—March 1.—For Erection of New Stone Bridge, and taking down the old one. Mr. Robert Griffiths, County Surveyor, Stafford. See Advertisement.

BRISTOL.—February 26.—For Altering Rooms at St. Peter's Hospital and Adapting them for Offices. E. G. Doggett, Clerk.

LEEDS.—For the various works required in the erection of six good Houses, proposed to be built near Armley Station. John Hall, Architect, 108 North Street, Leeds.

# The Architect.

## THE THAMES EMBANKMENT AND ITS STRAND APPROACHES.

(WITH AN ILLUSTRATION.)



WE Londoners of the present day are like the Irish gentleman in the story who was left a big family diamond. We have—or are about to have—our fine Thames Embankment, and now we are beginning to discover that all its belongings must be fine as well. The ragged edge of river-side dilapidations, the unsightly lanes and rotting wharves, which looked bad enough even from the middle stream, will of course never do as ad-

junctions and close neighbours to what will soon be the noblest boulevard in the world.

Luckily, it has been with the making of the Thames Embankment as with the doing of all other good deeds—it has brought its own reward with it; and this in the shape of reclaimed land of great value, which it will be our own fault if we do not make of great beauty also. The Westminster portion of this valuable gift we have been obliged to sacrifice, perhaps unavoidably, to the exigencies of riparian ownership. This is the less to be regretted, as the ground, which is Crown property, may some day or other—nay, we are promised that it will—be made available for metropolitan embellishment. Another part, not so large in itself, but which can be converted into a noble site by the acquisition and annexation of the ground between it and the Strand—that, namely, situate between the Temple and Somerset House—is likely to become, through the powerful advocacy of Sir Charles Trevelyan and others, the seat and centre of our future courts of justice. The remaining portion of this reclaimed river-side land—the largest of all in extent, being about eight acres in area, the most important in position, being between Charing Cross and Waterloo Bridges—has just been made the subject of much public discussion; thus, we hope, escaping the danger of being utterly thrown away and rendered useless for any good purpose, either of use or ornament. As the public has not hitherto been put in possession of any accurate plan or description of this land, or of the use to which it was about to be put—and might really never have heard of what is proposed, had not the Chaplain of the Savoy, Lord Elcho, and the ratepayers of the Strand come to the rescue—we this week give a plan which shows the whole, and which ventures to suggest, further, how the evils, so nearly inflicted, may be avoided. This also, with the particulars which we have already published, completes our plan of the reclaimed land adjacent to the Embankment available for public use.

Referring then to the plan, what do we find? Why, that in addition to certain continuations of existing streets, which are admittedly requisite and judicious—Whitehall Place, Villiers Street, and Craven Street being thus connected with the river-side roadway—there is a great intended street, or viaduct (shown by dotted lines), opening out of the Embankment just east of Charing Cross Bridge, and extending across the whole of the reclaimed land, in a direction almost parallel with the river-wall, until it enters Wellington Street, about midway between the Strand and Waterloo Bridge. This street was proposed as a short cut from Westminster Citywards. Bearing in mind that this roadway would be some thirty feet higher where it enters Wellington Street than at the Charing Cross Bridge end, and that for one-third of its length, at the upper extremity, it would have to be carried on arches, it will at once be seen how completely it destroys the reclaimed land, either for building purposes or as ornamental ground; how it leaves a great hole on its right hand and on its left; how it isolates all the streets lying between it and the Strand; how unsightly it would be, and how costly; how it would concentrate traffic on a thoroughfare already overcrowded; how, finally, it does not even attain the end for which it was intended—as, within a very few yards, the distance between Wellington Street and Westminster is as short by the Strand route as it would be by the viaduct.

These are the objections to the scheme as a scheme, and they are fatal. But there are others even weightier behind. For, in the Act of Parliament authorising the construction of this viaduct, powers have been conceded to the owners of property in the streets adjacent—power of control over public highways, and power to veto public improvement—which should never have been granted, and which we hope never will again be granted, to private persons. The project is every way a bad one, and, as such, admitted even by

those who have the charge of its execution. The Metropolitan Board—to whom it was bequeathed with the original Bill of 1862—would be glad to wash their hands of it. Mr. Cowper thinks it a very good plan, 'but that it may have been purchased too dear.' Mr. Layard holds it in abomination. The Strand ratepayers cry out against it—Let it perish, abortive!

Our art being, however, not destructive, but constructive, we may consider now whether an approach-road might not be made from the Strand to the Embankment, which would not have the effect of condemning all the neighbouring streets south of the Strand to remain for ever the *culs-de-sac* which they at present are; which would not concentrate all the traffic at one dangerous point, but distribute it, by many ramifications; which would not afford additional arcades for sheltering nocturnal vagabondage, or additional receptacles for the dead cats and other *disjecta membra* of the district; and which finally, and principally, would not cut up the valuable piece of ground which has come into our hands, but leave it intact, to be afterwards dealt with as may be considered best.

To show our meaning, we would beg our reader to refer to the plan which we publish this week. The roadway we there suggest would leave the Strand by Cecil Street, the western side of which would be retained, and the street widened by the absorption of the ground occupied by the houses on the east side—the site for building on that side being obtained by purchasing the dilapidated tenements at present existing in what is known as *Carling Lane*. Cecil Street leaves the Strand by an easy gradient, which would be retained unaltered. At the southern extremity of that street, the roadway would divide right and left, skirting, with an easy incline, the existing terminations of the several streets leading southward out of the Strand, along its course. With all of these junctions might be effected (slight modifications of existing levels being, of course, required), except in the case of Adam Street and one or two other streets forming part of the Adelphi block, and they, being all of a higher level, would have to be tapped from their John Street end. In connection with this project, were such an one adopted, it would perhaps be found desirable to rearrange all the lower parts of the Savoy, the streets of which are much too steep to be convenient, and the houses ancient, and in an advanced state of decay. If, in addition to this suggested roadway, Villiers Street were to be widened, Craven Street lengthened to intersect the Embankment, and Whitehall Place produced in its present alignment, as authorised, we should then probably have a system of approaches to the Embankment amply sufficient to meet all the requirements of the traffic along Parliament Street and the Strand.

We may and do hope in any case that, public attention being fixed upon the importance of this great site, no plan or project will be tolerated which does not preserve the ground inviolate for the use of the public, who have paid for it. At no distant date, may we see a stately pile here raising its sculptured front as a fine architectural background to our river-side roadway! And, when that time comes, we trust that the building may be one dedicated, *inside* as well as *outside*, to the recreation and delight of the people. Not any hospital, or range of public offices, nor even the palace of that municipality which is to supersede Sir John Thwaites and the Lord Mayor of London, but some great museum or library, or institute of science, of art, or of industry.

This question was fully brought before the House by Lord Elcho, and a committee to enquire into the subject was agreed to without hesitation. We hope that short work will be made of a proposal so objectionable in itself, and so unpopular with even its natural supporters; for if Mr. Tite is to be held as representing the opinion of the Metropolitan Board in the House, his statement last Tuesday fully shows that there is no disinclination on the part of that body to surrender their project.

Another subject which can hardly fail to suggest itself whenever this or any kindred subject is mooted in any intelligent company is the necessity for establishing some sufficient and efficient control over public works in the metropolis, and for furnishing such authorities as now exist with proper advisers.

We do not wish to see a M. Hausmann in Spring Gardens, or to behold so wholesale a destruction of ancient buildings and thoroughfares as Paris has undergone at the hands of that functionary; but there can be no doubt that a responsible Minister of Public Works with large powers would be of great service in this country.

Mr. Tite threw out the suggestion that the Royal Institute of British Architects would be happy to afford assistance on questions of public taste. We consider that no more efficient council could be secured than one such as this body and the Institution of Civil Engineers could elect from among their most experienced members. No men know better how to meet such difficulties as public works constantly encounter than the leading architects and engineers of the day. Many of them show much public spirit in devoting large portions of their time to matters which can bring in no pecuniary recompense, and we have little hesitation in endorsing the suggestion of Mr. Tite. Certain it is, that had any such advice been sought when the viaduct from Villiers Street to Waterloo Bridge was decided upon, the defects of such a project would have been promptly discovered and uncompromisingly pointed out, and the blunder we are now seeking to repair would have been avoided.

**MATCH EXTRAORDINARY:  
LINCOLN'S INN AGAINST ALL ENGLAND.**

THOSE respectable, but wrong-headed, persons who are desirous of the erection of a noble palatial structure on a site where it can never be seen, and can only be with great difficulty approached, have hitherto shown the better part of valour in the defence of their opinions. Conscious, no doubt, that in any sally forth to discomfit their assailants, they would expose more and more the vulnerable points of their own armour, they have remained wisely silent. They have shut their shutters, barricaded their doors, pulled their night-caps over their ears, and resolved to sleep through the din; or at least to take no share in the strife unless they should be pulled, neck and crop, from their beds. 'Let well alone,' has been the most adventurous essay in the way of argument which for a long time they adduced. Possession is nine points of the law, and possession they thought was theirs. At all events they had dispossessed, and expropriated, and improved away, the former tribes of inhabitants that clustered densely between St. Clement's Church, King's College Hospital, and the Law Institution; those three formidable fixed points in the line of circumvallation that pens in the Carey Street site.

At length, however, roused by the ever-deepening hum of daily talk, the Incorporated Law Society has broken the eloquent silence. With that clear grasp of the points on which he hopes to convince the jury, and that easy skimming over all the rest of the evidence, which constitutes the act of the pleader, the writers have succeeded, unintentionally indeed, in presenting the case to the public in its true light. It is Lincoln's Inn *versus* London. Nay, indeed, so far as the grandeur, the good arrangement, and the comfort of the capital represent and foster the civilisation of the entire country, the case, as put by this legal protest, is that of Lincoln's Inn against all England.

Questions of cost, questions of area, questions of access, have been investigated at some length in our columns. We shall not be unkind if we say that on purely architectural grounds the comparative advantage of the competing sites admits of no further discussion. But the Law Society, with something of a hinted menace as to this application of the Suitors' Fee Fund, ignores the architectural question altogether, and seeks to decide the case on a totally different issue. Let us look for a moment at the argument.

'The Carey Street site has been purchased, and cleared at an expense of 800,000*l.* Not only have architects competed, in elaborate designs, how best to cover the area with the required buildings, but an enormous amount of labour has been bestowed on the plans by MEMBERS OF THE COMMISSION. So much trouble has been taken, that we *did* hope,' it is almost plaintively urged, 'to see the bricklayers at work this spring. If you change the site, you will require to change the plans. Really, after so much trouble has been taken, it ought to be taken for granted that no improvements can be suggested. We are in the groove—for God's sake let us alone!'

The argument that so much time, or so much trouble, has been expended that there must be, whatever happens, an end of the matter, is one not unnatural to those who are habitually aware how often great causes are judicially decided on very imperfect evidence. The presence or the absence of an important witness, or the skill of counsel in enforcing one point and obscuring half a dozen, has more to do with a verdict, nine times out of ten, than has the exhaustive balance of all the facts of the case. Indeed, it is admitted on all hands, that matters requiring minute and detailed investigation ought to be decided by arbitration, and not by a jury. The Bench, and the Bar, and the public, cannot afford the time for meting out absolute and detailed justice. We take it in the rough, and are content with the average result.

The very opposite method is that employed by the scientific man, or by the artist worthy of the name. An architect who had devoted years to the careful planning of the best mode of dealing with a bad site, would cheerfully throw away all his designs on the unexpected offer of a good one. If he were an enthusiast in his art, if he worked, as the best architects do work, for fame and for posterity, and if he could honestly afford it, he would gladly sacrifice all the time he had spent for the more than countervailing advantage of being the constructor of a nobly situated palace, which would perpetuate his name, not as having done the best under disadvantageous circumstances, but as having done something excellent and unrivalled of its kind. There can be no doubt that the architectural, and not the legal, point of view and habit of thought form the true method in which such a subject ought to be approached.

Apply, for a moment, the argument of the Law Society to another kind of building. 'Think,' a conservative master shipwright might say, 'of the thought that has been given to the construction of our three-deckers! See how they swim! Look at our dockyards; all arranged for timber work! Remember how long Britannia has ruled the waves. Let well alone; and don't bother us by your new-fangled iron-plated fleet. The wooden one is well considered, and will last our time, and we can build a dozen while you waste time in inquiring into the best form for an iron steamer.' The argument as to the trouble already expended on the plans is not one whit more pertinent than this.

We come, then, to the real grief. 'It is a bore to move house. Many of us have chambers in Lincoln's Inn. We don't want to move.

Some of our house property, dilapidated, tumble-down, and abominably inconvenient as it is, commands high rents. Don't touch our rents! We have built one decent Hall. It would be horrid to move from its immediate vicinity, or to contemplate any alienation of the result of our one liaison with architecture. We have one set of buildings, named after, and faced with, stone. Its prison-like stair-cases give access to very decent chambers, some of them with a fair look out, and all of them (though the chimneys smoke) receiving the rentals of independent houses. In the sacred names of Old Square, New Square, Stone Buildings, and Lincoln's Inn Fields, pop down the New Law Courts as close to them as possible.

'Against this vested right what has to be urged? The convenience of the public? Pooh! the Law Courts are not for the public, but for the profession. Is not the whole body of English law kept in that barbarous, uncodified, and unintelligible state, which renders it a scandal to all educated foreigners, solely for the advantage of the profession? The more the public are kept away the better! The witnesses are just wanted at the solicitors' offices, the handier to the Court the better; and as to all the rest, Tush!

'Look at it this way. We solicitors and our clerks make 12,000 visits a day to the Courts. Now, if you move the Courts fifty yards nearer the Thames, it follows that an additional labour is entailed on us equal to a walk of 600,000 yards by one solicitor—more than 340 miles per diem—a mile a piece for 340 of us! Think on the cost to the country—for our clients will have to pay for the extra wear of shoe leather.'

We fear that if the case be thus plainly put between the public and the solicitors, the latter will have either to take this dreaded constitutional, or to do what all other inhabitants of London are ever and anon forced to do—shift their quarters. It would be easy to show that little would be lost, and much gained by this compulsion. A man's life would be worth five years' more purchase at the least, were his day passed in one of the commodious chambers which we hope to see rise on the southern portion of the Carey Street site, instead of in one of the pestilent little pigeon-houses known very properly as 'Old Buildings.' And there is yet another consideration for our friends of the legal profession.

Concentration of the Law Courts has been an admitted desideratum. Let us remember what was meant by the term. The Law Courts were most inconveniently situated, partly in London and partly in Westminster. Counsel of sufficient eminence to have their hands full were wanted in both places at once. It is said of Brougham, that at one time his principal supply of sleep was obtained in his carriage between the two localities. The inconvenience of the solicitors has been not less than that of the barristers. The thing was an anachronism, and it was well to deal with it as such.

Yet it is certainly the case that the concentration of the Courts, while a matter of much moment and advantage to leading and popular counsel, is less or not at all favourable to their junior and hungry brothers. The more Mr. Serjeant Graball undertakes, the less there is left for Briefless, Smallbrief, and Briefworthy. It is true that the custom of the profession allows Graball to take his fees for the conduct of a case at Guildhall, which is, in point of fact, attended solely by his junior, the learned Serjeant being himself, in the body, at Westminster. But solicitors, who look more at the thing than at the name, will prefer giving their fee to Briefworthy, if they are sure that he will attend conscientiously to the case, than to Graball, though the abler man, who can't and won't. Now, concentration means giving more business to Graball, because, as a physical fact, he can attend to more if he has not to oscillate between London and Westminster. And the strident outcry for a concentration that is expressed in yards, springs from a desire (whether tacit or expressed) to throw more into the hands of the tritons, at the expense of the minnows.

We think, then, with the utmost respect for the utterance of the Incorporated Law Society as a question of Imperial interest, that, carefully weighed, it forms a fresh argument in favour of the Embankment site. The issue, 'Profession *versus* Public,' can go but one way; but when it also means 'Leaders *versus* Juniors,' and 'the over-worked against the under-worked,' that issue becomes still more narrow. It is not even Lincoln's Inn against all England, but the tenth part of Lincoln's Inn against all England, including the larger fraction of the profession. A clear statement of the pleadings must lead to a nonsuit.

## OUR RAMBLER

ON NEW BLACKFRIARS BRIDGE.

ON the 31st of October, 1760, was laid the foundation-stone of old Blackfriars Bridge, which was designed by Mr. Robert Mylne, and consisted of nine semi-elliptical stone arches, having a central span of 100 feet, and, on each side, spans of 98 feet, 93 feet, 83 feet, and 70 feet. The total length of the bridge was 995 feet, the width 43 feet 6 inches between parapets. The total cost of this bridge was 261,579*l.* 0*s.* 6*d.*

Upon the 24th of June, 1769, this bridge was thrown open to the public, and in a few weeks will occur the centenary anniversary of that ceremony, on which occasion, if the anticipations of the engineer and contractors be realised, the event will be commemorated by the opening of the new Blackfriars Bridge, which occupies the site of the old one, but greatly surpasses its predecessor in beauty and construction.

It is of this bridge we wish to speak; and, by a recent visit to the works, we are enabled to place before our readers a few facts regarding



this noble structure, which bids fair to out-rival any work of the kind that has ever spanned a tidal stream.

In 1861 the Corporation of London invited several eminent civil engineers to submit designs for a new bridge to take the place of the then fast-failing stone structure; in response to that invitation, several elaborate designs were sent by Messrs. J. Fowler, J. Hawkshaw, Sir J. Rennie, P. W. Barlow, G. P. Bidder, Thomas Page, Joseph Cubitt, and others; and, after much controversy as to the merits of the various schemes, great partiality being shown for Mr. Page's cast-iron bridge of three spans, the design of Mr. J. Cubitt was ultimately selected. This design is now being carried out under his superintendence, with a few modifications; and we consider from what we have seen of the work, which is now fast approaching completion, that the Corporation of London will have no cause to regret the choice they have made, and the public cannot fail to be satisfied with their selection.

The New Blackfriars Bridge consists of five flattish segmental arches, the centre arch having a span of 185 feet in the clear, with a rise of 15 feet 11½ inches, and giving a headway of 25 feet from Trinity high water mark, the two intermediate arches having 175 feet span, with a rise of 13 feet 10½ inches, and a headway of 21 feet 6 inches, whilst the two outside arches have a clear span of 155 feet, with a rise of 11 feet 7½ inches and a headway of 17 feet 3 inches.

These arches are supported by massive piers and abutments of masonry. Each arch is composed of nine wrought-iron ribs, placed parallel to the direction of the roadway, 9 feet 6½ inches apart, and firmly connected together by means of transverse bracing: the depths of these ribs average 5 feet for the central arch, 4 feet for the intermediate arches, and 3 feet 6 inches for the outside arches. The ribs spring from skewbacks formed in the piers and abutments, lead being run in hot between the ironwork and masonry to form a springing plate.

The roadway is carried by means of longitudinal wrought-iron lattice spandrels and transverse girders. These latter are sunk below the level of the crown of the ribs, and run tangential with the extrados of the arch, resting upon the upper part of the spandrel, which in fact forms a longitudinal girder; and between these transverse girders are fixed small girders of double T-iron, running in the direction of the roadway, thus forming in fact a complete network of rectangular bracing, upon which are placed Mallet's Buckle Plates; and upon these rests the foundation of the road.

The piers are of Cornish granite with a hearting of brickwork, and stand upon a foundation formed by six caissons, about 18 feet deep, sunk below the bed of the river into the London clay. These caissons are of wrought iron; four of them are rectangular on plan, the other two taking the shape of the cutwaters, one being placed at either end of the pier. In the construction of these piers wrought-iron caissons were used, which were divided into two parts, the lower portion forming the permanent foundation, and the upper portion serving as a temporary dam. The skin of the former was composed of ½-inch plates framed together by means of angle and T-iron, the temporary caisson being formed of Mallet's Buckle Plates, having a frame properly braced and stiffened, and so constructed that when required the sides could be removed to enable the pier to be proceeded with from end to end.

The method of sinking the caissons and forming the foundation was as follows:—The caissons were placed in position about 3 feet apart, and, guided in their descent by means of piles, were lowered until they reached the bed of the river; they were then dredged round, and weights were applied to cause them to sink. When they reached the clay and began to sink into it, forming a dam, the water was pumped out, and the interior when dry could be excavated, and thus enable the caisson to be sunk to the required depth. When this stage was attained, concrete was thrown down to a depth of about 10 feet, and upon that was laid brickwork in cement about 8 feet deep, until it reached the top of the permanent caisson. Afterwards a dam was formed by piling at either end of each space between the caissons, the ground was dredged out from those spaces, and concrete thrown in until it reached the level of the other work. The sides of the temporary caissons were then removed, and the foundation being thus completed, the construction of the entire pier could be proceeded with.

Each pier is, as we have said, of Cornish granite, with a hearting of brick work in cement, hoop iron bond being used throughout. The length of each is about 110 feet, the cutwaters being about 130 feet long; the widths of the piers, at water level, average 25 feet at base and 20 feet at springing.

The piers on the Surrey side were built with comparative ease, but those on the Middlesex side, especially No. 4 pier, caused considerable anxiety and trouble. Owing to the existence of the old Fleet Ditch in years past, the bed of the river at this point has become soft and spongy, added to which the great deposit of mud that had taken place year by year had caused the ground to be thereabouts of a most treacherous nature; and instead of the caisson sinking to the required level, as in the other instances, it was observed to sink lower and lower, sometimes only half an inch, at others 12 to 14 inches at a time: and until this progress ceased, showing that a satisfactory bottom had been reached, it was not deemed prudent to commence the foundations; thus it has come to pass that the bottom of this pier is upwards of 30 feet below the anticipated level.

Piers Nos. 1 and 2 (counting from the Surrey side) are now complete, and No. 3 pier is half way above springing level, whilst No. 4 pier is at the level of the springing; but both these last are being pushed rapidly forward, and will doubtless keep pace with the other parts of the work.

The shore abutments were formed by means of coffer dams composed of two rows of piles 13 inches square, puddled between. Under the Middlesex abutment has been constructed the outlet of the Fleet Sewer, 9 feet 9 inches by 7 feet 6 inches. This sewer has been diverted from its old course to the west of the abutment, and is intended to act as a storm outlet.

In each pier, at the level of the springing of the arch above the cutwaters, and resting upon a handsome base of Portland stone, are massive polished granite columns from the Isle of Mull. The shafts are 7 feet in diameter, and average 10 feet 6 inches high; they are executed in three blocks; each block weighs from 10 to 14 tons.

These columns are surmounted by bold capitals, carved in high relief, also of Portland stone, upon which rest the semi-octangular recesses of

the bridge; and here it may be open to question whether sufficient attention has been paid to proportioning the apparent load of these sturdy columns to their obviously enormous strength.

The whole of the stone carving has been entrusted to Mr. Philip, whose treatment of the subjects is worthy of high praise. Each capital varies from the others in design. On those on the up-stream side are carved fresh-water birds and plants, whilst those on the down-stream side bear the birds and plants of the marine species.

To emphasise the angle where the web joins the top and bottom flanges of the outside ribs, a roll moulding has been introduced, of wrought-iron tube, 5 inches diameter, attached to the ribs by means of bolts.

Upon each outside rib rests a cast-iron spandrel, enriched with a sunk diamond-shaped pattern, the intersection of the bands being marked by bosses of varied design; these bosses are also placed at regular distances along the centre of the face of the outside rib.

Above the crown of the arch and the spandrel is a handsome moulded cast-iron cornice of bold outline, resting on ornamental brackets of different patterns; and upon this is fixed the parapet, executed wholly in cast iron, and forming a kind of arcade of twisted shafts, with caps of 12 different designs supporting the parapet rail.

The clear width of the bridge between the parapets is 75 feet, giving a roadway of 45 feet and two footpaths of 15 feet each. The total length is 1,272 feet, and the inclination of the roadway will be 1 in 40.

The foundation of the road is composed of a mixture of Kentish rag and asphalt, 18 inches deep, filled in upon the Mallet's Buckle Plates, which for the roadway are ⅝ inch thick, and for the pathway ¾ inch thick. Upon this concrete is laid the roadway of granite pitching, 8 inches thick, with a channel and curb of Guernsey granite; the footpaths are of 4-inch York landing.

The pilasters upon the abutments are of Cornish granite, surmounted by caps of Portland stone, carved in bold relief, with the plants of the marine and fresh-water species facing their respective localities.

The contract was taken in 1864 by Messrs. P. & N. Thorn, for the sum of 270,000*l.* It included removing the old materials and the construction of the temporary bridge.

The work is being carried out in the most satisfactory manner, from the designs and under the superintendence of Mr. Joseph Cubitt, by his agent Mr. F. W. Bryant, who, we believe, designed the whole of the necessary staging and plant, as well as the temporary bridge, and to whose skill may be attributed the fact that as yet not a single accident has occurred.

We noticed the great order in which every branch of the work is being carried on, each body of men acting with the others in perfect concert, and without any confusion such as is at times liable to occur in works of such a magnitude.

During the removal of the old and the construction of the new bridge, three passages have been kept open for the river traffic.

In comparing the old Blackfriars Bridge with the new, it will be found that where the former gave a waterway of 788 feet, the new provides 845 feet; the one having eight piers, whilst the other will only have half that number.

The width of the old bridge was 43 feet 6 inches, giving a roadway of 28 feet, and two footpaths; whilst the new will provide nearly double the width in one case, and more than double the width in the other. As regards headway, certainly the old bridge had about an average of 24 feet 3 inches, whilst the new will only average about 21 feet 3 inches in headway; but it must be remembered that the roadway of the old bridge was 5 feet above that of the new, and the inclination was so great as 1 in 22, whilst the new provides 1 in 40—a feature of very great importance: and again, that the two outside arches were of little or no use for navigation, whilst in the new bridge all the arches will be available. So that in every respect the new bridge complies with the requirements of the enormous traffic going over and under it; providing ample space for carriage way, footpaths, and river traffic, and less obstruction to the ebb and flow of the tide.

In conclusion we may express a hope that the peculiar circumstances which are likely to distinguish the opening of the new bridge, namely, the centenary anniversary of the inauguration of its predecessor, and also the 50th birthday of Her Majesty the Queen, may be happy omens for its long and successful career.

## CAPITALS.

IN the various styles of architecture which have been developed in all countries from the earliest times to the present day, there are no features in which more grace and elegance have been combined, more character evolved, or more ingenuity of design displayed, than in the capitals of columns; and no more fitting features could be found on which the artist might put forth all his power and strength to impart dignity and beauty in perfect accordance with the truest principles of art.

The capital of a column is the channel through which the characteristic refinement of any style shows itself with the most unerring fidelity, being, in fact, the reflex of the purity of the architecture which it helps to adorn.

The curvature of the capital first, and its decorative accessories afterwards, are the two surest exponents an archæologist can find of the exact style and age of the building in which it is found, and any influence from without which has been brought to bear on the building is almost sure to be found in the capital as its chief decorative feature.

We cannot but think, therefore, that by giving from time to time illustrations of the finest examples of capitals of all periods and styles, most of them hitherto unpublished, we shall be introducing into our Journal a most interesting feature. As far as possible we shall

endeavour to follow a chronological order, beginning with those of the Egyptian style.

The earliest forms of capitals with which we are acquainted are those which are found in the excavated tombs of Benihasan in Egypt, which date from the reign of Osirtasen I., 1980 B.C. The

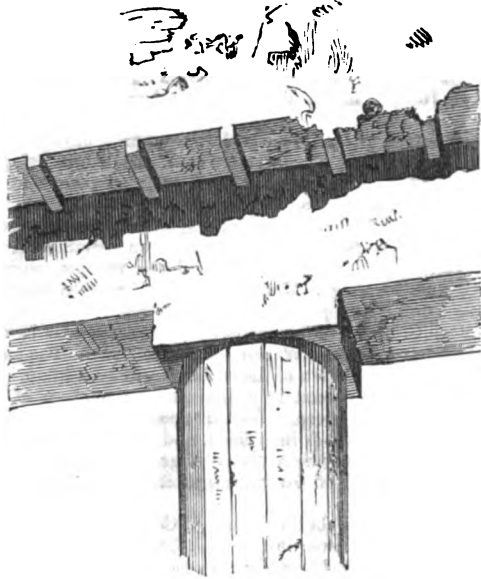


FIG. 1.

columns which these capitals crown are of two kinds, entirely distinct in design, though belonging to the same period: the one, embodying as far as is consistent with the material the representation of natural forms; the other, a simple creation of the mind.

The latter of these two columns is well known as the supposed prototype of the Doric Order. But what modifications it had passed through before arriving at the perfect form it possesses at Benihasan, we know not: as found there, it has either sixteen or eight sides, with a simple square stone as abacus (Fig. 1). The other column with its capital is evidently an attempt, and perhaps the earliest attempt, to employ natural forms in the decoration of stone construction. The column, as we find it in this example, is too

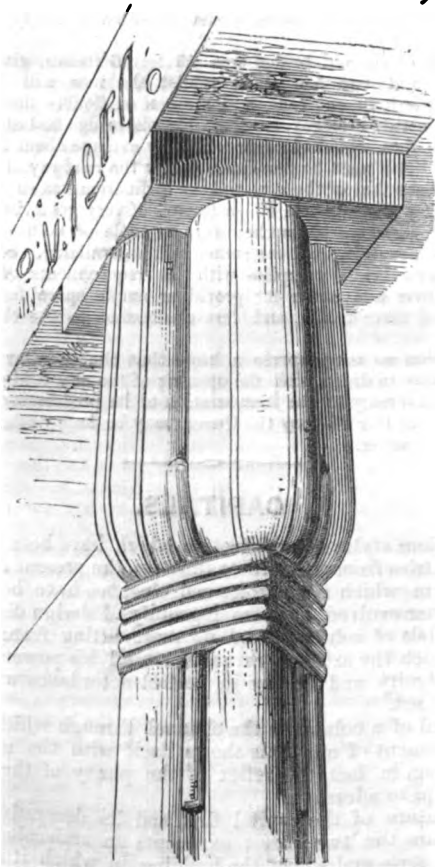


FIG. 2.

slight to bear the superincumbent weight of the roof of the excavated tomb in which it is placed (supposing there was the necessity of any support): we may assume, therefore, that it was copied from one of the poles of a tent; this assumption being further borne out by the architrave which it carries, and by the pent-like form of the stone roof. The poles of the tent were in wood, and at certain times were

probably decorated with the flowers and stems of the lotus and papyrus plants, which on all festive occasions were employed by the ancient Egyptians, just as in the present day plants and flowers are used to decorate and cheer the interiors of our churches and private dwellings. In the application, then, of these natural forms we find that the decoration of these columns at Benihasan consists of four stems of the papyrus, bound together by ligaments, and the buds of the plant form the capital (Fig. 2), with a square abacus on the top to carry the architrave.

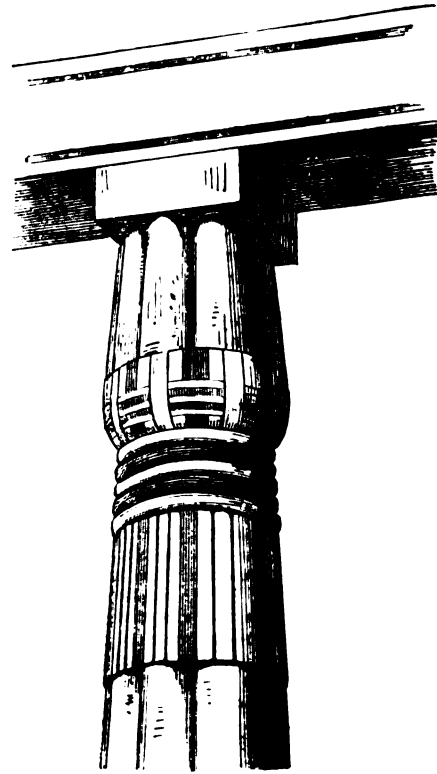


FIG. 3.

Of these two columns and capitals, the first described never seems to have been further developed; we find other examples in the Palace of Thothes at Karnac, and also in the tomb

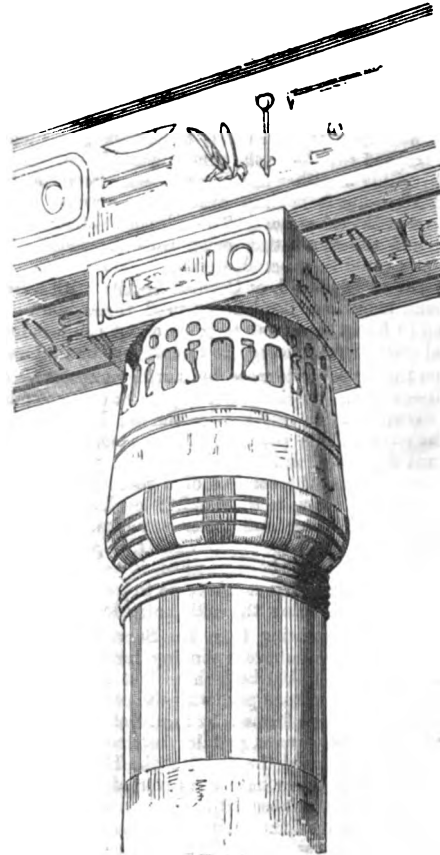


FIG. 4.

of Bayt-El-Wellee, in Nubia: in the latter instance (the column is only three diameters in height, that at Benihasan being five. The second variety of column, however, with what we may call the bud capital, undergoes many modifications: the next example

is found in that portion of the temple at Luxor which was built by Amunoph III., and dates therefore from 1400 B.C. Here the capital



FIG. 5.

has eight buds and as many stems (Fig. 3). In the Ramesseion, 100 years later, the form of the capital is still the same; but the semi-



FIG. 6.

circular form of each bud in horizontal section through the cap (a) has been suppressed in favour of a simple circular form in section (b),

to allow of painted decoration, consisting generally of the cartouche or name of the king who erected it, and of his insignia of office (Fig. 4). The lower portion of the capital, however, has still the ligaments and other smaller buds, which, as well as the ligaments under the cap which bound together the stems, are altogether done away with, in the next example at Karnac giving place to painted decoration (Fig. 5). No other modification beyond that of different proportions seems to have taken place in this capital. Sir Gardner Wilkinson has an ingenious theory that the Greeks, in order to obtain a model for their Doric capital, cut off the lower portion of the bud capital and stuck it under the abacus on the Benihasan polygonal columns: but as the earliest Doric columns, with their widely projecting capitals, differ so greatly from the examples of the polygonal column found in Egypt, there is not much faith to be put in his theory.

The next capital we have to consider is the simple bell cap, which dates from the fourteenth century before Christ, though, from the perfection in which it is then found, there can be no doubt of its having existed in ruder forms previous to that date. It is found in the Ramesseion and in the temple at Karnac, and its form is supposed to have been derived from the flower of the full-blown papyrus, as the capital before described was from the bud. Its under surface is decorated with a series of lines representing the stems of the papyrus, with flowers and buds alternating, and sometimes, as in the example we have chosen for illustration from Karnac (Fig. 6), with the cartouches of the King; round the lower portions of the capital are the sheathing leaves of the full-blown flower, with the binding ligaments under, decorating the necking of the cap. The decoration thus described on the cap is slightly incised and brilliantly coloured. The simple beauty and elegance of this capital surpass any we are acquainted with. The bell capital and the bud capital just described seem to have served all the purposes of Egyptian architects down to the time of the Ptolemies: the former is invariably found on the columns which formed the grand central avenues of the Egyptian temples, whilst the latter crown the smaller columns which form, as it were, the side aisles to the central avenue or nave. The reason for this distinction of position was, possibly, because the light admitted through the clerestory windows at the side lit up the under surface of the bell capital, rendering visible its decoration, whilst it shone down on the bud capital, the inclination of whose sides (the upper part of the cap being the narrowest) seemed formed to receive it.

CONDITIONS OF BUILDING CONTRACTS.

It must not be considered strange in these days of Trades' Union Commissions—of inquiries into the numerous relations subsisting between class interests and the public—between professional institutions and their own members—as also in higher matters, such as the Universities, Charities, and even the important fundamental relations of Church and State—that inquiry should be instituted into the various relations existing between the profession of Architecture and the contractors, as a body, who are employed to carry out its designs. Nor should it be a matter of regret if such inquiry should enable its promoters to clear away any useless forms or obsolete modes of procedure, and the result be greater simplicity and clearer mutual understanding; though it should be no matter of surprise if, after discussion, some changes should be established in a direction quite the opposite to that intended by those originating the inquiry. In fact, we are free to admit that there is an abundant crop of weeds to be destroyed, and a quantity of time-honoured rubbish, which it would be desirable to remove from the field of inquiry, if we would cultivate and improve the state of mutual understanding and healthy confidence which ought to grow up and increase on the part both of architect and contractor with the increase of business between them. Already the subject of its own relations with its members has been taken up by the Institute of Architects, and a step or two of importance taken also—as regards professional services and charges—towards defining those existing between individual architects and their clients; and now it seems that the Institute is about to engage in the consideration of the various relations existing between the architect and the contractor, as well as between the contractor and the architect's employer or client.

The subject seems ripe for consideration, if not for actual legislation—using the word in our own limited sense—and the discussion originated in our pages seems to demand further space for the development of views on both sides of the question. It is to be hoped that all will handle it in the same temperate manner as 'The London Contractor,' and 'The Engineer;' but, of course, each will state his own view, while it more particularly belongs to us to take the *via media*, and look upon the matter as impartially as we can, having at heart the well-being of architecture as an *Art*, as well as the science of building as a business. From the Contractor's point of view, the statements made as to the necessity for a revision of Building Contracts seem to prove some dissatisfaction at least—perhaps not ill-founded—with the working of certain clauses said to be drawn up in the interests of clients only, and some desire for additional ones as protection for the contractor against the architect: yet we doubt if anyone acquainted with the undercurrent—or, indeed, the general course of building affairs—would observe any practical grievance, or be able to refer to any instances, except those given, where architects are stated to have acted in a manner contrary to common sense, and in opposition to what would be considered their ordinary duty as professional men. There has been no difficulty in arranging contracts after the ordinary recognised mode, and there is no difficulty now in obtaining any number of tenders for any important work, where the contractors would be bound by the ordinary conditions, and have to sign the ordinary documents.

To meet exceptional cases of course exceptional legislation is required,



if we would say, as all would desire, that every wrong has its remedy; and although it is obviously impossible to meet every case, and to prevent every sort of misunderstanding which occurs, or can be made to occur, between all parties, we yet admit it is the duty, as it will be also the earnest desire, of the profession, as an honourable body of men, to provide a remedy for any injustice pointed out as resulting or likely to result from its forms or customs, especially when such arrangements are imposed by themselves, whether as safeguards for their clients, or for the better mutual understanding between themselves and their contractors.

It would be a slur upon the profession, to say nothing of the resentment or resistance it would provoke, not to listen to any fair representation of injuries when it has the opportunity and possesses the power to prevent them; but, on the other hand, it would be weakness to give way to any mere fancied wrong, or deliberately to throw away any important safeguard, or any proper protective barrier against evils which have shown themselves from time to time and given cause for such protections. This would not merely be sacrificing a client's interests, but it would be lowering the standard of right, and would eventually lead to less perfect construction, cheaper and more shifty expedients, and result in damage alike to building and to builders.

The questions which are raised, be it remembered, are against certain strict rules, regulations, and conditions made by architects, and against certain arbitrary powers given into their hands for the express purpose of compelling right to be done by the contractor to the client, for seeing that money's worth is given for money, and as a guarantee for the fair dealing of the one towards the other:—of the client towards the contractor, be it observed, as much as of the contractor to the client,—for this point of the *independent* position of the architect is forgotten or ignored too much in the consideration of this matter. The architect has to see that the money is properly paid as well as that the work is properly done, and the contractor has the benefit of the architect's position and knowledge, without any charges or any liabilities to him in the smallest possible degree.

And it is not often known, or remembered indeed, how much a contractor is frequently indebted to an architect for clearing his accounts, for providing him with his 10 per cent. profit (on what the architect himself gets but 5 per cent. from his client for designing), and for making the contractor's own workmen do their duty, to the saving of his pocket, his reputation, and his credit.

In any ordinary agreement between parties, if each means honestly by the other, and so acts whenever any question arises, there is little room for complaint of the strict letter of the document, for, of course, no conditions or clauses are called into play; still they exist, very properly, to attest the meaning of the parties if required to be referred to. Even with the most honest intentions, in all the complicated affairs of life, and especially in those matters connected with building operations, it so frequently happens that different interpretations of the same form of words, or variations in the manner of carrying out the intention supposed to be conveyed by them, occur in the most unlooked for way, that strict conditions and 'good set' terms are very properly introduced in all building contracts; and the *raison d'être* is thus so generally understood that no objection is made to such ordinary hard words and well-known strict phrases, as are customarily borrowed from common legal documents, where each party is supposed to be capable of over-reaching the other, and to be likely to be incapacitated in a variety of ways—to become lunatic or bankrupt, or to leave the business of this world altogether to his 'executors, administrators, and assigns.'

If no such questions or differences ever did occur, how much would an architect's duties and responsibilities, and, we may add, those of the contractor also, be lightened, and how much more valuable time would be available for the real work of designing and executing a building instead of merely talking about it! It is needless to say how pleasant it would be to an architect if there were no extravagant estimates to cut down, no 'cutting' estimates he was obliged to accept, and no attempt to gain by day-work what was supposed to be omitted or deliberately lost, in order to obtain preference for a 'job'—no attempt to run up a bill of extras for work fairly included in the contract, no misreading of the obvious intent and meaning of the specification and drawings. If work were always done in the 'best and most workmanlike manner,' with materials 'the best of their several sorts and kinds;' if workmen were neither 'careless, negligent, nor ignorant of the work on which they were engaged;' if works were always completed at the time agreed upon and in the manner specified, the architect's 'satisfaction' would be 'entire' and complete, and there would be no withholding of certificates and no question as to the amounts due to contractors, no grounds for complaints, and no work for lawyers or arbitrators.

But are the facts such that contractors can fairly say 'This and this clause is unnecessary, that stipulation is needless, this kind of guarantee is never required, and such and such a condition is obsolete'? Looking broadly at the general conditions as adopted by most architects, without just now referring too minutely to details, we think it will be admitted that they have been framed to meet certain delinquencies and neglects which from time to time have been experienced, and that every precaution adopted has been suggested by, or is referable to, some previous error, mistake, or misunderstanding.

(To be continued.)

Mr. W. B. Scott is engaged in the preparation of a series of designs to be employed for the decoration of two of the large windows on the staircase in the South Kensington Museum. These designs are intended to illustrate the arts and crafts of civilised life. As to the arts, Michael Angelo and Raphael have been chosen as types of diverse states of design: to each of them a window is appropriated. The mode to be employed in placing these designs on the glass is chosen by Mr. Scott to resemble in its results what is called 'grisaille and yellow stain.' The designs are to be drawn in slightly shaded outlines on the glass, and in a brown tint. Yellow stain or some simple tint is to be employed *decoratively*, as the artist thinks fit.

## ILLUSTRATIONS.

### THE CHICAGO WATERWORKS.

**A**BSOLUTE novelty is rare in the works of man. In every branch of human art and human science we may trace the progress of development. The noblest creations of the architect or of the engineer have, for the most part, sprung from some small and insignificant seed, cast, it may be, into a fruitful soil by an unknown hand.

The last thirty years have witnessed the introduction of more unprecedented and altogether novel applications of human skill to the increase of human comfort than tenfold that length of time during any former period of history. The combined, but distinct, inventions of the locomotive engine and the iron railway have led to the application of iron to building purposes in such a manner that the effect has been equal to that of the introduction of a new material. Hence arose bridges, roofs, viaducts of striking and original boldness of design. To all this the engineer is now somewhat accustomed. In mining and tunnelling below the surface of the earth, or even of the water, again, he may think that his experience is ample. For almost any work which may now be expected from an engineer we are able to find a precedent.

We have, therefore, the more pleasure in laying before our readers the details of a plan, which is at once novel, bold, and carefully considered, for the supply of water to the City of Chicago. The derivation of water from a lake by a tunnel, or *emissarium*, is not, of course, anything in itself new. Lake Alba was drained by the Romans, A. V. C. 358, by means of a subterranean passage. And as to tunnelling under any inland waters, it is hardly possible that difficulties of a greater magnitude than those which were vanquished by Sir M. I. Brunel at Rotherhithe should beset the operation.

But, with this allowance, the merit of originality of design still remains with the engineer of the Chicago Waterworks. The water-supply of that city is taken from the neighbouring lake. With the rapid increase of population which forms so striking a characteristic of the great American cities of the day, has ensued the natural consequence of the pollution of the waters of this lake. Our neighbours, being no more advanced than ourselves in the knowledge of the best mode of utilising the valuable elements of sewage, turn their drainage into the lake, as we turn ours into the Thames. The lake has become foul in consequence, and the water so far affected as to be increasingly unfit for domestic use.

The method adopted to remedy this evil will be so clearly understood by an examination of the drawings, that it is not necessary to say very much in explanation. The plan, in two words, is this:—A shaft is sunk on the shore of the lake, and another is sunk in the lake itself, at two miles' distance from the shore. A species of pier, or tower, called a 'crib,' is constructed for the protection of this shaft, which was designed not only to act as a working-shaft for carrying on the excavation of the tunnel, but also to afford an inlet for pure water on the completion of the works. These two shafts are connected by a driftway, or small tunnel, driven through the solid clay which forms the basin of the lake, the exact length of which is 10,567 feet. The diameter of this *emissarium* is five feet in the clear, to which has to be added, to measure the excavation, the space occupied by two rings of brickwork. The rate of progress attained in working from both ends averaged 14 feet per diem at each face. The cost of the land and water-shafts together is stated at 120,000 dollars, that of the tunnel at 260,000 dollars. It must be borne in mind, with reference to these prices, that the nominal rate of wages is very high at Chicago; sewer-masons earning from 18s. to 21s. per diem, and ordinary labourers as much as 6s.

The engineer has not lost sight of the possibility of the spreading contamination of the waters of the lake. Careful arrangements have been made, as will be seen on the drawings, to allow of an extension of the tunnel. There is a provision in the crib for the sinking of a second shaft. The tunnel is built so as to support and form a junction with this structure, and is run a little distance lakeward, so as to give a fair start to the new work whenever it may be commenced. A strong iron bulkhead is built into the tunnel, designed to cut off all communication during the progress of the extension, and to allow of free communication so soon as that second instalment of subaqueous work shall be completed.

The care and forethought they displayed are remarkable; but the question arises, what will be the sanitary state of a city on the shores of the lake when the pollution of its waters has reached such a pitch that pure water cannot be found at a distance of a couple of miles from the shore? We think it would be a matter of evil promise for the citizens, if the time were to come when they should require Mr. Desborough, the engineer, or his successor, to dive and to burrow a second time in search of an untainted supply. Like all our sewage arrangements, the Chicago Waterworks bear, on their design, (written in large letters too), the designation 'temporary.' But as a method of meeting an immediate want, by a bold and eminently straightforward course, these works merit a very high degree of praise.

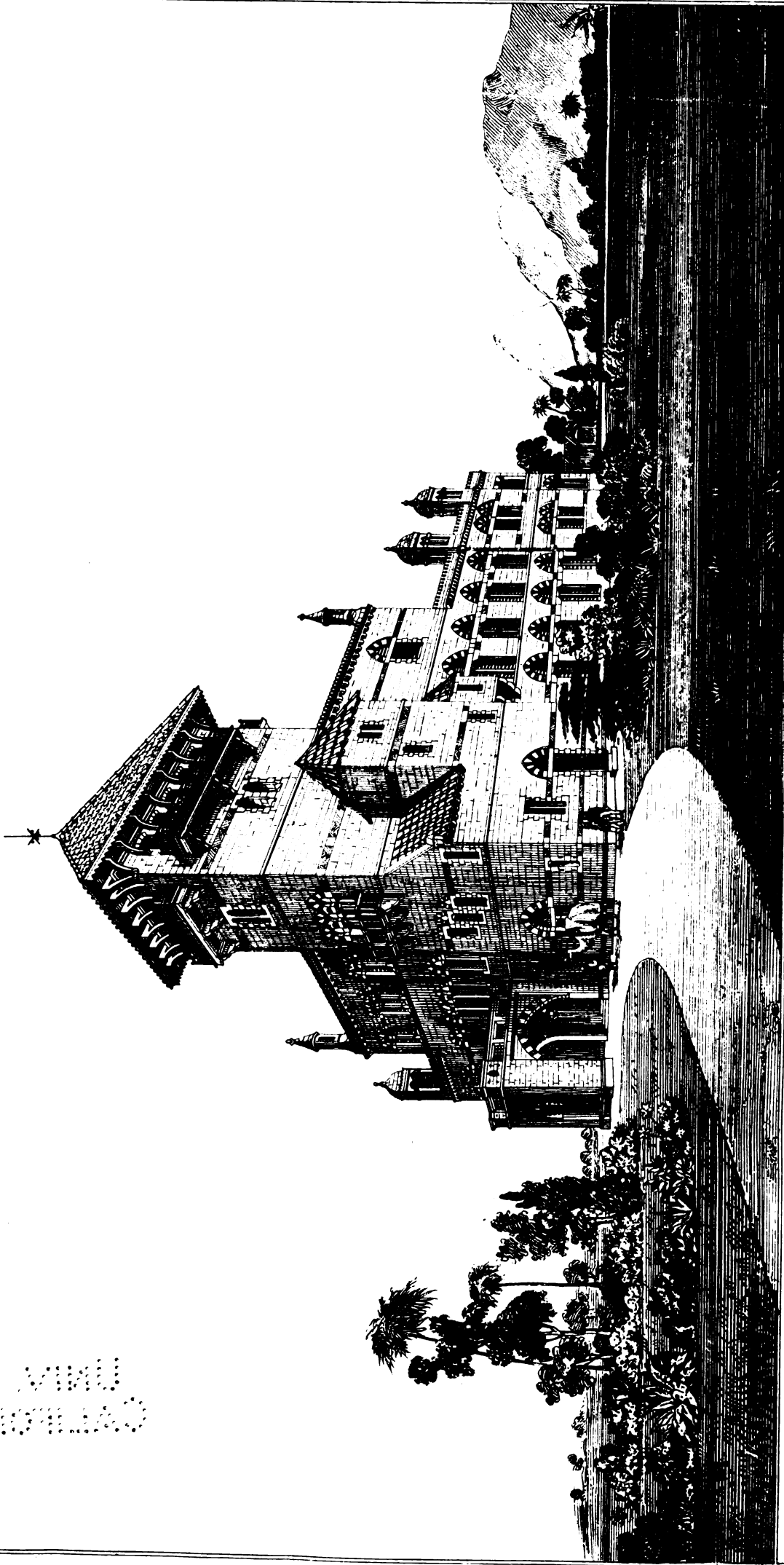
The chief point of interest, in the details of the work, is the construction of the artificial island, or crib. Special attention will be



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California

The Architect Feb. 27<sup>th</sup> 1869.

THE  
ENGINEERING  
COLLEGE



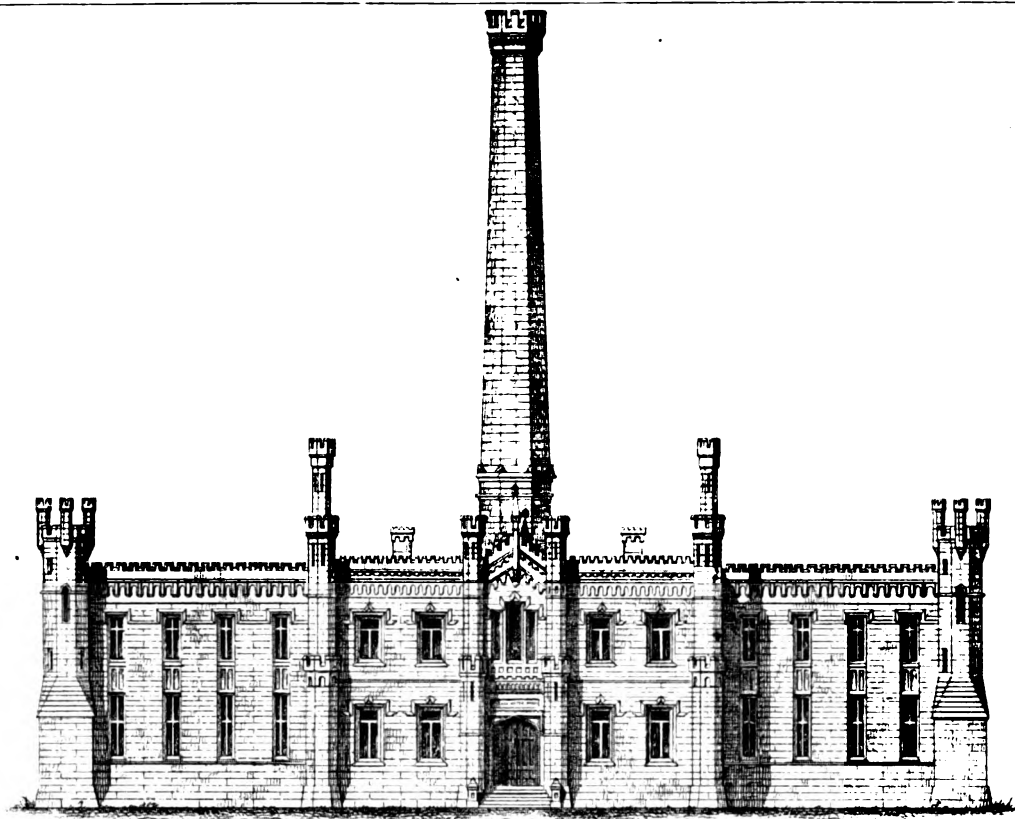
Leese & Mason, Lith.

# The Engineering College · Poona · Bombay Presidency,

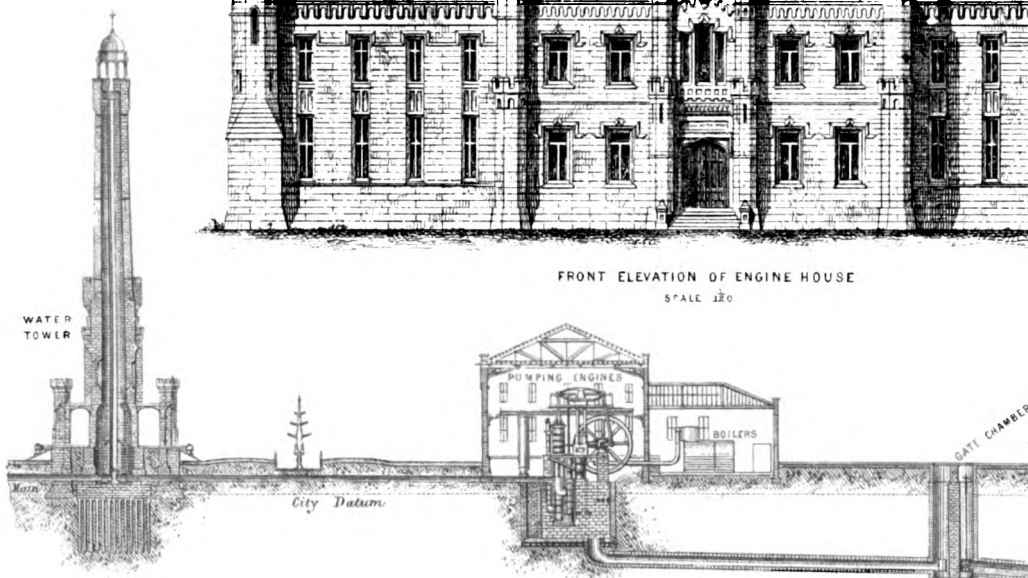
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Printed by W. H. Stanger & Co. London, E.C.

UNIV. OF  
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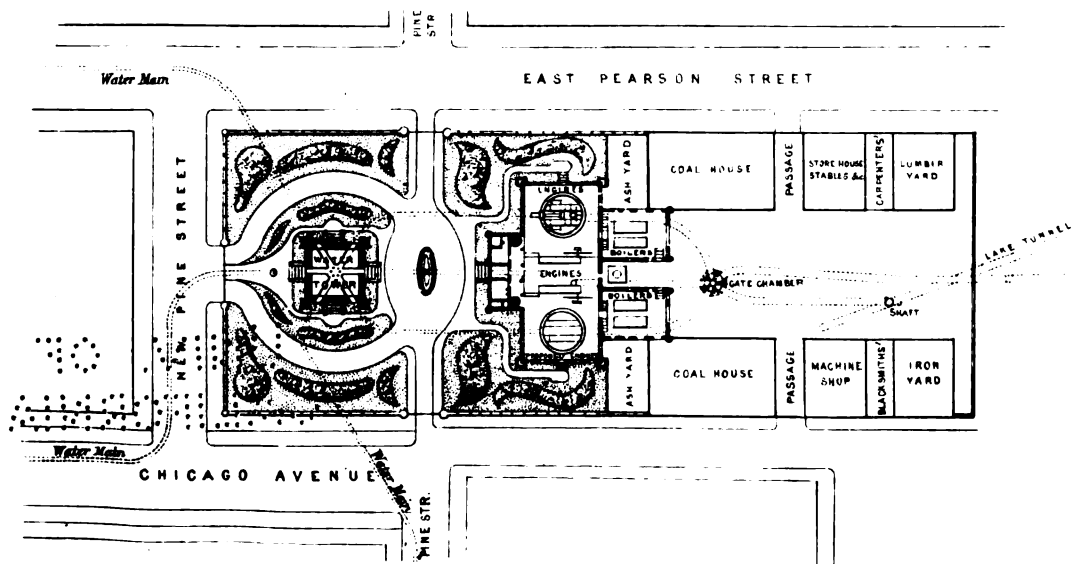
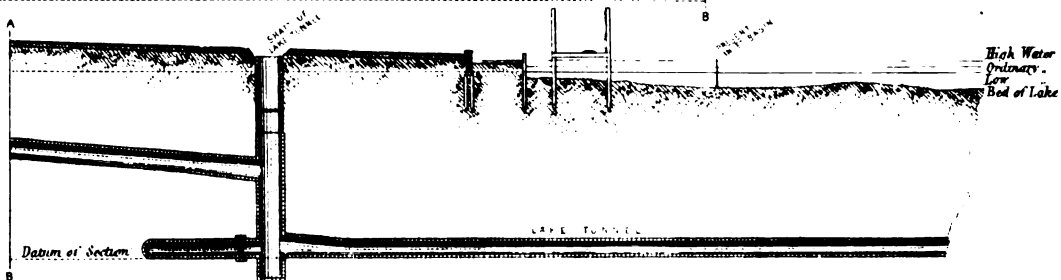


FRONT ELEVATION OF ENGINE HOUSE  
SCALE 1/20



Datum line of Section 72.345 feet below Ordinary Water on the Lake, or 70.345 feet below 'City Datum' the level of Low Water in 1847.

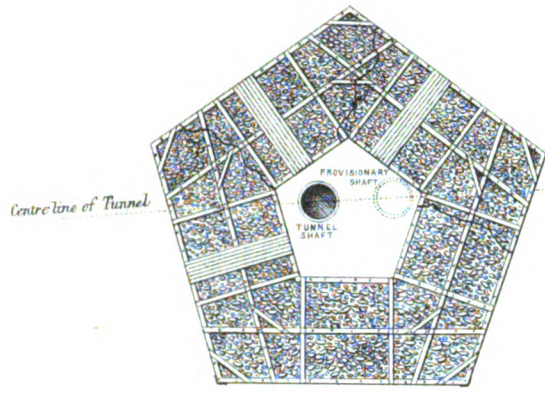
SECTION -  
LAKE TUNNEL  
& CONNECTIONS.  
SCALE 1/40



PLAN OF SITE,  
SHOWING GENERAL ARRANGEMENT OF THE WORKS & BUILDINGS

TUNNEL UNDER LAKE MICHIGAN FOR SUPPLYING WITH PURE WATER THE CITY OF CHICAGO, ILLINOIS, U.S.A.



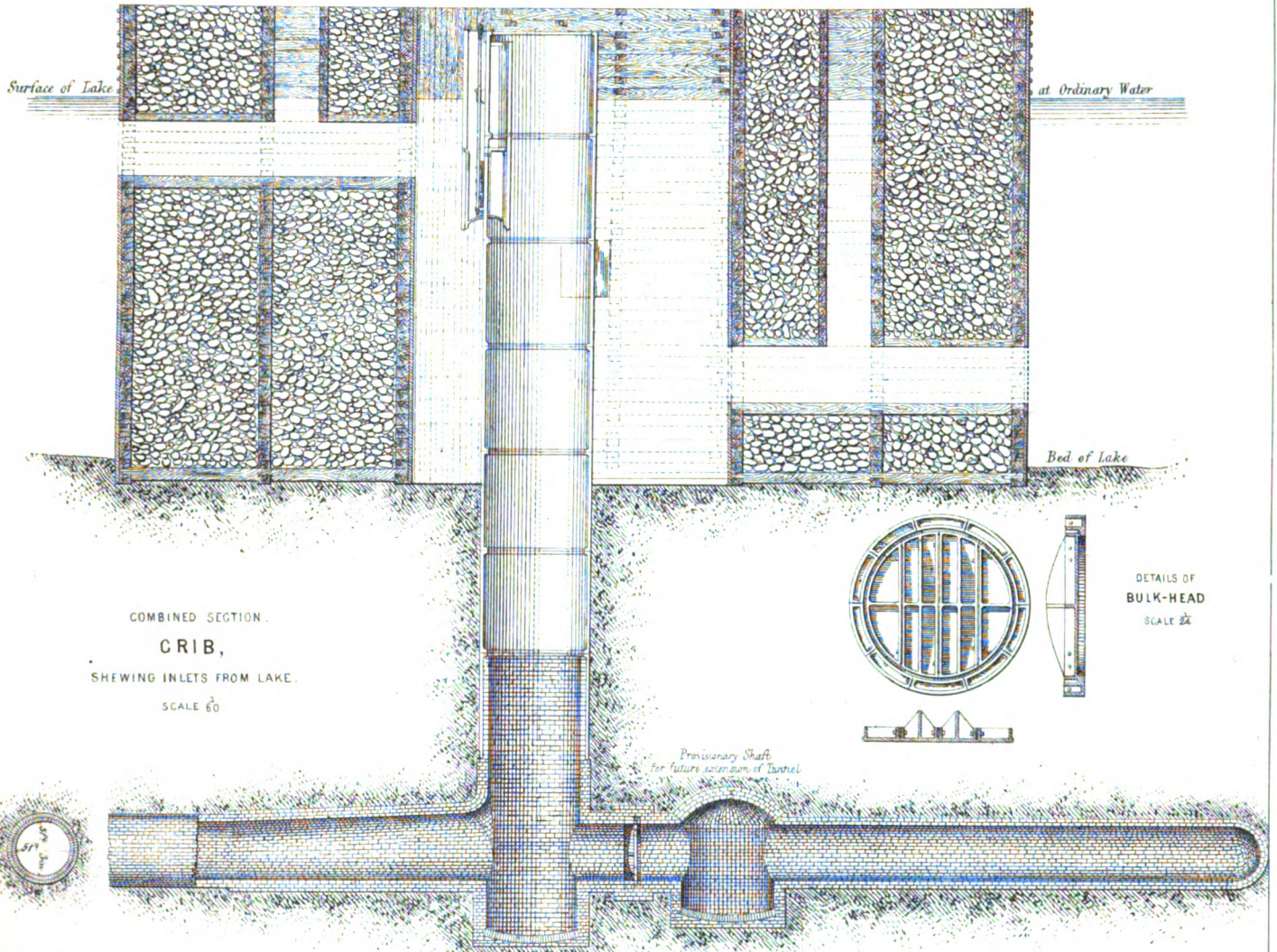


COMBINED PLAN, SHEWING INLETS FROM LAKE.



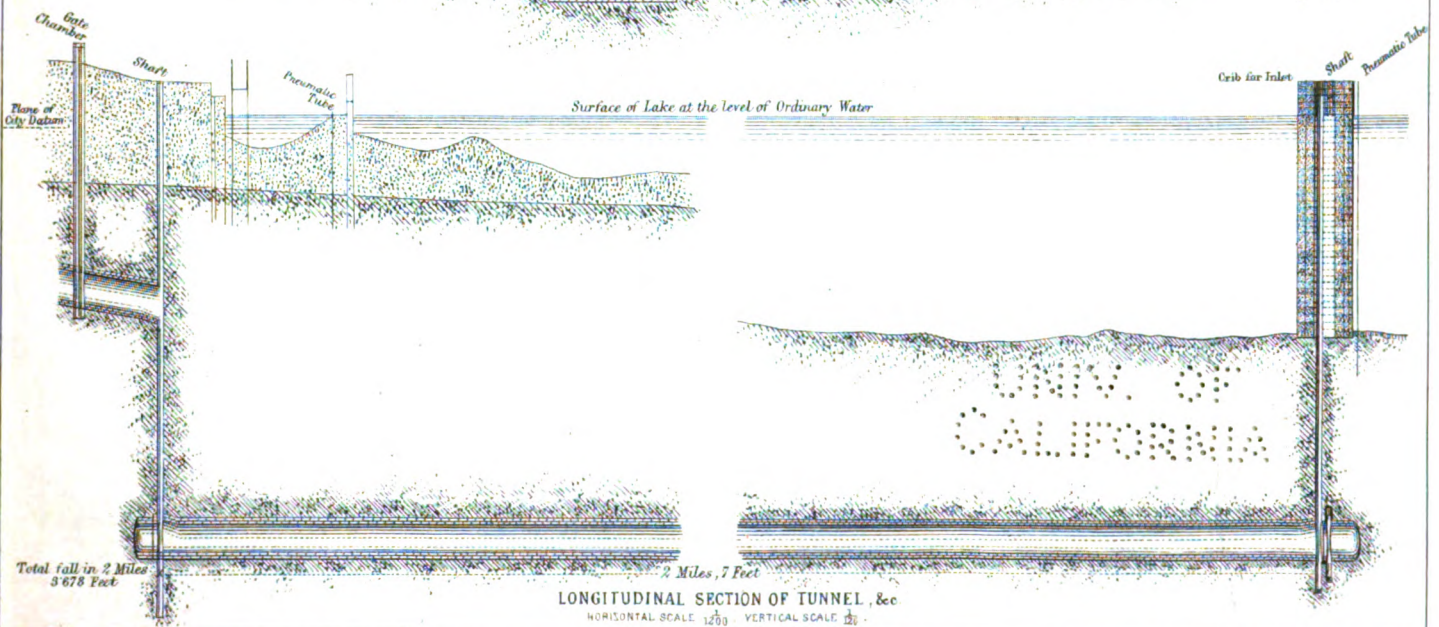
PLAN OF CRIB FOR INLET TO LAKE TUNNEL

SCALE 1/80



COMBINED SECTION.  
CRIB,  
SHEWING INLETS FROM LAKE.  
SCALE 60

DETAILS OF  
BULK-HEAD  
SCALE 24

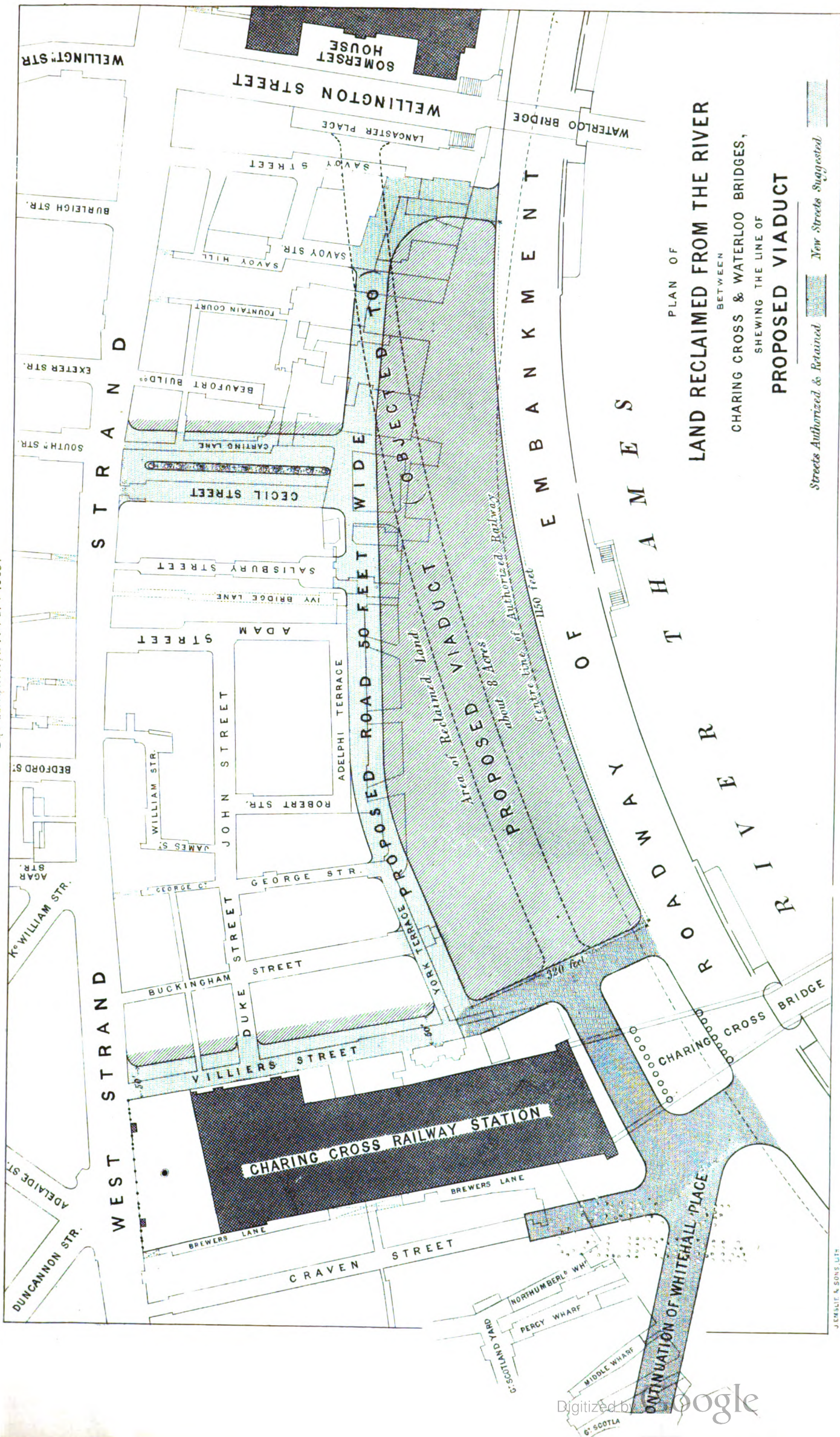


LONGITUDINAL SECTION OF TUNNEL, &c  
HORIZONTAL SCALE 1/200. VERTICAL SCALE 1/20.

70 vnu  
ANSONIA



The Architect, Feb. 27<sup>th</sup> 1869.



PLAN OF  
 LAND RECLAIMED FROM THE RIVER  
 BETWEEN  
 CHARGING CROSS & WATERLOO BRIDGES,  
 SHEWING THE LINE OF  
**PROPOSED VIADUCT**

*Streets Authorized & Retained*  *New Streets Suggested* 

Drawn by W. W. Stanger & Co. Architects, F.C.

J. EWSITT & SONS, LITH.

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directed to the experience thus obtained with reference to a plan, that is said to receive support in very high quarters, for a submarine tunnel under the Straits of Dover. We shall gladly open our columns to any further information which Mr. Desborough, or his friends, may feel desirous of communicating to our readers.

#### THE ENGINEERING COLLEGE, POONAH.

THIS building, of which we give an illustration, is one of the group of public buildings in the Bombay Presidency which in a great measure owe their existence to the public spirit and enlightened exertions of Sir Bartle Frere, while Governor of Bombay. The College has been built by the agency of the Public Works Department, under the immediate superintendence of Colonel Howard, R.E., from the designs of Mr. James Trubshawe, late Consulting Architect of the Bombay Government; and it is said, by those who have seen it, to be a highly successful building, notwithstanding that it was executed almost entirely away from the architect's superintendence—in fact, the larger part of the details were prepared by him, with the assistance of Mr. Roger Smith, in this country, and sent out to Bombay.

### SOCIETIES.

#### Royal Institute of British Architects.

The ordinary fortnightly meeting of this Institution was held on Monday, the 15th inst., Joseph Clarke, Esq., Vice-President, in the chair.

Among the donations announced was a number of works on art and science, which had formed part of the library of the late G. R. Burnell (Fellow). On the proposal of Professor Kerr, a special vote of thanks to Mr. Burnell was passed for the very liberal manner in which he had fulfilled the wishes of his brother, lately deceased, as regards this contribution.

The CHAIRMAN announced that, in consequence of the intervention of an additional special meeting on the 1st inst., the special general meeting for the award of the Royal Gold Medal and Institute Medals and Prizes would be held on April 5, instead of on March 1, but that on the last-mentioned day the recommendation of the Council in respect to the award of the Royal Medal would be announced.

Mr. W. BENSON was called upon to read a paper entitled the 'Science of Colour,' from which the following are extracts:—

'I propose in this paper to devote myself mainly to point out some particulars in which it seems to me, after a long and careful study of the whole subject, that the theory of colour usually maintained is not exactly what it ought to be. Much of the value of what has been ascertained about colour is lost through a misconception on some essential points, and important discoveries have been fruitless for want of being known and understood by those who should use them.

'There are innumerable different kinds of light, each distinguished by its peculiar refrangibility, and the peculiar sensation of colour with which it affects the eye; and the colours of all objects are combinations of the colours of those particular kinds of light which the same objects may happen to send to the eye.

'Newton, with marvellous skill, effected and proved the analysis of the colours of natural objects by the aid of a prism, and called the prismatic colours primary colours, because he did not go on to investigate the relations of these prismatic colours to each other, but assumed, as it seems, that they were all equally simple and uncompounded, notwithstanding that in some of his admirable experiments he found that adding together parcels of the prismatic rays produced colours which were identical with those of other simple prismatic rays.

'About a century after Newton, the great German astronomer, Tobias Mayer, observing that it was possible with mixtures of red, yellow, and blue pigments to produce an imitation (though but a poor one) of all the prismatic colours, concluded, too hastily, that these three alone were simple colours, and deserved the name of primary colours. We do not read that he tested his conclusions by any cross experiments, or, in the manner of Newton, investigated the way in which the colours of pigments and of their mixtures were produced,—otherwise he would not have failed to find out what Newton had clearly stated before him, over and again, that pigments act by destroying light, and that the colour of the mixture of two pigments is not a mixture of their separate colours, but merely the colour of those prismatic rays which both of the pigments leave undestroyed—some colour, in fact, which is common to the colours of both of the separate pigments. But Mayer's views were plausible; they seemed obvious to the eye; the illusion they concealed was not easy to make so clear; they were adopted and laid down authoritatively by Scheffer in his "Art of Painting," and by other writers; and, therefore, without any scientific examination, they were, and are to this day, received by people in general as undoubted truths, and form the foundation of that system of colour-doctrine which is now taught even in our Schools of Design under the authority of the Department of Science and Art, and which also prevails on the Continent.

'After the lapse of another century, however, some accurate observations have at length been made upon the prismatic colours, which, though they have remained for now eight or nine years almost unnoticed by practical men, will, I doubt not, in future be regarded as having established the true theory of colour, and as having relieved the student in this department of art from the difficulty or impossibility of reconciling the requirements of a false or defective theory with the approval of a refined taste or a nicely discriminating eye. The experiments I refer to are those which were made by Professor James Clerk Maxwell on the proportions in which different sets of three rays taken from different parts of the spectrum must be combined in order to produce the sensation of white, and will be found detailed

in the Transactions of the Royal Society for 1860, to which I must refer those who would fully understand the process employed. They constitute a sort of trigonometrical survey of the spectrum, on a principle which determines the relations of the colours of all the prismatic rays to each other. These experiments were made with a refined apparatus, and repeated many times over by different observers, to ensure the correctness of the results; and they distinctly prove that three of the prismatic colours, namely, the best red, the best green, and the best blue, which occur near the beginning, the middle, and the end of the spectrum, when mingled all together produce white, like the mixture of all the prismatic colours; and when combined in pairs produce all the intervening prismatic colours in the full strength which they possess in the spectrum: that is to say, the prismatic red and green, when combined in different proportions, produce the prismatic orange, yellow, and yellow-green, which lie between them in the spectrum, and the prismatic green and blue, when so combined, produce all the intervening sea-green hues.

'From these facts, then, it is scarcely possible to doubt that the prismatic red, green, and blue give the nearest possible approach to simple sensations of colour. What simpler explanation can be given of the wonderful sequence of colours in the spectrum than that the eyes of all persons who possess the ordinary faculty of discerning colours\* are capable of three colour-sensations alone, and that one of these, red, is excited most strongly by the less refrangible rays; another, green, by the rays of mean refrangibility; and the third, blue, by the more refrangible rays; intermediate rays exciting the first and second, or the second and third sensations, together with a more or less near approach to equality? But here it should be observed that these three simple sensations are not excited with equal depth, that is, with equal approach to purity, even by the rays which are best of each kind; the deepest in colour of the three rays is the blue, which is far the least luminous in proportion to its strength of hue; the next deep is the red, and the least deep the green. In other words, the prismatic blue is less diluted than the red, and the red less than the green. While, therefore, there is no evidence that even the sensation of blueness can be excited with perfect purity, it is certain that that of redness cannot, and still less so that of greenness. It is well to bear in mind these essential distinctions in the depth of colours, not only because they give the reason why so many blue and red pigments, flowers, and other coloured surfaces excel in depth and power the best of a green hue, but also because, if I am not greatly mistaken, the depth of a colour is almost as important a consideration as the strength of hue, or even as the hue itself, in any composition of colours.

'I will now pass on to the exposition of the colours produced by throwing together different continuous parcels of the prismatic rays, and excluding the rest, which seem to me to constitute a very interesting part of the science of colour. For the method of exhibiting these, I must rely on experiments derived by myself. These colours are the most distant of all possible colours from that medium, grey, which is the mean or average of all colours, and are therefore the most striking of all colours that the eye can behold. The colours of the most vivid pigments, flowers, or solutions, do not equal those of perfect continuous combinations of the prismatic rays, because no substance whatever sends to the eye all the rays of one part of the spectrum, and utterly destroys all the rest. It is, however, easy to see these beautiful colours, by artificial combinations of the prismatic rays (every one, indeed, who has amused himself with looking at the edges of white and black spaces of different breadths through a prism has seen them), and the study of them is very instructive; I mean the intelligent study of them, not the mere bewildered imagination which they excite when their cause and their meaning are not known.

'When we look at the spectrum of a broad band of white (such as the rectangle) upon a black ground, in the lower part of the diagram, the prism being parallel to the edges of the band, and held so near to it that a white space shall appear in the middle of its spectrum, we have in that spectrum, first, on its lower side, a series of all the colours produced by adding together different parcels of the prismatic rays, being from the least refrangible or red end; and on the other side a series of all the colours produced by adding together parcels of the same rays, beginning from the most refrangible rays.

'If we look at the spectrum of a broad black band upon a white ground (as shown also on the same diagram), the same colours are of course seen, but reversed in position; the prism being held sufficiently near to leave a black space in the middle of the spectrum. In each case the colours seen are plainly combinations of different parcels of the pure prismatic colours, beginning always at one end or at the other end of the spectrum.'

Coloured diagrams of all these four spectra were exhibited, showing the gradations of their colours.

'The principal prismatic colours and their combinations constitute the very alphabet of the science of colour, and are as essential to any intelligent acquaintance with it as the system of notation is in arithmetic, or the scale of notes in music. It is a most fortunate circumstance that we are able so easily to produce an invariable exemplar of colour, which, though not actually perfect (since even the colours of a pure prismatic spectrum, as I said before, are, in some degree, diluted or mixed), yet excel all others in depth; and are, therefore, the best which it is possible to find, to exemplify the nature of colours, and to teach the eye to distinguish, at first sight, the true complementary colours. How far the uneducated or falsely educated eye is liable to err may be seen by taking the diagrams of primary colours, and their complementary secondaries, usually given in popular works on colours, and comparing them with the series of Nature's painting. The former are in general so extremely diverse from the truth, excepting blue and red, that they scarcely present an approximation to it. Blue, for instance, is usually opposed to a very red orange, instead of to yellow; green to red, instead of pink; red to a warm or yellowish green, instead of to the colour which I have called sea-green—a colour that would, by some,

\* An extraordinary dichromic vision is more frequent than is usually supposed, in which yellow and blue are the only distinctions of hue, the red and green rays appearing to differ from the yellow in brightness alone.

be thought nearer to light blue than to green. When we consider how easily these colours are produced, how striking they are to the eye, how simple the explanation of them is, it is surprising that hitherto no attempt has been made to make use of them in educating the eye, to distinguish the true primary and secondary colours, by accustoming it to the inimitably beautiful productions of Nature's unerring pencil. The student may see here in a moment how near the colour of a pigment is in hue to the true red, green, or blue, or to their complementary colours; for nothing can be easier than to compare the colour of a pigment with any of these combinations of the prismatic colours. He may also see how far any pigment, though correct in hue, falls short of the standard of perfection in the depth or in the clearness of its colour. And there is no difficulty in learning how to use a prism; indeed it may easily be fixed in the right position, with the white and black objects of view, above described, so that the student will merely have to apply his eye to it whenever he would see the colours it produces. But, in truth, a very few inspections of these colours, and comparisons of them with the colours of pigments, will generally be enough so to impress them on his mind that he will have no difficulty in referring the hue of any bright pigment, afterwards, very nearly to its correct place in the whole circle of colour.

Mr. CRACE would make some observations on this very interesting and able paper. He must confess that it was an exceedingly difficult thing to speak upon a question which enters so much into details. While recognising all the ability and intellect which had been brought to bear upon the system propounded by Mr. Benson, he must say that he had failed to convince him. He had read Mr. Benson's book and also the various letters which that gentleman had published on the subject, yet he failed to perceive any reason for the condemnation of yellow as a primary colour. After all, Mr. Benson addresses himself to light instead of colour; the two are rather different things. He would begin with light and proceed to colour, for the one was the foundation of the other. If we went into a Southern climate under a blue sky lighted up by a yellow sun, it at once became apparent that yellow was a primary, not a secondary colour. Again, take some of those experiments with the prism which could be tried by everyone, and here it would be found that the three primary colours given by it are yellow, red, and blue. There must be stronger reasons, far stronger than what he had heard adduced, for him to alter his opinion on the subject. And he said this while not wishing in the least to detract from the high order of intellect, of talent and perseverance which had been displayed. Mr. Crace illustrated the effects of combination of colour by the aid of small diagrams and coloured glasses.

Mr. WILLIAM WHITE, who agreed with Mr. Benson that red, blue, and green were much more harmonious than red, blue, and yellow, moved a vote of thanks to the lecturer for his very able discourse.

This was seconded by Professor KERR, who pointed out that the real issue between Mr. Benson and his opponents was, that his mixtures of colour were obtained by mixing coloured rays of light, and that those of Mr. Crace or others were obtained by mixing pigments, which was a very different thing. Several gentlemen took part in the discussion, including Mr. Benson, who in his reply pointed out that Professor Kerr had correctly seized the essential point of difference between him and most of those whose views were opposed to his. The vote of thanks was then put by the Chairman and carried unanimously.

The meeting then adjourned till Monday, March 1, when a 'Memoir of the late Joseph Bonomi, A.R.A.' by Wyatt Papworth (Fellow), as well as some remarks on the Chevalier Da Silva's work, 'Signes qu'on voit gravés sur les Anciens Monuments du Portugal,' by Mr. George Godwin, F.R.S., will be read.

## PARLIAMENTARY PROCEEDINGS.

### The New Law Courts.

On Friday, the 19th, Mr. GREGORY gave notice that on the 5th of March he should call attention to the site appointed for the erection of the new Law Courts, and move a resolution on the subject.

### The Proposed Viaduct on the Thames Embankment.

On the same evening Lord ELCHO brought this subject before the House, and, maintaining that nobody required or approved it, pressed the First Commissioner of Works to relieve the Metropolitan Board of Works from the necessity of carrying it out. Seconded and supported by Mr. C. BUXTON and Lord BURY, Lord ELCHO enforced, from this and similar blunders, the necessity of giving to some public department a control over all great works in the metropolis, and suggested the appointment of a Council to advise the First Commissioner of Works.

On Tuesday, February 23, Lord ELCHO's motion for a select committee was carried. It was seconded by Mr. TITE, M.P., who stated that the Board of Works would be glad to be relieved of the outlay incident to the project, and, referring to the admitted necessity for some control and advice upon public works, stated that the Royal Institute of British Architects, of which he was President, would, he was sure, feel flattered if their opinion could be sought upon questions of this kind.

Mr. LAYARD agreed with all that could be said in disparagement of the viaduct, the history and design of which he narrated at some length. He had no power in the matter, except what personal influence he might exercise with the Metropolitan Board; at some future time he proposed to bring before the House the public question of his department's powerlessness in these matters. He hoped that a strong expression of opinion from Parliament might induce the Metropolitan Board of Works not to proceed farther at present.

Mr. COWPER said a few words in defence of the viaduct.

Mr. BERESFORD HOFFE drew from the transaction the moral that we needed a really strong Ministry of Public Works and Art; and the discussion closed by a notice of Lord ELCHO to move for a committee on the subject.

## REVIEW.

### CORRESPONDENCE RELATING TO THE SITE OF THE NEW COURTS AND OFFICES OF LAW. John B. Day, London.

This pamphlet consists of a reprint of Sir Charles Trevelyan's letter to the *Times* up to the 5th inst., together with some other letters, provoked by them, on the subject of the site of the Law Courts; the publication is illustrated by three plans, one showing the building as proposed, a second showing the site purchased, and the third showing the proposed site.

These plans have the advantage of being tinted, but in other respects they do not, we think, inform the reader more clearly or so fully as those we have already given. They fail to show the approaches northward with the same completeness which we judged essential. A block plan of a proposed or suggested building for occupying the site is shown, but it is of an indefinite nature, and does not, we think, serve any very useful purpose. It will, however, be of great service to those who desire to master the question thoroughly, to possess themselves of this edition of Sir Charles Trevelyan's letters, published with his sanction. These letters have done much to awaken public attention to a subject which we have felt to be one of the greatest importance, and Sir Charles Trevelyan by writing them has earned the gratitude of all who have the progress of Architecture at heart.



### THE ARCHITECTURAL MUSEUM.

DEAR SIR,—I must not allow our most earnest and indefatigable officer Mr. M. J. LOMAX, the Assistant Secretary, to remain unnoticed in the remarks you make of me as the Honorary Secretary. Few know what Mr. LOMAX has done for the Museum during our 'eclipse' beyond the President, the Treasurer, and myself.

I may add, considering the little practical work we have really been able to do for the last two years with our whole energies devoted towards raising funds for the new building, there is no Society in the profession with such a firm and good list of subscribers as our own. We are daily increasing our members; and I hope we shall not only soon clear off the debt on the new Museum Buildings, now of over 1,000*l.*, but shall extend very much the use of the Museum.

I am, dear Sir,

Yours faithfully,

JOSEPH CLARKE.

Feb. 22, 1869.

### ARCHITECTURAL EDUCATION.

SIR,—I regret that in my last letter I used words as regards the French gentlemen named in Mr. Spiers's letter of February 6 which are likely to be misunderstood without explanation. Although the gentlemen named may not all be well known in this country, they are without doubt men of high eminence in their own, three of them being members of the French Institute—a rank equal to our Royal Academician; and three of them are officers of the Legion of Honour. It may be interesting to state that M. Labrousse is the architect of the Library of St. Geneviève and the house of M. Achille Fould in Paris; M. Lebas, of the church of Notre Dame de Lorette; M. Gilbert, of the Préfecture of Police; and M. Questel is architect to the Palace at Versailles. I was misled by the somewhat anomalous fact that to such men as these the even nominal fee of twenty francs was paid by each student, bearing in mind that in our hospitals, &c., the services of the physicians and surgeons are as a rule given gratuitously. Let us hope that ere long men eminent in our own profession will be found willing to render similar service to their younger brethren by lectures and otherwise. Yours, &c.,

ROBERT W. EDIS.

## LEGAL.

### Court of Common Pleas.—Feb. 19.

(Before Mr. Justice KEATING and a Special Jury.)

#### PEARSON v. FLUCKNETT AND OTHERS.

Mr. T. Salter and Mr. Oppenheim were counsel for the plaintiff, and Mr. Bush Cooper and Mr. H. T. Atkinson for the defendants.

This was an action to recover compensation for personal injury caused by the alleged negligence of the defendants' servants.

The defendants are the partners in the firm of Cubitt & Co., builders, who were engaged in rebuilding the premises belonging to the London and North-Western Railway Company at Haydon Square Station, Aldgate. The plaintiff was in the employ of the railway company as a constable and watchman, and it was his duty to close the gates in the evening. On the evening of January 28, 1868, while in the act of closing them, he was struck down to the ground by a heavy plank falling on him, and he received severe spinal injury, and is now incapacitated from work. It appeared that the defendants' workmen had been engaged during the day at that part of the premises, and had placed planks across the tops of the gates after they were opened, and had left off work without removing them. The plaintiff had gone as usual to shut the gates, and he attempted to do so without having seen the planks, and the moving of the gates caused the planks to fall.

At the close of the evidence for the plaintiff it was objected that the action would not lie, as there was no duty in the defendants towards the plaintiff to see that the planks were not in the position in which they were.

After some discussion, the plaintiff was directed to be non-suited.

### Rolls' Court, Chancery Lane.—Feb. 20.

(Before the MASTER of the ROLLS.)

#### MILLWALL CANAL COMPANY v. KELK.

The bill in this case was filed against Messrs. Kelk, the well-known contractors, to hold an account of the contract transactions between the parties. Sir R. Baggallay, Q.C., who appeared for the plaintiffs, stated that certain items of account were disputed upon grounds stated in the bill, but since

the bill was filed a deed of compromise had been executed between the directors of the company on the one hand, and Messrs. Kalk on the other, and the terms of arrangement had been submitted to an extraordinary general meeting of the company, summoned for the purpose, and approved. It was therefore proposed to take a decree in accordance with these terms of arrangement, which, in fact, carried out the provisions of the deed of compromise between the parties. It provided for the payment of a small sum of money and for the delivery of certain preference shares to the defendants in discharge of their demands against the company.

Mr. Wickens appeared for the defendants.

His Lordship approved the course proposed, and the decree was made accordingly.

#### Vice-Chancellors' Court.—Feb. 20.

(Before Sir R. MALINS.)

IN RE THE LONDON PERMANENT BENEFIT BUILDING SOCIETY.

This was a petition by a member of this Society, praying that it might be ordered to be wound up. In 1854 the petitioner gave notice of withdrawal, he being then entitled under the rules to receive 400*l.* It was stated that that notice was very injurious to the Society, and that after struggling with difficulties for three years, in hopes of reviving its prosperity, a resolution was passed, excepting from participation in any loss in the assets all subscriptions paid upon unadvanced shares after a day named in 1857, leaving such losses to fall rateably on the balances due to members on June 30, 1856.

Mr. Cole, Q.C., and Mr. G. Miller were for the petition; Mr. Cotton, Q.C., and Mr. Hemming, for the company, opposed; Mr. Glasse, Q.C., and Mr. Macnaughten appeared for creditors to the amount of 500*l.*

The Vice-Chancellor considered that the resolution was *ultra vires*, but as the petitioner had allowed eleven years to elapse before presenting his petition to set it aside it must be dismissed with costs.

### NEW BUILDINGS AND RESTORATIONS.

**Hargrave Church, Bury St. Edmund's.**—This church has undergone considerable enlargement, in consequence of insufficient accommodation, and has been opened for Divine service. Funds have been raised, and a north aisle added, which accommodates 90 more persons, and is connected to nave by an arcade of three arches, executed in stone, and lighted by 3 two-light windows; the plinth quoins, weatherings, and dressings are all of Ancaster stone, the face work is flints to match the chancel, and the walls are built of Dalham stone. The nave has been partly reset to match this aisle, and the pulpit and desk have been removed from south to north side. The chancel was restored a few years back, with the exception of its seats: these faced the west; they have been swept away, and proper choir seats substituted, with ornamental standards for children's book desk. A rich old screen divides the nave and chancel (no arch), which has been repaired. The chancel also contains the usual piscina and sedilia, &c., restored some few years back. The tower is of brick, and shows signs of settlement and cracks. The work has been satisfactorily carried out by the unmentioned parties:—Stonemason, Mr. Hopson, of Bury St. Edmund's; general builder, Mr. James Drake, Ousden, Newmarket; ornamental iron-work, Mr. Shrivell, of Long Acre; the Architect was Mr. Ralph Chamberlain, London.

**New Chapel of St. Mary Magdalene, Ripon.**—This chapel, which was recently consecrated, has been erected to the memory of the late Rev. Geo. Mason, of Copt Hewick Hall; it will accommodate 150 persons, and seats are provided for 12 inmates of the almshouses adjoining. The style in which the chapel is designed is late Second Pointed, the windows being enriched with geometrical tracery. On the north-west corner of the building is an octagonal stone bell turret. The extreme length of the chapel, inside walls, is 56 feet 6 inches, width 21 feet, and height to ridge 28 feet. There are two beautiful stained glass windows, both to the memory of the late Rev. Geo. Mason: that in the east, representing the six Beatitudes, by O'Conner, of London; and that in the south, representing Faith, Hope, and Charity, by H. M. Barnett, of Newcastle. The work has been carried out by Messrs. John Chambers & Son, of Bishop Monkton; the gas fittings by Messrs. Hardman & Co., of Birmingham; and the warming apparatus by Mr. Nicholson, of Ripon; the whole being executed from the designs of Mr. W. H. Crossland, of Leeds, who is also the architect for the new chapel of St. John, now in course of erection.

A new nunnery is in course of erection near the Kensington Cemetery, at Hanwell, and will shortly be ready for consecration. The whole of the cost, estimated to exceed 2,000*l.*, has been promised to be defrayed by an opulent lady belonging to the Romish communion.

During the past few days the church of St. Gabriel, Bromley, was consecrated by the Bishop of London. The church was built from the design of Mr. R. J. Withers, by Messrs. Dove Brothers, at a cost of 4,700*l.*, of which 2,000*l.* was given by the Bishop of London's Fund, the Church Building Society.

**New Wesleyan Chapel at Bredgar.**—Last week this edifice was opened for Divine worship. Mr. R. Carey, of Coxheath, gave the bricks and the land, the cost of the labour and woodwork being about 1,000*l.* The building was designed by Mr. Carey, jun., of London, and carried out under the direction of Mr. C. Pillow, of Milton. Mr. Beaumont, of Milton, was the builder; the candelabra were supplied by Mr. A. Buley, of Sittingbourne, who likewise did the staining and the glazing. The size of the chapel is 50 feet by 30 feet in the clear, and it will seat 300 persons. The style is Gothic.

**New Mechanics' Institute at Bradford.**—The new building for the purposes of this institute is to be erected at Bowling Green. On Monday last the drawings for the new building were thrown open for public inspection. The style is modern Italian, and has been designed by Messrs. Andrews, Son, & Pepper.

**The New Wesleyan Chapel, Ellesmere Road, Sheffield,** was opened for Divine Service on February 9. The foundation-stone of the chapel was laid by Sir F. Lycett, on October 30, 1857. The building cost 3,500*l.*, and accommodates about 1,000 persons. The style of architecture is Early English, being designed by Messrs. Wilson & Crosland, architects. Its general dimensions are 75 by 43 feet, but it is 59 feet across the transepts. The contractors were Messrs. Hardy and Duke, with Mr. George Longden. Messrs. Marshall, Watson, & Moorwood have done the iron-work, and laid the hot-water apparatus for heating the building.

**Hardingstone Church, Northants,** was reopened on Tuesday week, after having undergone a much-needed restoration at the hands of Mr. Palgrave, architect; previous to which the body of the church was occupied by pews of surpassing ugliness, the main feature of the chancel was the squire's pew with a fireplace in it, there were galleries in the west end and north side, and the tower was blocked out from the nave. All this has been remedied, and a new font and pulpit added, as well as two stained windows, one by Heaton, Butler, & Bayne, the gift of the Rev. R. H. Cox, vicar, and the other, in memory of the late Mr. and Mrs. Bouverie, is the gift of their tenants. The churchyard has also been decorated with shrubs and trees, presented by Mr. Frederick Perkins, nurseryman.

### ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

#### Archæological Discovery at Jerusalem.

The operations of the Palestine Exploration Fund in Jerusalem have led to a promising discovery, reported by Lieutenant Warren, under date of the 1st inst. It is a kind of vaulted crypt, which is situated in a private garden, which forms part of the harem area. It is thus described:—

'The substructure, now used as a tank, is 63 feet from north to south, and 57 feet from east to west, thus being nearly square. Its northern wall is 23 feet 6 inches from the south side of the Birket Israil (traditional Pool of Bethesda). It consists of nine rectangular bays formed by four piers, cruciform on plan, equidistant from each other and from the walls, from which spring arches. The arches between the piers, and between the two northern piers and walls, are stilted or pointed; those from the two southern piers to the walls appear to be flying buttresses, unless the remainder of these arches are concealed behind the east, west, and south walls of the substructure.

'The dimensions of arches and piers all vary somewhat, which may arise from the thick coat of plaster which exists up to the top of the arches—that is, to about 14 feet above the floor of the tank. These arches support nothing; they merely strengthen the piers, and resist any lateral thrust against the side-walls.

'The whole of the substructure is covered in by vaults intersecting in groins over the bays; surface-ribs (of cut stone) are thrown over from the piers to the sides, the remainder of the arches being composed of rag-work. The vaults are pointed; the springing of the vault surface-ribs is 14 feet above the floor of the substructure, and the cement does not reach higher than that point. The vaults, from springing to crown, are also about 14 feet in height, giving a total of 28 feet from the floor to the crown.'

This vault was entered through what is described as a tank-mouth—probably an opening regularly built, though in this and in some other particulars, especially in the uncertainty as to the real nature of the arch conveyed by the gallant Lieutenant's words, 'stilted or pointed,' there is room for greater accuracy as well as fuller detail in the report sent. An opening for an overflow is described as existing in the northern side of about 2 feet in height by 1 foot wide. A staircase, the entrance to which is now closed, and some other openings are described.

There can be little doubt that this forms one of a series of water-tanks.

As a parallel to this structure, Mr. Conybeare pointed out that many subterranean vaulted reservoirs of corresponding design were constructed in Roman times, unquestionably for use as tanks only.

Of these the best known are the Piscena of the Villa Cardito, near Naples, and the Piscena Mirabile, near Baia; in the latter the vault has transverse ribs of cut stone, with the spandrels between filled in with rubble exactly as in the example discovered by Lieutenant Warren—the only difference being that in the latter case the vault is pointed instead of semicircular.

But the most splendid examples extant (out of India) of such subterranean reservoirs are the cistern of Bin-birderell (or of 'the thousand and one columns') and that of the Yèrè-batan-serai (or 'Subterranean Palace'), at Constantinople. Of these the first is now dry, and used as a silk-factory. It occupies an area of 20,000 square feet, and is capable of containing 1,237,000 cubic feet of water, a quantity sufficient to supply the population of Constantinople for 15 days. The Yèrè-batan-serai still remains a cistern of water; its vaulted roof is supported by 336 marble columns, all with exquisitely-sculptured Corinthian capitals, and some of them with sculptured shafts. In both the construction of the roof is the same as in the tank discovered by Lieutenant Warren—viz., a groined vault with rectangular transverse ribs.

#### Explorations at Herculaneum.

The artistic public will learn with great satisfaction that, through the liberality of His Majesty the King of Italy, excavations at Herculaneum are to be recommenced.

There is every reason to believe that at least as rich a collection, and in all probability a richer, of works of art and antiquity lies buried under the lava which overwhelmed Herculaneum, as was dug out from the scoriae and ashes under which Pompeii was covered.

We shall watch with great interest the progress of renewed explorations in this locality, where, as is well known, no researches have been made for a great number of years.

**Associated Arts' Institute.**

The second Soirée of the season was given by this Society, at the Conduit Street Rooms, on Saturday, Feb. 20. Upwards of 400 persons, including many celebrities in art, literature, and science, were present. The gallery of the Society of Female Artists was thrown open for the evening, and formed a great source of attraction, the works exhibited being of a far higher character than those of previous years. There was also a collection of works by members of the Institute, a good display of photographs, reproductions from drawings by old masters (lent by the Autotype Company), and other objects of interest. A concert, under the direction of Madame Leupold, was given during the evening, the performers being Miss Alice Elton, Miss Goodall, Middle, Tourrier, Miss Annie King, Herr Anglyalf, and Mr. Maltby. The whole affair was eminently successful.

**Competition at Rochester.**

The Corporation of Rochester have recently decided to invite six eminent architects to send in designs for the proposed New Corn Exchange, which they intend building at a cost of not more than 5,000*l.* The length is to be about 100 feet, the width varying from 50 to 80 feet.

**Discovery of Ancient Pavements at Palermo.**

The late visit of the Crown Prince of Italy to Palermo was the occasion of an interesting discovery in that city. Amongst other festivities arranged by the local authorities in honour of the illustrious guest was a grand display of fireworks on the 'Piazza Reale.' Certain scaffolding had to be erected to carry a large pyrotechnical design, and in digging the necessary holes in the ground a piece of mosaic was found at a depth of only 3 feet from the level of the Piazza. Since then this discovery has been carefully followed up, and has resulted in the laying bare the floors of four mosaic pavements which had once belonged to as many distinct apartments. The first of these represents Orpheus sitting under a tree surrounded by animals attracted by his music: he wears the Phrygian cap, and strikes the lute with a short stick. This picture is surrounded by a coloured border, and near it is the second pavement, which consists only of a plain black and white pattern; but the fact that the surrounding walls were found more than 2 feet high makes this compartment peculiarly interesting. The walls are covered with frescoes not unlike those found at Pompeii in the brilliancy of the red. The third compartment is divided from the first by two Corinthian columns with Ionic bases and sharply cut capitals; and although the floor never appears to have had any provision for draining off the wet, it seems to have been that of an open court: the pattern is in black and white. But the finest mosaic found was the fourth, which is composed of medallions and rich borders, the subjects being mythological, such as Leda and the Swan, the head of a Neptune, &c. The date of these mosaics is believed to be that of the first century A.D. Some years ago mosaic fragments, evidently of the same period, were discovered in another part of Palermo, namely, near the Quattri Cantoni; and as the site of the recent discovery is about 1,000 yards distance from that of the earlier one, and, moreover, farthest removed from the sea, some idea may be formed as to the probable extent of this colony of ancient Rome.

**The Darien Canal.**

American papers are once more discussing this scheme, and it seems that the project of cutting a canal which shall unite the Atlantic and Pacific is one likely to be executed at no very great distance of time. The distances saved will be enormous: thus the journey by sea from New York to San Francisco will be shortened by 14,000 miles, to Callao by 10,000, to Melbourne by 3,000, to Canton by 9,000, and to Calcutta by 4,000 miles. The surveys made by order of Congress show that the best route will be via San Blas, where the entire distance between the two oceans is only thirty miles, of which two-thirds only would require the cutting of a canal, as for the remaining ten miles a river, running in a south-westerly direction, may be made available for the passage of large ships. The capital necessary for this undertaking is estimated at 65 million dollars, and a company, incorporated by New York State, has been formed for the purpose.

**Is it True?**

The *Missouri Republican* recently stated that 'the engineers engaged in making the piers of a railway bridge at St. Louis, to cross the Mississippi, are said to have found an ancient tunnel below that mighty river. The tunnel passes under the river to the Illinois shore, and whether it is wholly the work of some ancient race who once inhabited this land, whose interesting remains are strewn so thickly up and down this great valley, or whether it is partly natural and partly artificial, remains to be seen. The main passage is about twenty feet high by fifteen broad, and systematically arched overhead; part of the way by cutting through solid rock and part by substantial masonry. The bottom seemed to be much worn, as if by carriage wheels of some sort. There are many lateral passages which are about eight feet high and six feet wide. Around the walls of the main passage there were what seemed to be niches closed with closely-fitting slabs, each slab covered with inscriptions in Runic uniform characters which bore a marvellous resemblance to those upon the slab in the Mercantile Library, which was brought from the mines of Nineveh. Between the niches were projecting pilasters, with draped Assyrian or Egyptian heads. If the facts are truly stated, an ancient city must have stood on the Mississippi, near to St. Louis, though probably on the opposite bank. If so, the cases of Memphis and Cairo will have found a parallel in the New World.'

**Notes for Connoisseurs.**

An important collection, the property of the late M. Gueneau d'Aumont, was sold at Dijon on February 22 and following days; it included 1,500 groups, statuettes, cups, diptyques and triptyques, bas reliefs, caskets, and other works of art in ivory, besides wood carvings, bronzes, &c., 1,200 being in gold, silver, *pietra dura*, enamels, &c. This is one of the largest collections of the kind that has been offered for sale for a long time.

All the connoisseurs of Paris were collected in one of the rooms of the auction mart, in the Rue Drouot, the other day, on the occasion of the sale of a

small wooden casket which might have been seen in the Retrospective Gallery on the French side of the Exhibition of 1867. The wood of which this curiosity is composed is conjectured to be oak or walnut, but time has effaced the characteristics; the box or casket is rectangular, with a flat cover ornamented with medallions cut in the wood, and surrounded by figures of animals, real and chimerical, with German inscriptions. It is mounted in chased iron, in the style of the fourteenth century. This box, which five centuries ago cost, perhaps, five shillings, was sold for two thousand francs to M. Leroy-Ladurie.

The estimation in which the works of Eugène Delacroix are held was again evinced at the sale of the pictures, sketches, &c., of the late painter, M. A. Dauzats. Delacroix's original sketch, the first idea of the Entrance of the Crusaders into Jerusalem (the picture at Versailles), was sold for the relatively enormous sum of 7,100 francs (284*l.*).

An event of mournful interest, and not of uncommon recurrence, took place at the sale rooms recently; namely, the disposal of a number of modern works given by the artists in aid of a brother in distress. Amongst the pictures sold were, one by Ed. Frère, 'Les Sabotiers,' which fetched 42*l.*; a drawing by Gérôme, 10*l.*; and the 'Trumpeter of the Cuirassiers,' by Schreyer, 34*l.* Twenty-two artists subscribed to this Samaritan sale, and the result was a total of more than four hundred pounds.

Tapestry, artistic furniture, and objects of art are in high request just now. At the sale of the effects of the late M. de L—, of Madrid, which occurred a few days since, there appeared a very remarkable *surtout de table*, *épergne* and other pieces, thirty in all, executed in gilt bronze by Raurio, from designs by Clodion, Prudhon, and other celebrated artists; after a very spirited bidding, it was knocked down at 4,280 francs (over 171*l.*). At the same sale five pieces of tapestry of the sixteenth century, representing episodes in the conquest of Granada by Ferdinand of Castille, fetched 132*l.* At another sale three pieces of Gobelins tapestry, with three panels of the same manufacture, figuring scenes of the Odyssey, sold for 456*l.*

**Competitions Open.**

ROUEN.—Artists and architects are invited to send in designs for a funereal monument, to be erected in memory of the late Maire of Rouen, M. Verdrel. The total cost of the work, including the honorarium of the architect (fixed at 5 per cent.), is not to exceed 1,200*l.* The plans, drawings, and estimates are to be deposited at the office of the secretary-general, at the Maire of the town, on or before May 15. All the designs are to be exhibited, from May 20 to June 6, in one of the rooms of the Hôtel de Ville of Rouen. The jury is to be composed of members of the municipal council, with a certain number of architects and other artists, and the decision is to be announced before July 1. The author of the selected design, if approved by competent authorities, will be entrusted with the construction of the monument, under the surveillance of the municipal authorities. In addition to the honorarium a gold medal will be awarded to the successful candidate, the second in rank to receive 20*l.*, and the third half that sum.

The details and plan of the competition may be seen at the office of THE ARCHITECT, or are to be obtained at Rouen, or of the Editor of the *Moniteur des Arts*, 43 Rue Saint Georges, Paris.

A note attached to the programme of this *concours*, 'inserted to aid foreign competitors to draw up their estimates,' has a general interest. Prices of work per cubic metre:—

	Francs.	£	s.	d.	
Excavation	2.50	=	0	3	0
Concrete, quick lime, and sand	20.00	=	0	16	0
Brickwork of the best kind, including centerings and pointing	45.00	=	1	16	0
Antigny stone work, finished	200.00	=	8	0	0
White echaillon	300.00	=	12	0	0
Lials for steps and pavement, including cutting and laying	250.00	=	10	0	0
Sainte Honorine granite do.	250.00	=	10	0	0

PARIS, for Chili.—A competition is now open in Paris for designs for an equestrian statue of the ancient President of the Republic of Chili, General Bernardo O'Higgins, who was the head of the state from 1817 to 1823, and whose memory is held in high estimation. The statue is to be in bronze, and to represent the General quitting Rancagua, where he was besieged by the Spaniards, who were four times more numerous than his own forces, and forcing his way at the head of the few brave followers who had survived a carnage of thirty-six hours' duration. The statue and pedestal are to be of about the same dimensions as the famous statue of Henry IV. on the Pont Neuf, Paris. On the pedestal are to be four bas-reliefs representing:—1. Deposition of the Supreme Director O'Higgins in 1823; 2. The fight at Roble, where the General was wounded; 3. The Chilean squadron leaving Valparaiso to intercept a convoy under the protection of the Spanish ship *Maria Isabel*; 4. Meeting of the patriot Generals, O'Higgins and Saint Martin, on the battle-field of Maipo, on April 5, 1818.

None but known artists are admitted to the competition, and their designs are to be sent in to the Chilean consul in Paris, before March 15. The designs are to be accompanied by a statement of the price at which full-sized models of the statue and bas-reliefs would be rendered in plaster. The designs will be judged by an official committee of sculptors, architects, painters, and competent critics. A curious condition is annexed to the proposal; namely, that the successful sculptor shall employ, as an auxiliary in carrying out the work, a young Chilean sculptor, a pupil of the eminent French sculptor Juffroy, whose talent the commission desires to encourage, while at the same time giving somewhat of a national character to the work.

The maximum cost of the monument, carriage and all other expenses included, is fixed at 3,000*l.* (75,000 frs.), and the work is to be completed by January 1, 1871.

Applications for conditions, &c., to be made to M. Fernandez Rodella, Consul-General for Chili, 26, Rue de Laval, Paris.

**Suez Canal.**

The chief directors of the Suez Canal works met, towards the close of last year, in committee in Paris, with a number of experienced maritime men, mining and other engineers, and naval constructors, to consider the methods of working the great ship canal when completed. The problem to be solved was, the mode of rendering the transit as rapid as possible, with due regard



to the maintenance of the banks of the canal on one hand, and to economy and, consequently, the interests of the shareholders, on the other. It is necessary, of course, to fix the maximum rate for vessels passing through the canal, to settle the methods of towing, to study the effects of the tide in the Red Sea on the navigation, to arrange for the lighting and maintenance of the canal, and to settle the mode of calculating the tonnage of vessels. The officers of the company are now studying on the spot the various questions raised by the above-named committee.

The following are a few of the conclusions and opinions now current. It seems to be admitted that steam vessels will be able to traverse the canal at the rate of 10 kilomètres or 6½ miles per hour. Sailing vessels of more than 50 tons burden may be towed at the rate of 6 to 7 kilomètres per hour; while smaller vessels will not require towing, the width of the canal being sufficient, it is believed, to allow them to navigate without obstructing the course of the larger ships. In order to prevent collision and difficulty in the navigation, small basins will be formed at distances of 10 or 12 kilomètres all along the line. All large vessels will be required to carry a pilot thoroughly acquainted with the conditions of the navigation, and with the day and night signals.

The method of lighting the canal and the lakes, and that of towing, are now under consideration.

The mode of calculating tonnage, for the transit-charge of 10 francs per ton, gives rise to some difficulty on account of the system of measurement adopted in various countries. The same vessel will measure 300 tons in France, 250 in England, and 150 in the United States; so that some general rule must be adopted, and this will be a benefit to commerce generally.

One of the effects of the opening of the canal will be, it is presumed, the hastening of the application of steam to commercial shipping. Steamers can make the transit in sixteen hours, while sailing vessels require twenty-three to twenty-seven; and the Red Sea is notoriously more easy of navigation for the former than the latter.

Such are the general statements and expectations put forth with regard to this gigantic work. Should the hopes of the projectors be fulfilled to their utmost extent, we shall have abundant reason to congratulate them as well as ourselves.

## General.

The Royal Academy have lately introduced certain modifications into their system of inspection by Visitors, these being now chosen from among the Associates; and Messrs. Wells and Armitage have already filled the post. There can be no doubt that this change will work well; for, being younger men, they retain more the impressions of the difficulties with which they had to contend when students, and will try, therefore, to smooth away those difficulties from the paths of others. Mr. Armitage, who, we believe, studied in the French 'ateliers,' and is therefore well acquainted with the French system of instruction, is admirably fitted for the post, as he will be able to impart the principles of the foreign system of drawing, and to give fresh vigour and life to the drawings of the Academy students, which much require it. There is also another feature which Mr. Armitage is trying to introduce, viz., the production of sketches for fixed subjects at certain intervals; these sketches being made at home, and then brought to the Academy and publicly criticised by the Visitor; composition and design being chiefly aimed at, and execution and finish altogether disregarded. There is no doubt that this system ought to have been introduced long ago at the Academy, and the want of it has long been felt; but there are still found, unfortunately, a large number of persons who believe that the principles of composition and design, whether in painting or architecture, are only instinctive, and cannot be taught systematically, notwithstanding the abundant evidence to the contrary, as is exhibited in the results of the teaching of the French and Belgian schools.

The magnificent studies in landscape which adorn Mr. Leighton's studio, and which were made during his travels in the East, Greece, Spain, and the islands of the Mediterranean, are intended, it is stated, to be bequeathed to the Royal Academy, for the use of the students.

**Bolton Exhibition.**—Up to the present time about 70,000 persons have visited the Fine Arts' Exhibition at Bolton, which was opened a few weeks ago in aid of the funds for the handsome building recently erected as a Mechanics' Institution.

**Historical Figures in Canterbury Cathedral.**—The south-west porch and the whole of the west end of the Cathedral are now filled with niches for statues; and within the last month those of Queen Victoria and the late Prince Consort have been erected. A movement was set on foot by the Dean in 1862 to fill the niches with historical figures connected with the Cathedral, and thirty-six are now in their places, including Gregory the Great, Archbishops Theodore, Dunstan, Alpheg, Becket, Baldwin, Hubert-Walter, Langton, Courtenay, Sancerroft, and Land; Kings Alfred, Edmund, Canute, Edward the Confessor, William the Conqueror, William II., Henry I., Henry II., Edward III., Henry VIII., Edward VI., Charles I.; the Black Prince, Bishop Ridley, and Dean Stanhope. The work was undertaken by Mr. Pfyffers, the sculptor, at a cost of 24*l.* each. The southern face of the porch has been reserved for the four archbishops who have had most influence on the Church, viz., Augustine, Lanfranc, Anselm, and Cranmer. These have been placed above, and King Ethelbert and Queen Bertha below.

A very interesting collection of water-colour drawings, the property of Her Majesty, illustrative of the Highlands and Highlanders of Scotland, past and present, is being exhibited, by the Queen's permission, at Messrs. Mitchell's Royal Library, Bond Street.

The Print Room of the British Museum has been enriched by the acquisition of Mr. Pye's collection of the Liber Studiorum prints and proofs,

which has been acquired for a sum which, looking at the enormous prices sometimes paid for fine copies of this remarkable work, may be held to be almost nominal.

A new method of transport for conveying granite from the quarry to the railway has been worked out by Mr. Hodgson, C.E., for Messrs. Ellis & Everard, who have to transport their stone a distance of three miles. The principal agent is an endless wire rope, supported on pulleys, which are carried at a considerable height from the ground on stout posts, the entire arrangement having much the appearance of an ordinary telegraph line. A portable steam-engine drives the rope at about five miles an hour, and it carries with it a continual stream of boxes, each holding 1 cwt. of stone. The rope being endless, the full boxes travel at one side of the supports and the empties return at the other, and the pendants by which the boxes are hung are specially formed to allow of their passing the points of support, which they do with perfect ease. This line crosses the country boldly as an ordinary telegraph would, and from its cheapness, the rapidity with which it can be constructed, and the ease with which it can be moved, it seems probable the method will be found of considerable use for similar purposes elsewhere.

Messrs. Watts, Hart, and Leighton form the 'hanging committee' of the Royal Academy Exhibition this year.

Mr. Layard, Chief Commissioner of Works, has sanctioned the carrying an iron railing 7 feet high round the Regent's Park in lieu of the present dwarf fence. The rails will be of the ordinary ugly common spike shape.

The whole of the staff and employees of the Board of Trade have removed from their former locale in Whitehall to Pembroke House, a block of buildings in Whitehall Gardens recently occupied in the Foreign Office.

**Building Trade Technical Schools at Bradford.**—The committee of management of this undertaking for the dissemination of technical education in the building trades have now entered upon the new premises in Godwin Street. The new building is four storeys high, has been engaged at a cost of upwards of 80*l.* a year, and a considerable sum has been expended in fittings. It is intended to form a library of practical and useful works relating to the science and art of the building trade for the use of members; 3*s.* paid in advance secure all the advantages the school may offer.

The Report of the British Land Company (Limited) states that the sales of land for the year have amounted to 211,837*l.*, being about 6,000*l.* more than during the previous year, and that after paying the interim dividend of 5 per cent., amounting to 7,500*l.*, the balance-sheet shows a profit of 30,552*l.*, out of which a further dividend of 5 per cent. is recommended and a bonus of 10 per cent., making 20 per cent. for the year, and leaving 8,052*l.* to be carried forward. The directors propose to ask authority at the ensuing annual meeting to issue new shares to an amount equal to the present capital. Estates have been purchased at Acton-green, Balham, Kilburn, Kingston, Leyton (two), Page-green, Tooting, Wimbledon, and Woodford; and the whole of those at Tottenham Station and Walthamstow (No. 8), and at Baldock, Barnet-town, Brentwood, Bristol, Chiswick, Hornsey (Nos. 1 and 3), Rochester (No. 2), and Woodford (D), have been sold.

## QUESTIONS.

To the EDITOR OF THE ARCHITECT.

SIR,—As the replies may be of use to many others besides myself, I hope you will kindly find room for the following queries:—

1. Can rain-water that has passed through a slab of Ransome's filtering stone be kept in an underground (covered) tank without becoming unfit for use?
2. Information is requested as to the best mode of forming such tanks.
3. What quantity per head per diem is sufficient for ordinary domestic supply in the country?—A town average is evidently in excess, as it includes that used for manufactures, watering streets, &c.
4. Will filtered rain-water act on the zinc of a galvanised iron cistern?—It corrodes lead.
5. Is it a fact, as often stated, that water contained in gutta-percha pipes will not freeze?

Yours truly,

L. C. E.

DEAR SIR,—Will you kindly inform me, through the medium of your Journal, whether, a contractor having agreed to execute certain works according to plans and specifications, to draw 75 per cent. as the work proceeds, would a sub-contractor, who agreed to do a portion of the work according to the same plans and specifications, be bound to the pecuniary terms, or be entitled to receive the whole of his balance on the completion of the sub-contract?

Yours faithfully,

JOHN CHAPMAN, JUN.

## MEETINGS OF LEARNED SOCIETIES.

ROYAL INSTITUTE BRITISH ARCHITECTS.—Monday, March 1, at 8 P.M. 1. 'Memoir of the late Joseph Bonomi, A.R.A.' by Wyatt Papworth. 2. Some Remarks on the Chevalier Da Silva's work, 'Signes qu'on voit gravés sur les Anciens Monuments du Portugal,' by Mr. George Godwin, F.R.S.

INSTITUTION OF CIVIL ENGINEERS.—Tuesday, March 2, at 8 P.M. 1. 'On Sinking Wells for the Foundations of the Piers of the Jumna Bridge, Delhi Railway,' by Mr. Imrie Bell. 2. 'Description of Apparatus for Excavating the Interior of, and for Sinking, Iron Cylinders,' by Mr. John Milroy.

ARCHITECTURAL ASSOCIATION.—Friday, March 5, at 7.30 P.M. 'On Relief Sculpture versus Fresco Painting,' by P. A. Nairne, F.R.G.S.

SOCIETY OF ENGINEERS.—Monday, March 1, at 7.30 P.M. A paper will be read on 'Electric Telegraphy,' by Mr. E. G. Bartholomew.

ROYAL SOCIETY.—Thursday, March 4, at 8.30 P.M.

ROYAL INSTITUTION.—Monday, March 1, at 2 P.M. General Monthly Meeting. Tuesday, March 2, at 3 P.M. Rev. F. W. Farrar 'On Comparative Philology.' Thursday, March 4, at 3 P.M. Dr. Harley 'On Respiration.' Friday, March 5, at 8 P.M. Mr. W. Huggins 'On some further Results of Spectrum Analysis applied to the Heavenly Bodies.' Saturday, March 6, at 8 P.M. Prof. Odling 'On Hydrogen.'

SOCIETY OF ARTS.—Wednesday, March 3, at 8 P.M. 'On the Adaptation and Extension of Present Means for the Promotion of Scientific Instruction,' by H. H. Sales, Esq. On this evening Lord Frederick Cavendish, M.P., will preside.

EDITORIAL NOTICES.

No communication can be inserted unless authenticated by the name and address of the writer, —not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

Our readers are invited to address us on subjects of interest to themselves or the public. We shall be always ready to insert letters asking for a solution of any suitable questions of a professional or practical nature, and to receive replies to such enquiries.

PUBLISHERS' ANNOUNCEMENT.

Advertisements cannot be received for insertion later than 2 P.M. on Thursdays.

Temporary Office, 4 Monument Yard, London.—GILBERT WOOD, Publisher.

THE GAZETTE.

PARTNERSHIPS DISSOLVED.

Yates & Thomas, Wath-upon-Dearne, Yorkshire, bricklayers; Marshall & Hall, Derby, metal manufacturers; Ide & Flin, High Street, Shadwell, brass-fitters; Gillett & Wisbey, Wormwood Street, and Little Pearl Street, Spitalfields, carpenters; J. Jones & Sons, Garston, builders, as far as regards J. Jones; Coates & Down, South Stockton, brick manufacturers; and Newton & Braddock, Oldham, gas-meter manufacturers, as far as regards G. Newton.

DECLARATIONS OF DIVIDENDS.

Scott, T., Deptford Bridge Iron Works, and Blackheath Road, engineer, &c.,—first div. of 7s. 2d., Wednesday next, and three subsequent Wednesdays, at Mr. Edwards's, Basinghall Street; Winch, W., Daniel Street, Bethnal Green Road, timber merchant—second div. of 2s. 6d., and 7s. 6d. to new proofs, Wednesday next, and three subsequent Wednesdays, at Mr. Edwards's, Basinghall Street; Jones, R., Carnarvon, land agent—second div. of 1s. 10d., any Wednesday, at Mr. Turner's, Liverpool; Mowbray, F. W., Leicester, engineer—third div. of 2s. 4d., any Monday, at Mr. Harris's, Nottingham.

BANKRUPTS.

Halsey, Thomas, Goswell Street, Goswell Road, and King's Square, engineer, March 8, at 11; Higgins, W., Bridge Road, West Battersea, contractor, March 4, at 2; Tyerman, F., late of Gracechurch Street, and Church Street, Chelsea, architect, March 12, at 12; Weller, W., Foskett Mews, Harrow Road, sub-contractor, March 8, at 12; Westcott, Robert, Sutton, builder, March 8, at 12; Dann, James Wallis & James, Cromer Street, and Thanet Street, builders, March 10, at 12; Dowsett, Robert, Good Easter, Essex, builder, March 11, at 2; Furness, T. & H., Warwick Road, Brompton, builder, March 8, at 12; Martin, James Charles, Gray's Inn Road, revolving shutter manufacturer, March 10, at 2; Mills, William, jun., King Street, Clerkenwell, lathe-maker, March 8, at 11.

To Surrender in the Country.

Creswell, H., Great Marlow, timber dealer, March 2, High Wycombe; Giles, James, Hound, Southampton, builder, March 3, Southampton; Harbert, W. C., Great Yarmouth, builder, March 4, Great Yarmouth; M'Laren, John, Shotton, brick manufacturers, March 4, Newcastle-upon-Tyne; Tomlin, H., Chorlton-upon-Medlock, engineer, March 2, Manchester; Bainbridge, Charles, Biggins, Joseph, & Thwaites, Watson, Redcar, builders, March 8, Leeds; Creswell, H., Great Marlow, timber dealer, March 2, High Wycombe; Dunn, Henry, Whiteley, builder, March 11, Newcastle-upon-Tyne; Hitchen, John, Cookey, engineer, March 6, Kidderminster; Mason, Joseph, Hereford, builder, March 5, Birmingham.

TENDERS.

LONDON.—For Rebuilding at the Buck's Head, James Street, Bethnal Green Road. Messrs. Reeves & Butcher, Architects:—

Nixon & Son	£1,696 0 0
Turner & Son	1,582 0 0
Kilbey	1,569 0 0
Macey	1,514 0 0
Cook	1,254 0 0
Higgs (accepted)	1,247 0 0

LONDON.—For the Erection of Three Houses and Shops, Walworth Road, for Mr. F. Mason. Mr. F. Codd, Architect:—

Edwards	£3,777 0 0
Croker	3,578 0 0
Kirk	3,294 0 0
Cook & Son	3,149 0 0
Marland	3,117 0 0
Bagguley	3,100 0 0
Newman & Mann	3,076 0 0
Hart	3,066 0 0
Whitick	3,000 0 0
Colls & Sons	2,988 0 0
Cooper & Cullum	2,950 0 0
Hyatt	2,750 0 0
Gibbs & Son	2,642 0 0

FINCHLEY.—For additions to the Railway Hotel, for Mr. Mackness. Mr. W. E. Williams, Architect:—

Eaton & Chapman	£968 0 0
Marr	941 0 0
Anley	845 0 0

CHELSEA.—For completing a House in the Cremorne Road, at the corner of Seaton Street. Mr. E. O. Symons, Surveyor:—

Stoner	£785 0 0
Shillito	776 0 0
Godbot & Lawton	590 0 0
Long	542 0 0
Bigg (accepted)	500 0 0

HACKNEY.—For Alterations and Additions to the Hackney Union Workhouse, at Homerton. William Lee, Esq., Architect. Quantities by Messrs. Linsdell & Giffard:—

Cheeseman	£11,150 0 0
Lewis	11,133 0 0
Condor	10,887 0 0
Higgs	10,629 0 0
Ashby & Son	10,450 0 0
Perry & Co.	10,443 0 0
Browne & Robinson	10,330 0 0
Hill, Keddell & Waldram	9,989 0 0
Sawyer	9,953 0 0
Henshaw	9,672 0 0
Webb & Son	9,366 0 0

HIGHGATE.—For Alterations and Additions to Whittlebury House, Highgate, for C. H. Frewen, Esq. W. G. Habersham & Pite, Architects:—

Hemmings	£1,600 0 0
Bays	1,550 0 0
Flincher & Martin	1,450 0 0
Salter	1,450 0 0
Carter	1,450 0 0
Crockett	1,400 0 0
Davies	1,400 0 0
Jackson	1,359 0 0
Blackmore & Morley	1,365 0 0
Kendall	1,260 0 0
Brown & Sons	1,249 0 0
Bennett	1,210 0 0
Pethick	1,170 0 0
Turner	1,170 0 0
Baker & Constable	1,075 0 0
Cubitt & Sons (too late)	1,040 0 0

MALMESBURY (Wilts).—For Additions to Dwelling-house for Mr. W. Forrester. Mr. T. S. Lansdown, Architect:—

Weeks & Bowman	£460 0 0
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MALMESBURY (Wilts).—For new Stables for Mr. W. Forrester. Mr. T. S. Lansdown, Architect:—

Weeks & Bowman	£221 0 0
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BIRMINGHAM WORKHOUSE SCHOOLS.—The following tenders were received for the erection of School Buildings at the Workhouse:—

Hardwicke & Son	£8,995 0 0
Moffatt	8,969 0 0
W. & J. Webb	8,900 0 0
Barnley & Sons	8,868 0 0
Jones	8,800 0 0
Surman	8,769 0 0
Creswell & Sons	8,739 0 0
Palmer & Son	8,638 0 0
Briggs & Son	8,485 0 0
Horsley Brothers	8,475 0 0
Trow & Sons	8,342 0 0
Jeffery & Pritchard	8,050 0 0

SUTTON.—For Two Houses for Mr. John Ruck. Mr. Edwin Nash, Architect:—

Deards	£1,974 0 0
Cooper & Cullum	1,966 0 0
Cuff	1,950 0 0

WATFORD (Herts).—For the Erection of a Shop for Mr. Catherall, of Berkhamstead. Mr. Frank E. Thicke, Architect:—

Chalk	£570 0 0
Waterman	560 0 0
Wilkins	554 0 0
Snell	530 4 8
Halley	517 12 0

APPOINTMENTS VACANT.

INDIA.—July.—Forty Appointments in Engineer Establishment of Public Works Department in India. Mr. W. T. Thornton, Secretary, Public Works Department, India Office.

CAMBRIDGE.—March 1.—Surveyor. Salary, 150l. per annum. Duties to commence on Lady-day next. Mr. Frederick Barlow, 60 St. Andrew's Street, Cambridge.

ST. MARY'S, ISLINGTON.—March 1.—For the appointment of Sanitary Inspector. Mr. John Layton, Vestry Offices, Upper Street, Islington.

METROPOLITAN BOARD OF WORKS.—March 3.—For appointment of Gas Examiner. Salary, 100l. a year. Clerk to the Board, Office, Spring Gardens.

ROMFORD.—March 4.—For the appointment of Surveyor of the Highways. Salary, 150l. per annum. Mr. North Surridge, Clerk to the Board, Romford.

COMPETITIONS OPEN.

ROYAL ACADEMY OF ARTS.—National Gallery. For the best painting in Oil—or Model and Design in Painting, Sculpture, and Architecture. The Gold Medal and the Discourses of Presidents Reynolds, West, &c.; and for the best Copies of Drawings, Models of Life, the Antique in Landscape Perspective, &c. The Silver Medals, &c. November 1.

ROTHERHAM.—March 15.—For Plans, &c., for erecting a Public Hospital and Dispensary. A prize of 75l. is offered for the best design, 50l. for the second, and 25l. for the third. John Barra, hon. secretary, Rotherham.

KINGSTON-ON-THAMES.—March 1.—Design for new School and Master's Residence. Cost not to exceed 5,000l. F. Gould, Esq., Kingston-on-Thames.

BRECON.—March 1.—Plans and Estimate for Alterations of County Gaol. A premium of 30l. is offered for best plan. Edward Williams, Clerk of Peace, Brecon.

CORPORATION OF MANCHESTER.—ALEXANDRA PARK.—March 8.—The Corporation invite landscape gardeners, surveyors, and others to send in designs in competition for laying out the Alexandra Park. Joseph Heron, town clerk, Town Hall, Manchester.

BOGNOR.—March 12.—Designs for Sea Defence Work. A premium of 50l. will be given for the plan approved of by the Board. Mr. Frederick Elkins, Clerk to Local Board, Bognor, Sussex.

CONTRACTS OPEN.

LONDON.—March 5.—The Commissioners of Her Majesty's Works and Public Buildings are prepared to receive Tenders for the ordinary Works and Repairs to Public Buildings, &c., in the London District. George Russell, Secretary, Whitehall.

INDIA OFFICE.—March 1.—For Proposals to supply Marmoules and Picks. Director-General of Stores, India Office, Westminster, S.W.

FINSBURY SCHOOL DISTRICT.—March 1.—For the Erection of Proposed Buildings, at Upton, West Ham, Essex. Architect, Mr. Frederick Peck, 15 Fumival's Inn, E.C. C. S. Waldron, Clerk to the Managers.

SHOREDITCH.—March 1.—For Watering Roads in parish of St. Leonard. Mr. W. G. Davis, Vestry Clerk, Town Hall, Old Street Road.

SHOREDITCH, March 9.—For Masons' and Paviers' Work, &c. Mr. W. G. Davis, Town Hall, Old Street Road.

UPPER HOLLOWAY.—March 6.—For Execution of Drainage Works and Road-making. Mr. James Wylson, 33 Norfolk Street, Strand.

HOLBORN DISTRICT.—March 1.—For Cleansing Streets and Removing Dust, &c.; also for Watering the Streets. Mr. Lewis H. Isaacs, C.E., Office of the Board, Little Gray's Inn Lane.

HAMMERSMITH.—March 3.—For Formation of Roadways, Pathways, Surface Drainage, Levelling, and Laying-out of Burial Grounds in Fulham Fields. Mr. George Saunders, 111 King Street, West Hammersmith.

HAMMERSMITH.—March 8.—For the various Works connected with the Formation of the Roadways, Pathways, Surface Drainings, Levelling, and laying out of their Burial Ground, situate in Fulham Fields. Alfred J. Roberts, Clerk to the Burial Board.

ST. MARYLEBONE.—March 11.—For Supply of Materials to Repair Roads; for Supply of Stoneware Sewage Pipes, Bends, Junctions, &c.; for Bricklayer's Work, &c. &c. &c., all for one year, from March 25. Mr. T. Gaul Browning, Surveyor, Court-house, St. Marylebone.

LAMBETH.—March 5.—For Supply of Men, Horses, and Carts for Watering and Carting; also for Slopping and Cleansing Work; also for supply of Granite and Execution of Mason's and Pavior's Work. Mr. Thos. Roffey, Vestry Hall, Kennington Green.

LAMBETH.—March 5.—For the Execution of Masons' and Paviers' Work to be done during the ensuing year, commencing March 25, 1869, and ending March 25, 1870. Thomas Roffey, Clerk to the Vestry, Vestry Hall, Kennington Green.

LAMBETH.—March 5.—For the Supply of Guernsey Flints, Fine and Rough Gravel, Paving Materials, &c., during the ensuing year, commencing March 25, 1869, and ending March 25, 1870. Thomas Roffey, Clerk to the Vestry, Vestry Hall, Kennington Green.

POPULAR DISTRICT.—March 5.—Board of Works. For the following Works for one year, ending Lady Day, 1870, viz:—

For Mason's Work, Materials and Labour inclusive. For the Supply of Port Phillip and Bombay Stone, Gravel and Flints, and Broken Guernsey Granite. For the Execution of Repairs to Sewers, Gullies, &c., and General Jobbing Works. S. Jeffries Barth, Clerk to the Board, 291 East India Dock Road.

POPULAR.—March 5.—For Mason's Works, &c. S. Jeffries Barth, 291 East India Dock Road.

MILE END ROAD.—March 3.—For Making-up Carriage Roads, and Kerbing and Paving Footpaths. Mr. J. Knight, Vestry Hall, Bancroft Road, Mile End Road.

BROMLEY.—February 28.—For supply of Stoneware Drainage Pipes. Mr. Arthur Jacob, Bromley, Kent.

HACKNEY.—March 11.—For Supply and Execution of Mason's Work, Gas Fittings, Ballast, &c. &c. Mr. James Lovegrove, C.E., Town Hall, Hackney.

PENTONVILLE AND OTHER PRISONS.—March 13.—For Supply of Building Materials. The Directors of Convict Prisons, 45 Parliament Street, S.W.

ST. MARY, ISLINGTON.—March 5.—For Day and Jobbing Works in connection with Sewers and Drains. Mr. Higgins, Vestry Offices, Upper Street, Islington.

SAINT MARY, ISLINGTON.—March 5.—For Stone Paving such parts of the Footpaths and Carriageways of the Parish, and Repairing and Keeping in Repair the Paved Footpaths and Carriageways. John Layton, Clerk, Vestry Hall, Islington.

WESTMINSTER (St. James's).—March 4.—For the performance of the Paviers' and Masons' Work required within the said parish, and for Supplying Broken and Unbroken Granite and other Stone, for a term commencing from March 25, 1869, for three years. George Buzzard, Vestry Clerk.

WESTMINSTER.—For the Erection of a House on the site of the Chapel, Duke Street, Westminster, immediately contiguous to St. James's Park. Charles E. Davis, F.S.A., 3 Westminster Chambers, Victoria Street, London, or 55 Great Pulteney Street, Bath.

WESTMINSTER (DUKE STREET).—For Erection of a House. Mr. Charles E. Davis, F.S.A., 3 West Chambers, Victoria Street.

WESTMINSTER (Parish of St. James's).—March 4.—For Supply of Carts, Horses, and Men for Watering Streets. Also for Pavior's and Mason's Works. Vestry Hall, Piccadilly.

FULHAM.—March 3.—For the Construction of 400 feet run of Sewer in St. Peter's Square, Hammersmith. The Chairman, Broadway House, Fulham.

PADDINGTON.—March 1.—For Execution of Day and Jobbing Works in Constructing and Altering Sewers. Surveyor's Office, Vestry Hall, Harrow Road.

CAMBERWELL.—March 2.—Vestry of St. Giles.—For the Execution of Sewers Works, comprising 1,380 feet 18 inches pipe sewer, 700 feet 15 inches pipe sewer, and 230 feet 12 inches pipe sewer, to be laid in the Crystal Palace Road, Goose Green, Peckham Rye. George William Marsden, Vestry Clerk, Vestry Hall.

SAINT GILES, CAMBERWELL, March 2.—For Execution of Sewers Works in the Crystal Palace Road, Peckham Rye. Mr. Geo. Wm. Marsden, Vestry Hall, Chamberwell.

BAMPTON (Oxon).—March 2.—For the Warming of the Parish Church. Rev. D. Adams, Bampton, Faringdon.

# The Architect.

## THE ARTIST, THE MANUFACTURER, AND THE TRADESMAN.



WE all know what it is for two or three persons, after accidentally meeting as perfect strangers and conversing casually and indifferently for a time, to hit upon the name of some mutual friend, or to find themselves to be natives of the same town, or all immersed in the same pursuit. In a moment they are on common ground, they begin to understand one another, their distrust vanishes, and the conversation becomes free and friendly. We think the artist, the manufacturer, and the tradesman, if they could only perceive how much common ground they occupy in all that relates to buildings, would often become better friends, to the very great advantage both of themselves and the public.

Strangers such as those whose case we started with remain so only from want of fully knowing all about each other. We venture to think that it is much the same in the present case. To begin with the popular idea of the Artist. Is the word not commonly supposed to designate every man who paints pictures or carves statues, and no one else?—and no matter how badly he does these two things, the selection he has made of a calling in life is supposed to entitle such an one to be termed an artist; a title which many would never dream of applying to a worker in iron or mosaic, a painter of glass windows, a goldsmith, or an architect. It may be difficult to say precisely and distinctly what an artist is, but we can at least say boldly and emphatically that every man who paints or carves is not an artist—unless he does those things really well; and that he who exercises well these two arts, or any other of the arts known as fine—the arts whose aim it is to produce objects of beauty—is an artist.

A painter of bad pictures or a carver of ugly statues has forfeited his claim to be called an artist, because, the aim of painting and sculpture being to produce beautiful work, what he has done has no beauty in it; on the other hand, the designer and producer of a beautiful building, a charming decoration, or any work of art in wood, stone, iron, glass, lead, or any other material whatever, is a true artist, and may be one of the highest order.

Again, and to take the other side of the case, the art-workman, it is true, has been to some extent appreciated, and with justice, for often he is a brother artist of a high order of skill; but is it not too often believed by many who ought to know better, that the sole aim of a tradesman, be he manufacturer, retailer, or workman, is to make money, and that so long as he succeeds in doing this he will be perfectly indifferent to all other considerations whatever? This idea, wherever it is held, may be safely said to have about as much of verisimilitude in it, and no more, as lurks behind the popular notion of an artist just described. It is true that the tradesman has selected his calling in life (just as in fact the professional artist selected his) with a view to make a living—and perhaps a fortune; but no tradesman worthy of the name is quite without pride in the excellence of his wares, and a desire to excel in his workmanship; and there are happily not a few tradesmen who are real artists—and many more who, without being artists themselves, have had the good sense to introduce art into the objects they manufacture or deal in.

Now, of all the classes of work which come into a building, there are none which cannot be more or less brought under the hand of the artist, and none in which the artist does not need to depend upon the pride which the tradesman or the craftsman takes in good work for the full carrying out of his ideas; and it is this which makes every building a common ground to these two classes of men, who move in very different spheres of life and work, and are not always as ready as they ought to be to perceive where they are related.

We believe, however, if we may be forgiven for speaking candidly, that the manufacturer, the retailer, and the workman have more to learn in this matter than the artist. When an architect, a designer of mosaic or of stained glass, a decorator, or any other of the many descriptions of artists who have to depend on the hands of others for the working out of their ideas, finds his work well carried out, he is not slow to appreciate the advantage. We feel sure, on the other hand, that there are many manufacturers of and dealers in the various articles used in buildings who would willingly do what is needful to raise their work to the highest level, but who do not understand all that makes the distinction in an artist's eyes between bad and good art-work, and cannot comprehend why work that they know to be solid is objected to because it fails to correspond to the designer's drawing in what they deem minute particulars.

To a tradesman thus situated—and there must be many thousands of such—we have to point out that good art, like many other good things, can generally be had for money. There is now no trade and no manufacture in which some men thoroughly able to do the artistic part of the

work are not to be had; and he is a wise employer who, aware that he himself was not trained at a school of art or accustomed to work for an accomplished architect, will secure the best art-workmen that are to be got, will procure designs from the most highly gifted designers, and, having done this, will leave all that relates to design and decoration to others, occupying himself in making sure that work and materials are of the best, and the putting together of the soundest.

In addition to the works done on a building, such as carving, plasterer's work, joinery, and masonry, which all of them give more or less scope to the dexterity of the art-workman, there are very many manufactures with which the artist has now little to do where he ought to have much. We have no doubt that any dealer in or manufacturer of chimney-pieces, stove-grates, door furniture, gas fittings, ground and cut glass, or in fact of any of the adjuncts of buildings which are ordinarily bought out of a wholesale or retail tradesman's stock, if he would take the trouble to obtain from really skilled artists designs thoroughly appropriate to the purpose, and excellent as works of art, would find his efforts repaid.

It may be invidious to mention names, and we shall not now do so; but there are prosperous firms, whose success is notoriously as much due to the good design as to the excellent workmanship of their metal-work, their tiles, their glass or their paper-hangings. There is quite as large a field open to the manufacturers of many other articles used upon a building as to the trades we have just named; and as yet but little has been done to occupy it. It is difficult, for example, to get a thoroughly bad tile paving, but it is more difficult to get a tolerably good stove-grate—looking at both from an artistic point of view; and there is ample room for a perfect revolution of the best kind, by the employment of the art designer and art workman in this branch of the building business.

Nor is it simply the case that there is room for art in such manufactures; there is a call for it. We have in this country, and in the present day, begun to resume the habit of paying attention to the design of matters of every-day use. More persons have learned to distinguish between well-designed ornament and that which is inappropriate than used to care about such things. We have only to look at the stride which church building has taken in our own day to see that architectural taste is spreading and extending.

Art is beginning to show itself in our dwelling houses; and the man who anticipates the change, who prepares and manufactures articles that are not only thoroughly sound, but also perfectly well designed, may, we think, fairly hope to find his wares become the rage, and to fill his own cash-box while he also contributes to the advance of public taste.

If we refrain from pointing to any living art manufacturer, there can be no delicacy in recalling the career of Josiah Wedgwood as an example of what a single man, who personally was even more a good workman and a sound tradesman than an artist, can do in raising a branch of British industry to the highest possible position within the space of a single lifetime. There is ample room for more Wedgwoods; and though all may not attain his rare success, few will work in his spirit without obtaining both substantial returns, and some share of the honours bestowed upon him.

It is unfortunately quite true that many a manufacturer whose wares would not pass muster in the eyes of even a very tolerant artist has his hands full of business, and that the retailer who deals in the goods required on buildings finds what he considers a large enough demand for his goods without his taking the trouble of running after novelties about which he does not know a great deal, and for which no very urgent demand has arisen, so far as he is aware. This, we say, is quite true; it is very much to be regretted; and were this all that could be said about it, we should not trouble ourselves much further in advising the introduction of art into all our manufactures.

We are fully aware that manufacturers will not produce, and retailers will not vend, articles for which there is no demand. But it is because the demand is rising, and has in fact arisen, that we venture to direct attention to the question of art in manufactured goods. No one can walk about any great town with his eyes open and not see that the fashion of building is greatly changed for the better—that good materials are driving out bad, grace is replacing ugliness—the work of the artist is gaining ground. Further, the greatest signs of this alteration in taste are to be seen in the houses of the wealthy, the influential, and the fashionable.

If political changes begin with the many, there can be no doubt that fashions start with the few. Artistic work of all kinds is *coming into fashion*, and to anticipate the demand is to have the control of the market.

If we urge manufacturers to take up this question more energetically than hitherto, we call also upon our architects and art-designers to turn their attention to it. There are many objects which, in houses of moderate cost, must be necessarily made in large quantities. If architects who are artists and have felt the difficulty of obtaining suitable and pleasing articles of this sort will only take the trouble to prepare good and simple designs for such objects, and will cause them to be manufactured whenever they can induce makers to adopt them, and will arrange for the articles made up from these designs being brought into the market, a great deal of good will be done, and progress will be made towards securing a sufficient supply of such objects of daily use as shall replace, and in fact supersede, the many eyesores which are daily on sale and in use in this country.

## OUR RAMBLER

AT ST. THOMAS'S HOSPITAL.

THE promise, or more correctly speaking, the threat, of an eruption, once led 'Our Rambler' to ascend Vesuvius. On arriving at the *locanda* at Resina, where it is customary to quit the carriage, and to engage some of the long-legged and long-suffering animals—some species of horse, certainly not the pony—on which visitors are ordinarily borne to the foot of the cone, a native party was before him, and two cavaliers were just in the act of establishing confidential relations with their hired steeds. Signor Don Massimo di Pompeio was as fat as a Neapolitan of two or three and forty always is, if he escapes the usual hungry meagreness of his nation and his sex. His height was about five feet two, his face was of the colour of tallow, his stubby black moustaches stood out angrily over his mouth, his round black eyes glared suspiciously at the ever present cigar, at which he sucked so vigorously, that the wet end in his mouth seemed to consume as fast as the lighted end in advance of his nose. He raised his right leg like a ballet-dancer. The toe just touched the under side of the stirrup. He pirouetted for a considerable time on the left leg, with no result except that of giving one or two feeble kicks to the dangling iron. Then he went round to the other side of the animal, and raised the left leg, with no better result. Then a chair was brought out, on which he *did* mount, and then, with some aid and trouble, he clomb to his saddle.

Signor Don Giulio di Cesaribus took advantage of the experience of Don Massimo. He tried the chair in the first instance. He swerved heavily forward when motion was first essayed; but when his feet were inserted in the stirrups, he took kindly to his unaccustomed elevation. His legs were long, and, finding that he could keep the nag between them, his courage rose, and he excited the speed of the animal by a series of joyous little howls. Very straight he rode across the country, over everything indiscriminately—road, scorise, hedge, what not—woe to pig, or dog, or child, that did not fly from his rapid path. At length the animal made a sudden genuflection, and Don Giulio, figuring for a moment like a flying eagle, with his long skirts spread out as wings, shot through the air, and alighted on his head. When they put him up again, he rode sadly and silently in the rear.

On we went, over those infamous scorise. A chapel to Saints Crispinus and Crispianus ought to be erected at the Hermitage. And when we reached the summit, for that is all to which we now seek to refer, what was it that first struck and most constantly attracted the eye in all that magic panorama? Two very ugly buildings. Look where we would—at the sharp precipice of Capri, with its cap of floating-cloud, at the bluff outline of Misenum, at the noble palaces of Portici, Caserta, Naples—at city, shipping, or fisher barque on the distant horizon—back came the glance. The long, unbroken façade of the Albergo dei Poveri, or the ugly light yellow masses of a set of half-finished warehouses at Naples, constantly attracted the vision from all the more noble and more picturesque incidents of the Seine.

It was in that volcanic ramble that we first became distinctly impressed with the fact that, of all elements of architectural structure, none strikes the observer so irresistibly as magnitude. Sheer bulk presses on the vision. It is not necessary to this effect that symmetry should regulate this bulk. On the contrary, a perfectly proportioned building is apt to look far less than it is. Magnitude in a single dimension is, perhaps, the most intrusive or commanding, as in the case of a certain ponderous London column, or of the long, straight, roof line of St. Alban's Abbey. But repetition of heavy masses, such as those of the warehouses of the *Arenaccia*, at Naples, has the most irresistible effect. Look where you like, you will always see these ponderous blocks, while they are everywhere within the field of vision.

This reflection occurred with unusual force to "Our Rambler" as he stood, a day or two ago, on that light and tremulous platform with which the taste and skill of Thomas Page has replaced the hopeless modern ruin of Westminster Bridge. Thomas Page, who having, as resident engineer under Sir M. I. Brunel, completed the patient and heroic labour of the tunnel beneath the bed of the Thames, has now, on his own design, erected the widest, and the lightest, and, taken all in all, perhaps the most graceful of the road bridges that span its surface. Looking northwards, the great cluster of towers forming the sky line of the Legislative Palace, gave the idea rather of a group of buildings than of a single structure. On the southern bank, behind the long white line of the finished river wall, rose a forest of masts. Within this leafless wood, the warm glow of red brick, and the gleam of newly-cut Portland stone, indicate the growth of a building which, when completed, will attract the eye more forcibly than almost any, if not quite than any, of our newer Metropolitan structures.

The new Hospital of St. Thomas is a striking illustration of that never-to-be-forgotten lesson, that the plan is the first proper object of the study of the architect. Novelty of purpose demands novelty of plan; novelty of plan, if rightly dealt with, produces, in its turn, not only novel, but commanding, effects of pictorial excellence.

The first requisite for a healthy hospital, we are taught by the medical science of the day, is a free supply of pure air for the wards. For the air to be pure, there must be a sufficient interval between ward and ward, so that infection or de-oxygenated air shall not pass from window to window. Therefore when a hospital is intended to

contain a greater number of beds than can be disposed in a single line of building, something of a gridiron form of plan becomes essential, and the spaces between the bars of the gridiron must be adequately wide.

This interspacing of wards and open courts is differently contrived in some of the best modern hospitals. In the Herbert Hospital at Woolwich, the wards jut out on either side of a central longitudinal corridor. The plan of the new Infirmary at Leeds might almost have been taken from that of a portion of the former building. At Blackburn the wards project alternately from either side of the central continuous line. At the Lariboisière Hospital, at Paris, wards and offices are arranged round an open quadrangle. In St. Thomas's Hospital the continuous part, a back bone of the building, is to the south, facing towards the grounds of the Archbishop's palace. Six pavilions or blocks, containing wards, project each some 124 feet towards the Thames. A central chapel advances to about one-third of that distance. A block containing offices, to the east of the main building, and connected with it by arcades, is to some extent a repetition of the pavilions. Thus over the long line of 1,200 feet are regularly disposed eight large blocks of very similar structure, connected by an arcade in front, and, with one exception, by a more massive structure behind. The effect of this large mass of building, cut into such distinctly repetitive forms, will be to attract the eye of the spectator with a power which more ornate but less important structures can never possess, but even in this particular it seems probable that the elevation least seen, and perhaps least studied, may, as is not unfrequently the case, prove the more effective of the two; certainly, as far as it has gone, the land-front produces a remarkable, and to us an unexpected impression on the spectators.

It remains to be seen whether the general forms, and the treatment throughout, and especially the features on the sky-line, will be such as to cause this building to give as much pleasure to the critical observer of its detail, as its striking aspect is likely to afford the ordinary passer-by. The work, as far as it has gone, warrants our hoping that this will be so. Thoughtful care is evident in every detail; the colours of the materials are rich and well-contrasted, the very best of bricks and stone (Fareham bricks and Portland stone) are employed, and the mouldings, though plain, are of good design.

We cannot however dismiss the fear that an architectural mistake has been committed in the spacing of the blocks, and in their alignment on the Thames front. They are not all equidistant, nor all on one line. The chapel, which forms the central feature, sets back from the general river-frontage, and the space between the blocks is wider here than elsewhere. It may prove that the effect of this is satisfactory; but if it produce the result that the building, as seen from Westminster Bridge, shall appear not so much one effective whole, as two much less effective groups on either side of an inconspicuous centre, a very considerable portion of the overpowering effect due to regular repetition will be found to have been lost.

But to return to the works. In a prolonged stroll round, and through, and over the building itself, while seeing much to note, and much to admire, the Rambler is weak enough to confess that he does not remember anything very distinctly to condemn. Whether that is his fault or the architects', time will show. There was, indeed, a disappointing absence of hurry and scramble. Over the whole area of the great building the work was proceeding in a manner that may be characterised as highly monotonous; no strikes among the men seem to have occurred. The scaffolding was everywhere alike; clean, strong, and sound, and covered with acres of planks. We did not see a bit of the building left out here, and another pulled down there; or any of those incidents which add so much to the picturesque variety of a large work, and show that the architect thinks it never too late to mend. Amid this steady and unpretending progress, the points that most delayed us on our ramble were the concrete walls and arches of the foundations, the machinery for sawing and dressing stone, and the girders from Belgium.

We must not, however, omit to mention the long series of cantilevers, vases, bases, and other items, in Ransome's artificial stone. Those critics who demand that every individual stone in a building shall bear the mark of the human purpose of the mason who cut it, cannot but sneer at the cantilevers turned out of a mould, and as sharp as good Staffordshire castings. But price is an important element, even when an architect has half a million to spend, and in the choice between a series of well-formed, durable, artificial, stone ornaments, and none at all, we are on the side of the former.

Another remark applies to a simple but most effectual contrivance, the honour of which the Rambler understood to be due to the clerk of the works. Are any of our readers unacquainted with the usual condition of the inside of a flue? Do they know how invariably, or almost invariably, smoke-traps and soot-traps are set, as if of *malice prepense*, by the bricklayers. As surely as a cabman will drive you round unnecessary corners (for in the cabman's Euclid it is demonstrated that a straight line is the longest that can be taken between two points), so certainly does the bricklayer—well, *scamp*,—the inside of a flue. Our friend here has been too much for him, however. By the simple contrivance of a wooden trunk, round which the flue is built, not tightly, but so that the trunk can be drawn upwards as the work ascends, regularity is secured, and trouble is actually diminished. We noticed a very skilful disposal of some of the flues, which creep round the semi-circular heads of the windows of the first-floor, within the very thickness of the arch.



Over the whole area to be covered by the building has been spread, broad and deep, a solid bed of concrete. To say nothing of the structural value of this precaution, especially in case of the unwelcome visit of an earthquake, we cannot but believe the hygienic effect will be of great importance. Residing on the alluvial bed of a river is distressing to many constitutions. It is a sure aggravation of any tendency to cancer. The relief experienced, in some cases, by passing on to a marble floor, or a limestone soil, cannot be explained either by thermometric or on hygrometric reasons. It is no doubt a phenomenon due to terrestrial electricity; and we trust that the concrete in the present instance will have a somewhat similar effect. In the buildings to the west of the main edifice the work is at present only level with the ground floor. It is interesting there to observe the concrete walls, and the arches of the same material, not built on blocks, but thrown in, layer after layer, between boards, the removal of which, when the concrete has hardened, allows the display of a series of horizontal marks, that tall of the method of construction. The arches have been frequently built, as is so often the case in Italy, on earthen centres.

Chapter and verse, heights and depths, precise measurements of all kinds, are matters for a report on the building, such as may doubtless be furnished in due time. It is not within the province of the Rambler to provide notes bristling with statistics; but a building 1,200 feet long in one structure, and extending, with its subsidiary schools and offices, to 1,760 feet in length, occupying an area of  $8\frac{1}{2}$  acres of ground, purchased at a cost of some 95,000*l.*, and containing 24 millions of bricks, 350,000 cube feet of Portland stone, and 1,250 tons of wrought-iron girders, presents certain very salient points to the memory.

The noble style on which this great work has been planned has enabled the architect to allow an unusual width between the wards—a matter, as above hinted, of extreme importance to their healthy ventilation, and freedom from mutual infection. At the Lariboisière Hospital, the space thus allowed is 23 yards; at the Herbert Hospital, it is only 18; at the Leeds Infirmary, and at the Blackburn Infirmary, it is 25. At St. Thomas's it is no less than 42.

The patients who are cured in this hospital, which is intended to contain 588 beds, will no doubt depart full of gratitude for the care that has been taken to provide for their comfort and tendance. But let science do her best, there are some who will *not* depart, or at least who, ascending, let us hope, by a staircase, compared to which that of the giant's at Venice is paltry and contemptible, will leave *that* on their forsaken couches which has to be removed by others. A tunnel under the building provides for this necessity, with decorum and privacy. It goes on to the lecture-room of the anatomical theatre, into which, not writing F.R.C.S. after his name, the Rambler cannot venture to peep.

For lifts, and flues for ventilation, and earthenware pipes down which the linen from the beds is to disappear, for kitchens, and subsidiary kitchens, and all the well-considered details of the Hospital proper, we must refer to the professional papers before-mentioned. The Belgian girders—as to which so much interest has been excited, as a proof of the effect of our own trades' disputes in enabling foreigners to undersell us in London itself—are strong and solid. A man familiar with English, and ignorant of foreign, iron work, would be puzzled to know whence they come. One peculiarity struck the Rambler. There are a certain number of upright pieces of angle iron bolted to each vertical web. In all these the Belgian contractor has given good measure; in fact, from want probably of rolls to turn out the exact size shown on the drawings, all these pieces were from  $\frac{1}{2}$  to  $\frac{3}{4}$  inch at least too wide. They projected beyond the end plates of the girders, in a conscientious, but useless fashion. The iron thus wasted (and all iron work that is not doing duty does harm, as extra weight) must come to an appreciable percentage on the 1,250 tons of girders. It would seem to amount to a difference sufficient to turn the question of price, if it ran very close, or was calculated very exactly. The English manufacturers need not close their works just yet, as far, at all events, as finish of manufacture is concerned.

The ever-growing application of the power of steam was remarkable in the arrangements of the builder: here you saw a barrow, full of mortar, ascending on its airy road, without the attendance of a single Irish labourer; there a pump was raising from a well, sunk for the purpose to the depth of 45 feet, a supply of water to a wooden tank at the level of the top of the building, from which pipes distributed the liquid to every portion of the work. For that supply the water companies would have demanded not less than 2,000*l.*

Under a convenient shed-roof a series of saws were slicing the clean-cutting Portland stone into blocks and slabs, with a business-like rapidity that confounded the very memory of the solitary man whom the Rambler remembers, as having slowly sawn away at a single block of marble during the whole of his boyhood (perhaps the block was changed during the holidays, but it always looked the same). One man looks after five or six of these saws, feeds them with sand and water, and removes and replaces the stone. Steam does all the rest; and does it well—rapidly, neatly, and cheaply. Still more interesting than the saws (which are also in use at the quarries), were two machines for cutting cornices, or other moulded stone work. One of these was, in plain words, but a simple gigantic plane. The stone is fixed on a ponderous traversing iron lathe bed, which moves to and fro beneath a steel cutter, changed from time to time as greater precision of outline is attained. It is an application of the principle

of the joiner's moulding plane to stone; only the stone moves, and the plane is fixed. In the other, instead of a fixed cutting iron, we have a revolving wheel, in the periphery of which steel cutters are inserted. The rapid revolution of this wheel gave a series of blows to the stone, in its slow passage beneath, like those of the mason's chisel. The work thus executed is remarkably fine and regular. It is very possible that this system might answer with stone that would not take kindly to the plane.

Looking back, as we recrossed the bridge, on that busy scene, how different was the interest it presented from that excited by the view an hour or two before! That whole tangle of poles and planks, which veiled the rising walls, seemed now instinct with purpose, and pregnant with wise forethought. The genius of execution was doing justice to the labour of the genius of design. Stretching within the quay wall, which replaced the ancient confused squalor of the muddy shore, from the iron bridge of Westminster to the grey and growing ruin—or quasi ruin—of the Lollard's Tower, resting one flank on the expression of the science of the nineteenth century, the other on that of the faith, or at least of the theology of the sixteenth, the Hospital seemed to form a link between the two. Exactng the utmost service from constantly-advancing science, and rendering the fruit of that service in a noble and varied work of charity and mercy, the benevolent institution erected under the invocation of the doubting Apostle seems to hold to both worlds. Home, or rather outpost, of those whose care it is to go between the dead and the living, and oftentimes to stay the ravages of plague, it tells us that the example of him who showed kindness to his neighbour is not altogether without fruit among ourselves. If there be one class of public buildings of the present day on which either the professional man or the philanthropist can reflect with almost unalloyed satisfaction, it is that which comprises our modern hospitals. Nor is it any disparagement to those other examples of the same class to which we have referred, to express the conviction that of all those now standing in Europe, that of St. Thomas's will be among the most worthy of admiration.

#### RED-TAPE.

A CURIOUS and instructive instance of the peculiar logic of red-tape was afforded by one of our late Chief Commissioners of Works on the occasion of the discussion in the House of Commons on the proposed viaduct in connection with the Thames Embankment.

Lord Elcho had been deploring the absence of any central authority in London which could hinder the execution of such a monstrous piece of ugliness as this viaduct. 'At the present moment,' said his Lordship, 'there was no controlling power in London over matters of this kind, a state of things that existed in no other metropolis in the world. Take the case of a railway company—say the South-Western—which wished to join their line to a railway in the North of London. They brought in their Bill, which was submitted to a Committee of that House; and if the plans were properly drawn, and the public requirements seemed to render the railway necessary, the Bill passed. The Committee paid no attention to the nature of the works, *so far as regarded the beauty of the metropolis.* What was the result? The result was that they had such a bridge as Hungerford Bridge, which intercepted the view of the Houses of Parliament; and that they had the monstrous station at Cannon Street, which jutted out and intercepted the view of St. Paul's.' This was the gist of the argument—not that there was no control, but that there was no control *in matters of taste.*

Now, what is Mr. Cowper's answer? It deserves to be recorded as showing the mysterious workings of the official mind. 'His noble friend seemed to think,' says Mr. Cowper, 'that if there were only a Council to advise the First Commissioner of Works, every one would be pleased; but, in point of fact, the Embankment had been submitted to a Commission, consisting of General Jebb, Captain Douglas Galton, Mr. Payne, Sir William Cubitt (then Lord Mayor), and Mr. Hunt. Sir J. Thwaites was also a member of it, and though he declined to sign the report, because he disapproved of one suggestion in it, he expressed his general agreement with the scheme.' That is Mr. Cowper's answer, and it amounts to this:—'You say that there is no controlling power in matters of taste, and yet you had here a Commission sitting on this very project, and authorising it, consisting of two Royal Engineer officers (one of them an Inspector of Prisons), a stipendiary magistrate, a contractor (who was also Lord Mayor), and a surveyor, with a civil engineer who does not count, as he would not sign the report.' Surely a wonderful answer, and worthy of the horticultural First Commissioner of 'Works and Buildings'!

#### MR. FOWLER ON THE SUEZ CANAL.

MR. JOHN FOWLER, the engineer of the Metropolitan Railway, has lately published his impression of the works of the Suez Canal as derived from a personal visit.

He observes that these works are simple in character, and in a soil favourable to execution; but they are of such vast magnitude, and in a country which presents such peculiar difficulties in climate and in the absence of fresh water, that special organisation and adaptation of means of no ordinary kind have been required for their realisation.

A harbour for the entrance to the canal, and for the general purposes of the undertaking, has been constructed at Port Said by running out into the sea two breakwaters, formed by artificial blocks of stone.

The harbour is well protected from the strong and prevailing north-west winds. The portion of the harbour affording shelter to vessels is nearly 500 acres in extent, and, although the depth of water is not sufficient for the largest men-of-war, it is quite sufficient for ordinary merchantmen if the present depth be maintained.

The artificial blocks in the breakwater are composed of one part of hydraulic lime from France, and two parts of sand obtained on the spot, and are therefore really hard mortar.

Leaving Port Saïd, the canal to Suez may be conveniently divided into the following portions:—

	Miles in Length.
1. Port Saïd through Lakes Menzaleh and Balla to near El Ferdam . . . . .	37
2. From near El Ferdam through the great excavation of Seuil d'el Guise to Lake Timsah . . . . .	9½
3. Through Lake Timsah . . . . .	5½
4. From Lake Timsah through the excavation of Seuil du Serapeum to the Bitter Lakes . . . . .	7½
5. Through the Bitter Lakes . . . . .	23½
6. Through the deep portion of Chalouf Cutting . . . . .	5
7. Thence to Suez and the end of the canal . . . . .	11
Total length . . . . .	99

With minute exceptions the whole of the canal is now being excavated and completed according to one or other of the following sections:—

1st. 196 feet in width at the surface of the water, and 26 feet deep for 72 feet at the bottom. The slopes are 2 horizontal to 1 vertical, with one or more horizontal benches of 10 feet in width, according to the depth of the cutting.

2nd. 327 feet in width at the surface of the water, and a similar depth of 26 feet for a similar width of 72 feet at the bottom. The lower part of the excavation is also 2 horizontal to 1 vertical, but the slopes above and below the surface of the water are 5 to 1, and a horizontal bench of 58 feet connects the two slopes.

The canal is being carried out with reference to these two sections in the following manner:—

According to the first section—

	Miles.
From near El Ferdam to Lake Timsah . . . . .	9½
From Lake Timsah to the Bitter Lakes . . . . .	7½
Through the deep part of Chalouf Cutting . . . . .	5
Total . . . . .	22

According to the second section—

	Miles.
Port Saïd to near El Ferdam . . . . .	37
Through Lake Timsah . . . . .	5½
Through the Bitter Lakes . . . . .	23½
At the Suez end of the Canal . . . . .	11
Total . . . . .	77

Through the Timsah and Bitter Lakes the lower portion only of this section is required to be excavated, in consequence of the low level of the ground.

It will be observed in the description of the second section that the slope at the surface of the water is flat (5 to 1), and provision is now being made for protecting this slope with rough stone pitching, trimming the upper slopes, and otherwise treating it as a finished work. This may be safely done, because the section is so arranged that the canal may be widened at any subsequent period without disturbing any of the work already done.

With the first section, however, the case is different. This section has been adopted in the deep cuttings to effect the largest saving possible in the quantity of excavation, and therefore, if a future widening of the canal is required, one or both side slopes must be thrown back, and a considerable portion of the present work interfered with.

As a rule no stone pitching or other protection against the wash of passing vessels, or wind, or current has been provided for the part of the canal where this section has been adopted, although the slope at the surface of the water is 2 to 1.

The works of the canal at Suez consist chiefly of an entrance channel into the Red Sea, increasing gradually from 72 feet in width at the bottom to 980 feet, of a basin or dock, and a considerable extent of reclaimed land.

The quantity of work yet remaining is very large, but taking the progress made during the last few months, and applying the same rate for the future, it appears to be possible that in the absence of some unforeseen contingency the canal may be sufficiently completed for the purposes of traffic during the present year.

The question of maintaining the canal and its harbour of Port Saïd permanently open for traffic has created almost as much professional and public attention as the construction itself, and in some minds probably much greater doubt and difficulty have been felt on this than on any other point.

#### The Prevention of Nile Deposit from Choking up Port Saïd.

It cannot be doubted that large and almost constant quantities of fine alluvium will continue to be brought to Port Saïd from the Nile, and that the effect of placing a new obstruction to its course by a breakwater at right angles from the shore must cause a constant tendency to deposit, and this result has already occurred to an extent deserving the most serious consideration.

After the most careful observation of the old and new shore at Port Saïd, and the operations and consequences now going on there, Mr. Fowler's opinion is that no apprehension need be entertained as to the channel and harbour being silted up and destroyed; but, at the same time, that considerable expense in dredging will be constantly required—that the western breakwater must be made solid, and may have to be extended.

#### The Impossibility of Preventing the Sand of the Desert blowing into the Canal in quantities totally unmanageable.

This objection has been felt to be one of great weight, and when it was considered generally and without the correction of local knowledge it appeared to be fatal: fortunately, the only portions of the canal which will be liable to be affected by the sand of the Desert to any extent worthy of consideration are the two excavations on each side of Lake Timsah, and here the company are making provision to diminish the quantity by trying experiments with trees and shrubs, so as to plant the slopes and the ground for some distance on each side of the canal. It is also probable that water from the freshwater canal will be made available for forming an extended oasis at and around this portion of the canal.

These operations will be somewhat expensive, although they are doubtless prudent and desirable; but after every precaution has been taken, Mr. Fowler believes it will be necessary to keep one or two powerful dredges in Lake Timsah to keep the canal clear from drifting sand.

#### The difficulty of protecting the Banks against the destructive action of the Wave caused by Passing Vessels.

Proper and immediate protection of the slopes by stone pitching above and below the surface of the water along the whole course of the canal will be found necessary if the traffic is to be conducted at a reasonable rate of speed. This work will no doubt be executed much more conveniently and economically after the canal is opened throughout, and the large quantity of stone required can be conveyed without charge; but, on the other hand, it will be more difficult to place the stones below the level of the water, and probably the slopes may have sustained some mischief before the work can be done.

#### The impossibility or difficulty of supplying the abstraction of the waters of the Bitter Lakes during the evaporation of the summer months through the ordinary section of the canal between the Bitter Lakes and Suez.

The vast extent of the Bitter Lakes (100,000 acres in superficial area), when connected with the tidal Red Sea by the Chalouf excavation, will produce in the summer months, when the evaporation is greatest, peculiar currents and hydraulic phenomena.

The largest daily evaporation or abstraction will amount to about 250,000,000 cubic feet of water, and this will be chiefly supplied from the Red Sea, which is far nearer than the Mediterranean, and has a tidal range of about 6 feet in spring tides, and 2 feet at neap tides, while the Mediterranean has a far less tidal range.

The currents which will thus be created by evaporation and tide will be sufficient to assist or retard navigation, as they will probably approach, if not exceed, two miles per hour; but they will scarcely be strong enough to affect injuriously the bottom or sides of the channel through the Chalouf cutting after the proper protection by stone pitching has been carried out.

#### Traction Power to be Employed on the Canal.

It is now understood that steam vessels (except those with paddlewheels) may use their own power, and that any vessel may be towed through the canal by steam tugs, the speed to be limited in all cases as may be settled hereafter.

This is doubtless the best decision, both for economy and convenience.

If the traffic should rapidly become very large, it is possible that several passing places will have to be provided without waiting for the widening of the whole canal.

A strong side wind would also be a considerable difficulty, and occasionally it may be found to be almost impossible to keep a large vessel from the sides of the canal. In Egypt very strong winds from the east and west are not common, and the difficulty will probably not amount to more than a simple retardation of the speed of the vessel, and the necessity of lowering all masts and rigging capable of being lowered. Tug vessels can be made available for the purpose of enabling a vessel to keep the channel of the canal.

## THE HANDY-BOOK OF HOUSE-BUILDING.

### CHAPTER I.—LIVING-ROOMS.

(Continued from page 51.)

*Comfort.*—Quiet is essential to the comfort of living-rooms. Quiet means partly that the house is so planned as to keep the most noisy part of household life remote from the sitting-rooms, and partly that the construction of its walls and floors is such as to transmit as little sound as possible.

For the sake of quiet, therefore, if there is a servants' staircase it ought not to go up close to the door of one of the living-rooms; the nursery and play-room ought to be rather secluded; the bells ought not to be fixed within hearing of any except the servants who have to answer them; lifts or any other noisy mechanical arrangements ought to be kept away from the best part of the house; a force-pump or steam-engine, if there be either, ought to be well out of earshot. No pipe for conveying water or drainage from an upper floor ought to pass close to any living-room lest the disagreeable sound of its action be overheard. Those apparently convenient rolling shutters, which being metal, and running in metal grooves, raise a clatter every time they are lowered or lifted, are on account of their noise, as well as the difficulty of repairing them when out of order, unfit for a dwelling-house; and, not to multiply instances, a flat roof over any living-room so constructed that in times of rain or hail a rattling is heard by those below, unfits the room for comfortable occupation.

A still more serious invasion of quiet occurs when the occupant of a room hears what goes on in an adjoining room—or in the house next door, either through the walls, ceiling, or floor. The principal precautions to be taken against this are as follows:—Walls which separate rooms should be built thick (if possible not less than a brick and a half thick), and care taken that no timber goes through them from one face to the other at any point. Porous bricks will transmit less sound than very hard ones, and

may consequently, if strong enough, be used for internal walls. Where framed partitions separate room from room, they should be either brick-nogged, i.e., filled in between the timbers with fragments of brick; or else 'deafened,' which means that they are supplied with a thickness of lath and plaster, roughly but solidly executed, in the very centre of the partition intermediate between its two external faces. This is easily done by nailing strips of wood, technically called fillets, against the side of each timber of the partition, and fixing the laths for the deafening to them. It is essential that the brick-nogging, or deafening, be continued at least down to, and if possible below, the level of the floor—a precaution often omitted where wooden skirtings enclose the lower part of the partition.

Between each ceiling and the floor above it there should be a similar layer of rough plastering, which is technically called 'pugging.' There is always a risk of conducting sound from room to room if any joist or other timber is carried continuously from one room to another. Lastly, in noisy town situations the windows must be glazed with very thick glass; and if plate glass is not found sufficient to keep the room quiet, double sashes, or double glazing, probably will be. In using double glazing the necessity for occasionally getting at both sides of each pane of glass to cleanse it must not be overlooked.

To be comfortable all rooms must be dry. Living-rooms that have no others over them, or that have one-storeyed bay-windows, call for the greatest care in the roofs by which they are covered. This is very obviously a weak point, and is very often neglected; but the effects of this neglect are usually confined to damage to the plastering; for few persons will endure a stained ceiling long enough to allow the room to get damp. Un-sightly blemishes are over the soonest remedied. Windows not unfrequently permit rain to blow through them; this defect rises from bad material and workmanship, or from wrong contrivance, or both. Some rough and ready remedy can mostly be found in the use of sand-bags or india-rubber tubing, or similar expedients, so that health need not suffer; but comfort is very effectually damaged by any such misadventures.

Where damp attacks a floor, it is often long before it is found out. The timbers and boarding of many a ground floor have suddenly given way, and been found to be hopelessly rotten, in houses where it had not been suspected that under the carpet or the oilcloth there lay a moist decaying vegetable substance, slowly contaminating the atmosphere of the house, and keeping it constantly damp and unwholesome. The remedy (or preventive, as the case may be) against a damp floor is to secure throughout complete ventilation under the timbers, by air-bricks or some such precaution. If joists are laid direct upon the earth, floors can hardly escape rotting, even if ventilated: the surface-earth ought, consequently, always to be removed from the whole area of the site of every building. Careful persons like, in addition to this precaution, to cover over the whole site with a thin layer of concrete; but, whether this is done or not, there ought always to be a clear space of eighteen inches at the least below the joists of every boarded floor; and the level of all such floors ought to be well raised above that of the surrounding ground. All paved or tile floors should be laid on a well-prepared artificial bed of either concrete or some sort of dry hard material.

Damp in walls is the most common form, and the one least easily cured, in which this nuisance shows itself. It must be remembered that walls are always, or all but always, built of materials more or less porous, and that they have their foundations some way down in the earth. The moisture below the foot of the wall, that which trickles and creeps along the surface of the ground, and that much larger quantity which, in its passage through the earth just below the surface of the ground, is interrupted by the walls, all supply that which the porous materials of the wall will eagerly drink in; and, if this be once absorbed, it will rise by capillary attraction, and unless checked at some point will render the building damp. The remedies are these:—The water from below the foot of the wall must be prevented from rising by a 'damp-course,' i.e. a continuous layer of material, impermeable to water, going quite through the wall from outside to in, at the lowest point where it will be above all contact with the earth. This damp-course ought to be below the level of the lowest boarded floor. Slates—a double course of them—laid in cement; asphalt, put on hot; and hollow slabs of glazed earthenware, made for the purpose, are all excellent materials for use as a damp-course.

The walls should, in addition, be protected, if the soil be at all damp, by an area; either an open one, which gives light and air to a basement storey, or a 'dry area,' constructed by building a thin wall outside the main wall, and a short distance from it, and when the level of the ground or a little greater height is reached, arching over the space thus formed or covering it with paving stones. This precaution intercepts the moisture that is below the earth's surface, prevents its touching the main wall, and so keeps the sides of the base of that wall dry.

Rain, however, often finds its way through the walls themselves, and even has been known to drive through the brickwork or masonry of chimneys, and to come trickling down into the fire, or oozing out above the fireplace. Sometimes this is due to the walls being too thin for the nature of their materials. Few outer walls built of bricks, even if hard sound ones, are weather-tight, unless they are a brick and a half thick at the thinnest part; and when walls are of masonry or of soft sorts of brick, the minimum thickness that is safe varies with the quality of the material. There are some qualities of brick and some stones through which heavy rain accompanied by a driving wind will penetrate to almost any depth. The best ordinary safeguard, where such materials alone are available, is to build the external walls double (see page 50); that is to say, with a clear cavity of some two to four inches, or more, in the heart of them. If this is not done, such walls may be battened inside, i.e., small timbers being placed against their inner face, lathing and plastering is fixed to those timbers; and the space behind this plaster face being left unoccupied, does something to prevent the inner face of the wall from at least showing the damp.

The weather-tiling adopted in many parts of Sussex and adjacent counties as a protection to external walls, which, when so shielded, may be built either of soft bricks or of timber framing, is well spoken of by those who have used it, and probably deserves to be more extensively employed.

Even where the materials are good, wet penetrates walls readily if the mortar joints are not thoroughly well pointed, i.e., flushed up with mortar. Water that drips from any projection, or from any eaves that have no gutter, or the leakage from a defective rainwater pipe, will almost invariably penetrate to the inside of any solid wall, if beaten against it by the force of the wind, however good the pointing and the materials. Water that drains down from a window, and is conducted down to the face of the wall itself by a splayed cill, below which no moulding has been provided to throw off the wet, will often render the wall under the window damp; in fact, rain will at times penetrate at this point, however well thrown off by a projecting window-cill properly 'throated.' On this account it is especially undesirable to make that part of the wall immediately below the cill much thinner than any other part; yet for convenience inside the room this is almost always done.

Where the materials are very porous, and a hollow wall cannot be adopted, the best, and, in fact, the only effectual resource among those hitherto tried is the coating the exterior of the building with really good Portland cement. The use of a soap and alum wash has been much advocated to protect porous material from wet; but the present writer has been unable to discover any authentic example of the use of this or any other wash having proved successful. It is fair to add that Professor Church's process, now being made use of by Messrs. Ransome, seems to promise a better means of rendering porous materials waterproof than those yet tried; but it has not yet been long in use. Lastly, it may be well to remind the reader that all climbing plants have a great tendency to render the walls against which they grow damp; ivy being the worst, because its leaves remain on it all the year round.

## THE DUDLEY GALLERY.

(SECOND NOTICE.)

TO attempt anything like a detailed description or criticism of even one-fourth of the water-colour drawings which are included in the 'General Exhibition' this year would be impossible within the limits of any ordinary journal. Nor if we had unlimited space at command, should we venture to undertake the task. A large proportion of this and many other annual exhibitions must necessarily consist of works which represent a fair amount of executive skill—the gradual progress or development of students in specific style, or that inferior quality of art which aims at nothing higher than a mere transcript of fact, more or less literal, but unrelieved by grace of touch or choice of subject. The latter class of pictures, no doubt, commands a certain order of popularity—just as real Hansom cabs and practicable lamp-posts on the stage will help now-a-days to draw a crowded audience. But we submit that it cannot fairly come within the scope of serious art-criticism. One may recognise the fidelity with which a sturdy ploughman's smock frock is studied, and even approve the conscientious portraiture of a drawing-room spaniel—but—*Après?* We have really nothing more to say on such matters. They may be useful accessories to a noble work, but in the hands of a commonplace painter they represent nothing more than the literal prose of art. On the other hand, it is astonishing how the simplest subject—the least affected treatment, may become interesting from the taste and method of its execution. Mr. A. C. H. Luxmoore, taking some familiar lines from 'In Memoriam' for his title, has painted the toilet of a country lady (81) whose blue brocaded dress suggests the costume of the last century, though the picturesque furniture of the room belongs to an earlier epoch. The work is admirable throughout; so is his study of an old oak armoire (158) in the Earl of Leicester's Hospital, Warwick, though not a single figure is introduced in the composition. Mr. Tom Gray's 'Straduarus' (157), an old musician of the Georgian period, who sits with his violin on his knees contemplating his favourite instrument with something like paternal solicitude, is full of character and artistic quality. Miss Alyce Thornycroft sends a modest but deftly handled little work, 'Lost in Mist' (30), in the colour and general treatment of which we recognise the influence of that new school of English art called by a dozen different misnomers, but whose chief individuality lies in the rejection of the commonplace, whether in subject or workmanship. A larger figure piece by this artist's sister, Miss Helen Thornycroft, hangs at the south end of the gallery, and is distinguished by the somewhat enigmatical title of 'From Far Away' (226). It has much to recommend it, but the turquoise blue dress of the lady represented is unfortunately out of key with the background. Miss Lucy Madox Brown is another lady artist who aims at style in her execution, and, it must be confessed, with considerable success. Without leaving her studio for a subject, she has composed a group (239) which, but for a little uncertainty of handling noticeable here and there, might fairly take rank among the productions of older and more experienced hands. If we cannot say quite as much for her brother's 'Jason' (125), it must be remembered that the last-mentioned picture is literally the work of a boy, and, as such, is not only very creditable in itself, but augurs well for future excellence.

Among the smaller figure pieces, Mr. Hubert Herkomer's 'Choosing' (268)—a cottage girl walking down a little avenue of cabbages in a kitchen garden—may be quoted as an instance of the eccentricity and perversity with which a clever artist will sometimes go out of his way to select an ugly subject by way of assuring us that he has no sympathy with the hackneyed themes of ordinary picture makers. Surely there is a middle course to be adopted. Here we have excellent work and a refined sense of colour thrown away upon the representation of an incident which is utterly devoid not only of the simplest conditions of pictorial beauty, but also of ordinary human interest. The drawing attracts notice, it is true, by virtue of the skill with which these difficulties have been met, but there are sufficient drawbacks to the development of true art in this country, without wilfully and needlessly encumbering it. It is, however, only fair to add that whatever affectation there may be in this painter's choice of scene, there is none whatever in his manner of work, which is at once vigorous and refined.

Let us turn now to some of the principal landscapes in the Exhibition, and note the revolution which has been brought about within the last ten years in this department of art. There was a time when amateurs had to choose between the old conventional, and the (then) new realistic school—between what in studio slang was once called *tone-y* work and the minute inaccuracy of pseudo-pre-Raphaelitism. But of late there has been a welding together of old and new principles, and the result is an eclectic school of painters which will assuredly leave its mark in this second half of the 19th century. Take, for instance, the river-side scenery of which Mr. John C. Moore has given us so many examples both at home and abroad. His 'Yellow Tiber' (326) at twilight, with St. Peter's and the Vatican mapped out in grey against the yet luminous horizon, is an intensely faithful study, true in tone, colour, and even in detail, down to the stern of the old ferry-boat; but if there are no tricks of effect, there is an equal absence of fussy elaboration. It is all the broad, simple work of a man who understands the precise relation between art and nature in landscape, and can express it with skill and confidence. As much might be said of the same artist's 'Autumn Morning on the Pincio' (184), 'Chiswick' (482), and 'December Morning on the Campagna' (667).

Mr. Henry Moore exhibits two admirable sea pieces—'Thunder Clouds, Evening' (104) and 'Clearing after Rain' (150), the titles of which speak for themselves, but not so emphatically as the artist's brush itself. His 'Early Summer near Kenilworth' (339), with its fresh green meadowland, dotted here and there with poppies—its sturdy young oak trees and crisp round blue-white clouds—is one of the most charming specimens of pure pastoral landscape that he has ever painted.

It is much to be regretted that the white 'mount' once in common use for water-colour drawings is being gradually superseded by the gilded 'flat.' Gold forms an excellent foil for oil paintings, but we have always considered it too heavy for works executed with the lighter pigment. Mr. North's 'Farm Corner' (299), a careful and tenderly tinted study, is in our opinion marred by the metallic sheen of its frame, and would have been twice as effective with a margin of plain 'Bristol board.' There are, however, some works in which the lavish use of body colour and the scale of the drawings themselves justify an exception to this rule. Mr. Arthur Severn's bold and master-like representation of sea-breakers (297) is a case in point, but such instances must be considered as beyond the legitimate range of artists '*en aquarelle*' proper. Indeed it might be said of this talented young painter's work in general, that it savours too much of the scenic, and would be far more thoroughly appreciated across the footlights of a theatre than on the walls of an exhibition. His 'Thames Embankment' view (566), full of dash and cleverness as it is, bears evidence of inventive power rather than of conscientious regard for fact; and though both qualities are excellent in their way, the most satisfactory development of the first can only be secured by a longer course of careful study than Mr. A. Severn seems at present inclined to bestow upon his work. Mr. Walter Severn, in his 'Anstey's Cove, near Torquay' (348), without aiming at any exceptional effect, has realised a certain solid artistic excellence which is absent from his brother's productions, and which is all the more creditable when we remember that it is due to the experience not of a professed artist, but—if we may be allowed to draw such invidious distinctions—of an amateur. We regret that we have been able to do little more than mention a few of the most remarkable works in this excellent Exhibition. It would be impossible, however, to conclude our notice without giving a brief but sincere word of praise to the admirable etchings of Mr. Edwin Edwards (713-719), who bids fair to do for our woodland scenery what Mr. Whistler achieved in the illustration of Thames wharves and shipping.

The large chalk drawing, 'An Adventurous Messenger' (716), by Miss Ellen G. Hill, is a most creditable performance, full of natural grace and palpable skill in handling; while the 'Autumn Fruit' (443), by Mr. Sidney Whiteford, and the studies of flowers and still life executed respectively by Miss H. Coleman and Miss C. Eastlake—both, we believe, very young ladies—show how far a modest and, in ordinary hands, a confessedly inferior branch of art may become ennobled by the refined taste and delicate execution of those who follow it.

## ILLUSTRATIONS.

### KURRACHEE HARBOUR.

ONE of the greatest wants in India, after that of improved communications, is an increase to the number of her ports, and the improvement of those that already exist. Not the least important work at present in progress in India is that undertaken with the view of improving the port and harbour of Kurrachee.

By reference to a map of India, it will be seen that Kurrachee is situated near the north-western extremity of Sindh; it is, moreover, the only seaport of that province available for vessels drawing more than ten feet of water, and its position is one of very great importance, whether regarded from a commercial, political, or military point of view. Thornton, in his *Gazetteer of India*, says, 'It has been laid down that a force stationed here, with detachments at Sehwan and Bukkur, might hold Sindh in complete subjection. In a commercial point of view, it may be defined the gate of Central Asia, and is likely to become to India what Liverpool is to England.' The late Sir Charles Napier, soon after his conquest of Sindh, became aware of the importance of improving the harbour at Kurrachee, and suggested measures for that purpose, one of which, the Napier Mole, still bears his name.

The one great want in Kurrachee harbour was that it should have been in direct communication with the river Indus, so that vessels coming down from Mooltan might have entered it without having to make the circuit round the mouths of the Indus. Had this been supplied by nature, its importance would have been largely increased; but in the absence of such communication the next best thing would undoubtedly have been to make an artificial cut for that purpose. A large trade already exists on the

Indus of produce and goods coming down to port for shipment, and in 1857 the Government Indus Steam Flotilla is stated to have been almost essential to the existence of British rule in the Punjab; for when the intercourse with the rest of India was cut off, they were the sole available means of communication with the sea-board, and they took up reinforcements to the army, military stores, and treasure. So long back as August, 1852, an officer of Government was deputed to examine the ground between Kurrachee and the Indus, with a view to the formation of a constantly navigable channel; but in an evil hour the project put forward by the Sindh Railway Company for a railway from Kurrachee to Kotree, on the Indus, was sanctioned, and the canal scheme abandoned. As a remunerative work the railway may be considered a failure, but it has a probable future before it in the event of the construction of the proposed Indus Valley line, of which it would form a part.

Kurrachee may thus be described as it existed before the commencement of any works for the improvement of its harbour. Situated near the base of the southern extremity of the Pubb or Brahooic mountains, on a level space intervening between them and the sea, the port is protected from the sea and bad weather by Manora, a bluff rocky headland, projecting in a south-eastward direction from the mainland, and leaving a space of about two miles between the extreme point and the coast to the east. In the harbour and within the entrance are some rocky islets, which are seen from the sea over the low isthmus connecting the point of Manora with the coast to the west. There is a good roadstead outside Manora, except during the south-west monsoons. At the entrance of the harbour is a bar, which had formerly but one fathom and a quarter of water at low tide, and two and a half or three fathoms at high water spring tides. About a mile inside the bar is an extensive bank, dry at low water; and between this and the western shore is the channel up the harbour. The harbour is spacious, extending about five miles northward from Manora Point, and about the same distance from the town of Kurrachee, on the eastern shore, to the extreme western point; but before the commencement of any of the improvement works a small part only of this expanse admitted large ships.

A recently published statement of the value of articles imported and exported at Kurrachee for the last twenty-one years shows that the total imports increased from Rs. 28,78,720 in 1847-8 to Rs. 2,73,66,886 in 1866-67, and in the past year 1867-68 the amount was Rs. 2,50,41,185. The total exports in 1847-48 amounted to Rs. 15,47,308; in 1863-64 the greatest exportations were made, the amount being Rs. 4,18,80,734; and in the past year the amount had gone down to Rs. 1,99,70,423.

In 1848 a lighthouse was erected on Manora Point, on the western entrance to the harbour; and in 1855, in consequence of the increasing importance of the place, two dredging vessels were expressly constructed for the improvement of the harbour, and a light draught steamer was provided for the purpose of towing vessels in and out. It may be worthy of remark here that the first voyage from England direct to the port of Kurrachee was made in 1852, by the ship 'Duke of Argyll,' of 800 tons.

In 1856 a committee was formed on the spot for the purpose of considering the best means of effectually improving the harbour, and their report, together with other papers on the subject, was forwarded to this country, and referred for the opinion of the late Mr. James Walker, C.E., who, before recommending the construction of any specific works, deputed Mr. W. Parkes, C.E., to Kurrachee, to make further surveys of the harbour, for which purpose that gentleman left England in September, 1857, and returned in the following May. In October, 1858, Mr. Walker submitted his report, in which he recommended the construction of the following works, estimated to cost about 660,000*l.*, viz.:

1st. The Manora Breakwater, to prevent the passage of sand from the westward, and to afford shelter from the worst seas at the entrance, and also to protect the foot of Manora Cliff from the wasting by the sea.

2nd. The Keamari Groyne, to prevent the waste of water to the eastward, and to confine the ebbing and flowing currents to the Harbour Channel, so as to direct them upon the Bar. Also to stop the movement of sand from the eastward, which Mr. Parkes stated was taking place to a considerable extent, and was narrowing the channel upon its eastern shore south of Keamari.

3rd.—The closing of Chinna Creek by a solid embankment, and conveying through the harbour and its entrance the flowing and ebbing waters to and from the portion of the estuary which lies to the eastward of the Napier Mole, thereby obtaining their scouring power upon the Bar and entrance channels, and forming an extension of the navigable channel up to near the town, which would be available for native craft.

4th.—New Docks and Basins for ships of large tonnage.

5th.—A Graving Dock.

Of the above-named sum, 259,000*l.* was for the improvement of the entrance alone; the works consisting of:—1. Manora Breakwater; 2. Keamari Groyne; 3. Napier Mole Bridge; 4. New Channel; 5. Chinna Creek Stoppage; 6. East Pier, in continuation of Keamari Groyne. Orders were issued early in 1860 for the execution of the 2nd, 3rd, 4th, and 5th of these works, as well as of the proposed native jetty and quay. These were proceeded with at once, and continued without interruption till December, 1863, when orders were issued to postpone the stoppage of the Chinna Creek, which was just about to be completed, in consequence of Mr. Parkes's opinion that the increased scour which had resulted from the carrying out of the Keamari Groyne should be allowed time to deepen the entrance to such an extent that any possible small temporary deposit should not be injurious.

Mr. Parkes, shortly afterwards, in January, 1864, again visited Kurrachee, and in his report he strongly advocated the immediate execution of the following works:—

1st.—The Manora Breakwater.

2nd.—The prolongation of the Keamari Groyne.

3rd.—The removal of hard material from Deep-water Point at the discretion of the Superintendent.

Orders were immediately issued for carrying out the 2nd and 3rd of these works.



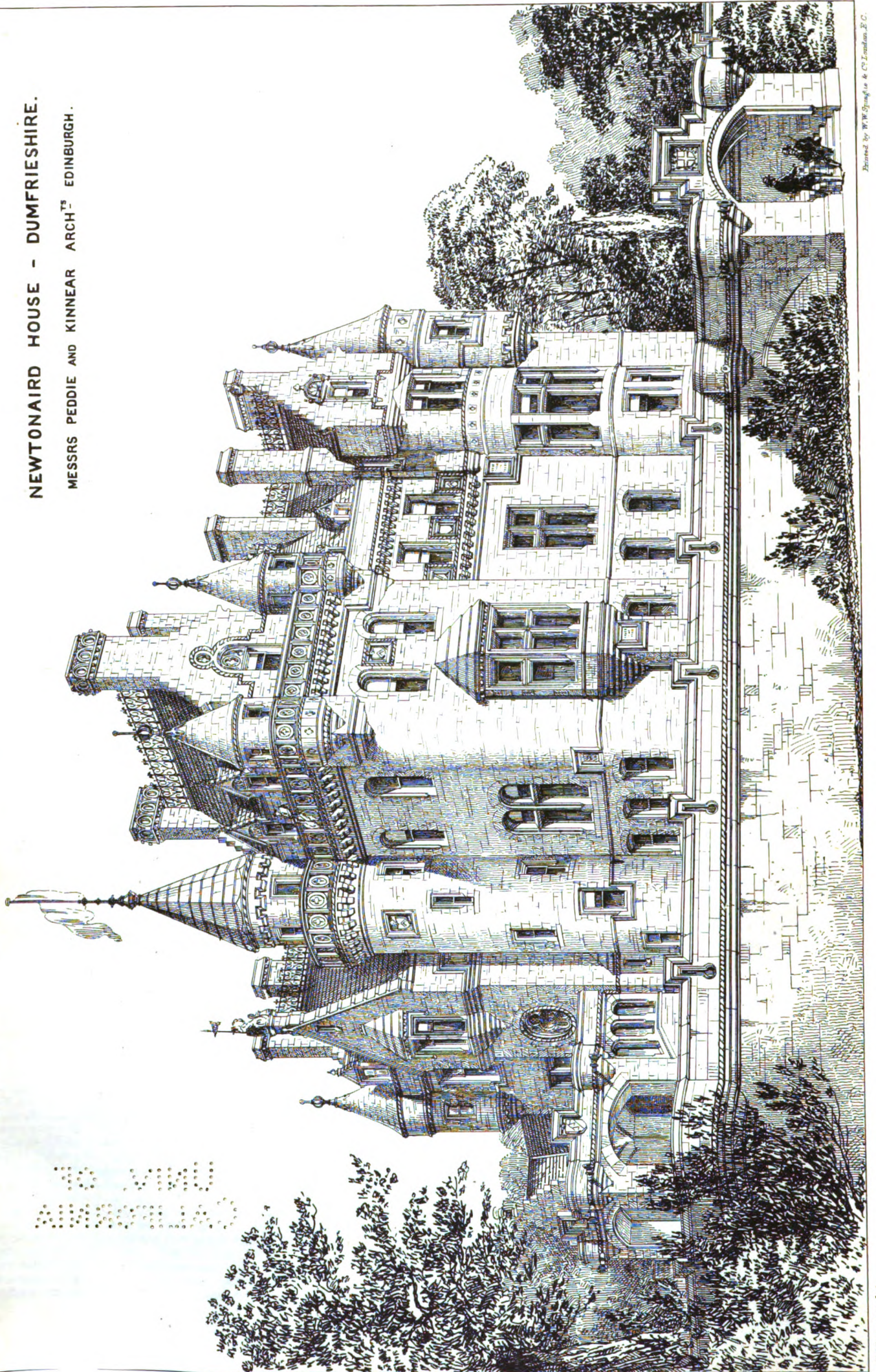
UNIV. OF  
CALIFORNIA



For Affixment, March 6<sup>th</sup> 1869.

**NEWTONAIRD HOUSE - DUMFRIESHIRE.**

MESSRS PEDDIE AND KINNEAR ARCH<sup>TS</sup> EDINBURGH.



Engraved by W.W. & C<sup>o</sup> London, E.C.

E. Windsor, Lith.





F. W. W. W. W. W. W.

Created by W. R. W. W. W. W. W. W.

Capital . Philæ .  
DRAWN BY R PHENÉ SPIERS.



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AUBURN LAO





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Objections having been raised by certain engineers attached to the Public Works Department in India against some of the works then in progress, the whole subject was referred to Messrs. D. & T. Stevenson, of Edinburgh, in December, 1865; and consequent upon their report orders were sent out in April, 1866, for the immediate stoppage of all works in progress, except those which were obviously calculated to serve some purpose of public utility, independent of the general improvement of the port, and which could not be left in their present state without any positive harm.

In the early part of 1868 a telegram was despatched to Bombay, ordering that the dredgers should be set to work on the bar outside the harbour; and, in consequence partly of the successful results obtained by that measure, the Secretary of State requested Mr. Parkes to proceed again to Kurrachee to examine the present state of the harbour. For this purpose Mr. Parkes left England early in June, arriving at Kurrachee on July 10, where he remained till August 1.

The only works, then, as appears from Mr. Parkes's report, which have yet been brought to bear on the general economy of the harbour are as follows:—

I. The Keamari Groyne, 7,400 feet long, constructed of stone upon the Keamari Sand-spit, having its top 2 feet 6 inches above monsoon high-water; commenced in December, 1861, and completed in April, 1863.

II. The extension of the same for 1,500 feet (known as the East Pier), commenced in May, 1864, and completed in October, 1865.

III. The removal of Deep-water Point, commenced in 1864, and carried on chiefly by natural scour, but partly by artificial means, during that and the two following years.

IV. A trained Groyne, constructed in 1866, running for 1,000 feet northward from the site of Deep-water Point.

The cost of these works has been 75,000*l.*, including their share of the cost of plant.

The effect produced upon the upper harbour has been to increase the water space at low water, since January, 1858, from 266,451,428 cubic feet to 299,341,289, being 32,889,861, or 12½ per cent. From thence to a little outside the end of the East Pier, and the end of Manora Point (without taking account of a deep hole which has scoured out close to the end of the East Pier), the increase of water space, from 1858 to October 1867, has been 11,685,540 cubic feet, or 20 per cent., making with the 12½ per cent. in the channel above an increase of nearly 14 per cent. on the whole length. This expulsion of sand has rendered the sectional area of the channel nearly uniform throughout; and altogether there has been expelled from the harbour 2½ millions of cubic yards of sand. Another result of the works has been that the courses of the tidal currents have been rendered much more regular, and at both flood and ebb they set up and down the harbour with great regularity and in the same channel.

The value of these results to the trade of the port may best be described by a statement of the fact that whereas, in 1858, not above 20 loaded ships of from 500 to 900 tons could be berthed in the harbour, there is now space for about 55 loaded ships of from 500 to 1,200 tons.

The effects produced on the bar and entrance to the harbour have varied somewhat during each monsoon, but it would appear that, in their most prominent features, the Bar and the Main Entrance Channel are now in a permanent condition. The Channel is as capable of passing large ships as it was in 1858; but whilst it has doubled in width, the Bar has lengthened out so as partially to neutralise that advantage. The lengthening of the Bar is due to the fact that out of 60,000,000 cubic feet of sand which have been discharged from the harbour, 1,000,000 have been deposited at the tail of the Bar.

The conclusion which Mr. Parkes draws from his observations is that a necessary condition of the existence of a direct and permanently deep channel is an effectual protection from that action of the sea which has so repeatedly thwarted the natural efforts made towards it. In order to provide this protection, the construction is recommended of a breakwater 100 feet to the eastward of Manora Flagstaff, running in a direction south by east for a length of 1,500 feet. This, however, would act merely as a protective measure, and the free use of dredgers over the bar is further recommended with the view to increase the channel. The admission of a portion of the Chinna Creek waters into the harbour by the removal of the dam at the Napier Mole Bridge is also advocated, not so much with a view to improving the entrance as for the convenience of trade.

These recommendations have all been sanctioned, and Mr. Parkes has been appointed Consulting Engineer to the Government for the works in this country. When they have been so far carried out as to give any appreciable results, we shall hope to be in a position to publish early information regarding the effects that may have been produced.

#### CAPITALS.

IN a previous article we described the bud-shaped capital of various proportions and detail, and the simple bell-shaped capital with the stems, flowers, and buds of the papyrus and lotus plants, slightly incised and coloured, which, with the so-called protodoric capital, seem to have served all the purposes of Egyptian architecture till the period of the Ptolemies; the fact being that (with the exception of numerous pylons, colonnades, and avenues of sphinxes, which were added afterwards) the numerous and vast temples built during the reigns of Rameses the Great and his successor, in the fourteenth century before Christ, were amply sufficient for all the wants of the Egyptian people; and it is not till the reign of Ptolemy Euergetes, at the beginning of the second century before Christ, that we find new temples in which any important modifications of the above-named capitals take place. In this second century before Christ, down to, and during, the occupation of Egypt by the Cæsars, other vast temples were erected, notably those of Edfou and Philæ, and a number of large and magnificent porticoes or vestibules, with numerous columns, were

added to older temples, as at Kalabshé in Nubia, Ombos, Esneh, Denderah, &c., in which buildings we find a series of the most beautiful capitals, both in form and decoration, which have ever been designed: they are of immense variety, scarcely two of them in the same temple being alike, and their decoration is invariably imitated from some arborecent production of the country. It is extremely doubtful whether in the designs of these capitals ought to be attributed to the influence of their Greek rulers; no traces of Greek ornament are found, and in the general application of the natural forms of trees and plants, these are far too little conventionalised to resemble Greek work. There is, perhaps, more elegance in the form and disposition of the temples themselves, though this would arise from changes in their institutions or customs, and the progress, though slow, in civilisation. In the example, an illustration of which we give, taken from the portico or long gallery in front of the temple at Philæ, the bell-shaped capital is decorated with a series of reeds or bulrushes, the flowers of which resemble some of the long grasses of our own country; these are represented on the under surface of the bell; the sheathing leaves of their stems branch off to the right and left, and the ligaments which bind the whole together are indicated under the capital and form its necking. For simplicity of form, elegance, and propriety of decoration, this capital is one of the prettiest examples to be found in Egypt.

#### NEWTONAIRD HOUSE, DUMFRIESSHIRE.

Newtonaird House, recently erected from the designs of Messrs. Peddie & Kinneir, of Edinburgh, for P. Smith, Esq., is situated about five miles from Dumfries. It stands on the south slope of a richly wooded hill, from which the park extends down to the river Cairn. The views from the windows of the living rooms are varied and extensive. The style of the architecture is that of the old Scottish manor house, modified to suit modern requirements—a style which harmonises more perfectly with the surrounding scenery than would be the case with any other. The exterior is of red sandstone courses from Locharbriggs quarries, about 12 miles distant, and the roofs are covered with large grey Lancashire slates. The principal floor, which is reached by a flight of steps from the entrance hall and carriage porch, contains two drawing rooms, library, and dining room, and service room, along the south and east fronts, and the principal staircase and a large business room on the other side of the entrance. The entrance hall is groined in the ceiling, with moulded and enriched ribs of white free stone, springing from corner shafts of the same material, with which the walls are also lined. The principal staircase has a roof with framed and moulded principals, and the ceiling of the dining room is richly panelled and moulded in oak. The ceilings of the drawing rooms and library are elaborately finished in plaster work in panels, and the oak doors and shutters of the principal rooms are elaborately carved in the panels. The first bedroom floor contains six bedrooms, besides dressing rooms and bath rooms, &c., and in the upper floors are nine bedrooms of various sizes. The ground floor of the main building contains the servants' hall, butler's pantry, wine and beer cellars, housekeeper's rooms, and such like accommodation; and in a lower building behind are the kitchen, scullery, larders, &c. The washing house and laundry are at the stable offices, which have been erected at some distance from the house in a corresponding style of architecture. The cost of the house, exclusive of the terrace wall and entrance to flower garden, which is not yet erected, has been upwards of 13,000*l.*

NOTICE.—The name of the Engineer of the Chicago Waterworks was given in error in our last as Mr. Desborough. It should have been Mr. Chesborough.

#### CONDITIONS OF BUILDING CONTRACTS.

RESUMING this subject where we left it last week—at the objections now raised against certain customary conditions of Building Contracts, let us take the very first words of one of the largest of building contracts now being performed—'The works shall be executed by the contractor according to the true intent and meaning of, &c. Do they not point to the fact that the real and obvious intent and meaning of words, figures, and drawings—which, remember, can be and should be ascertained before making the contract—is sometimes perverted, and that it is possible to introduce quibbles and questions into the best drawn specification? And what hardship is there in the words usually added, after stating that the drawings and specifications are intended to embrace all the information necessary, &c.:—'Should there appear on the face of the drawings any part not described in the specification, or should any work be described in the specification and not shown on the drawings, it is intended that the contractor should consider the same in the formation of his estimate as much as if the same had been particularly set forth in both?' Be it remembered that to describe in writing or by drawings the thousand and one little matters understood by this phrase, would involve volumes of superfluous writing and labour, and be in reality of no certain effect.

It is well known why such terms are necessary, and how easily they are complied with by every contractor in every work he undertakes; but why they should be omitted, or why any straightforward contractor should wish them to be omitted, is not so obvious to architects. It is well known how impossible it is, short of erecting the building, accurately to describe every small item, and how difficult to avoid all errors in one drawing not showing exactly the same view as another; but a contractor has no difficulty in ascer-

taining beforehand the exact amount of work required of him, and in providing in his estimate, if he be so inclined, for any amount of unforeseen accidents or contingencies. With regard to these and other clauses similarly framed, their effect has doubtless been so to abate certain evils aimed at, that perhaps, the original cause of framing them, and the necessity for them, are not now fully recognised. They consequently may at first sight have the appearance of encumbering the conditions, and of being not only useless, but absurd; yet it may be that many evils are only kept down by these regular standing protests against them. Let such repeated protests be removed, and it will probably be found that the old abuses will reappear and some new remedy will have to be devised hereafter, while astonishment will be expressed at the simplicity of those individuals who threw away without reflection such valuable protective clauses.

A most searching enquiry, and not a mere cursory glance, is necessary to determine how far any restrictions and regulations may be safely removed which have been framed for some wise end, and have always answered their purpose more or less. But to consider all this fully would occupy too much of our space, and we can only direct attention to a few points which seem to be more especially worthy of general consideration.

It appears strange to find amongst contractors a desire to prevent the architect attaching 'anything of a personal or legal nature' to the usual clauses of the specification, and to require that every common settlement between parties for the erection of a building should be a matter for the legal profession alone, and be settled in precise legal phraseology. It is at present rather the exception than the rule to employ a lawyer to draw up any contract unless for an exceptionally large matter; and in ordinary cases we are not aware that disputes are more frequent than where legal documents are provided, and parchment used instead of paper.

The simplest way, lawyers tell us when they are instructed to draw up a contract for building, is to embody in it the full specification and general conditions, and by adding a few phrases before and after these to make them part of the contract in due form. Judges and other high legal authorities have been known even to prefer doing without such forms in cases where they themselves are alone concerned, and have prescribed the simplest phrases possible, even asserting that the tender and a letter accepting it are quite sufficient for all purposes of contract. It is curious that this leaning towards rigid legal forms should be found on the side of contractors, and that complication rather than simplicity in such matters should be advocated by them.

One would have, perhaps, expected such a tendency amongst architects, who it might be supposed would naturally desire relief from any superfluous responsibility, and would be glad to have the trouble of arranging forms of contract—for which they seldom make any charge—put upon other shoulders. But practically they would always have to bear the same burden, for the lawyers would embody their phrases and be obliged to accept their dictation, simply because they, as lawyers, could not know all the circumstances without instructions. To give these instructions is both the duty of the architect as well as a positive necessity for him; and how the London contractors would propose to relieve him of such responsibilities does not appear. Perhaps they would institute the necessity for two lawyers—one appointed by the architect or his client, and one by the contractor (both to be paid by the client, we suppose, or, at least, in some way out of the 'job')—and to dispute the terms between themselves, in the same way that two surveyors arrange the quantities. That this would be the approved arrangement seems likely, for it is proposed that there should be two architects to every building—one to be the arbitrator, or consulting architect, as he might be called if arbitration were frequent, and one to be the actual designer of the works, but without power to see them properly executed, except by appeal to the arbitrator.

How all these different authorities would act with, or would counteract each other, or how the client would approve of these additional complications, and the multiplication of costs, is a question worth consideration. It is even more important to enquire how the present position of the architect—as master builder or controller of the works—would be affected by so much additional weight being held in readiness and capable of being brought to bear, if occasion require, for or against his judgment and authority. But we can have no hesitation in saying that under the proposed arrangements it would be impossible to maintain among architects the same independence and high feeling and that judicial character, which we are proud to say are the characteristics of those who are looked up to as the chief representatives of the architectural profession. Far be it from us to say that it is the object of any contractor to degrade the position of the architect; but in effect the present proposals would do so if all were adopted.

To such builders as appreciate the assistance and support often given by the architect, we would commend the foregoing remarks bearing upon the position of the profession, and upon the probable result of adding to the already sufficiently complicated nature of building affairs.

(To be continued.)

## PARLIAMENTARY PROCEEDINGS.

### The Thames Embankment.

**Lord Elcho's Committee on the Thames Embankment.**—The following members form the above Committee:—Lord Elcho, Mr. Layard, Mr. W. Cowper, Lord J. Manners, Mr. Bentinck, Mr. Sclater-Booth, Mr. Tite, Mr. W. H. Smith, Mr. Gregory, Mr. Beresford Hope, Mr. Buxton, Viscount Bury, Captain Dawson-Damer, Viscount Sandon, and Mr. McClean. It is understood that they will not sit till after Easter.

On Friday, February 26, a petition was presented by Mr. Watkin Williams, from practising barristers of the two Temples and Lincoln's Inn, in favour of the Thames Embankment site, instead of the Carey Street site, for the erection of the new Courts of Justice.

### Government Contractors and Seats in the House.

On Tuesday, March 2, in answer to a question by Mr. Rylands, Mr. GLADSTONE said that her Majesty's Government are aware that the working of the law with respect to Government contractors is not altogether satisfactory, but they do not see their way at the present moment as to the precise manner of dealing with the question, and cannot promise to introduce a measure upon the subject.

### The Recent Accident at the Bhone Ghaut.

Mr. G. DUFF said, in answer to Sir Stafford Northcote, that a commission of inquiry had been appointed, and that that commission had power to take evidence with regard to the circumstances of the accident. Meanwhile, precautions had been taken by the company to prevent passengers entering upon the incline of the railway.

### Bayswater Market and Baths.

On Wednesday, March 3, the Bayswater Market and Baths Bill, opposed by Mr. Thos. Chambers, who was supported by Colonel Sykes, was rejected.

### Metropolitan Street Tramways.

This Bill provoked a long debate. Its rejection was moved by Mr. Pease on general grounds of inconvenience and danger, and supported by Mr. Locke; Mr. Maguire defended the system, following the lead of Captain Grosvenor; Mr. Laird stated that similar tramways had, from being objectionable, become popular and necessary in Birkenhead. On a division, the second reading was carried by 209 to 98.



Correspondents are requested as much as possible to make their communications brief. The space we can devote to Correspondence will not usually permit our inserting lengthy communications.

### ARCHITECTURAL EDUCATION.

SIR,—Mr. Edis has, I see, thought it right to correct the mistake made in his last letter about the eminence of the French Professors; although without acknowledging that it was from me he first learnt his error, and that the whole of his information was obtained directly also from myself. There is another matter on which I also gave him some information, but he has quietly passed that by. I refer to my knowledge of the pupilage system. Mr. Edis says, 'his training upon the pupilage system naturally leads him to lean to that, the English system of training.' But Mr. Edis is wholly at sea with reference to my acquaintance with English training: though three years in the school of Paris, I have been five years either as improver or as clerk in English offices, one of which was, I believe, the third largest in London. I have, in addition, had the advantage, which is more than Mr. Edis can say, of having passed through all the classes of the Association, and of having come in contact with an immense number of pupils far more intimately, so far as their elementary knowledge is concerned, than could ever be done as principal of an office. I was one of those who founded the Voluntary Examination Class in the beginning of 1863, and was absent from that class (which was continued all the year round) *once* only. The experience which I gained at that class first caused me to question the efficiency of the English pupilage system; from that time till now I have been adding to that experience, the summary of which was published in the Alliance Report. I leave it, Sir, to your readers to say whether my conclusions are correct. It should also be remembered, I think, that I was not the only delegate who signed the Report in its entirety.

R. PENNÉ-SPIERS.

### NEW BUILDINGS AND RESTORATIONS.

**Ecclestone.**—The north aisle of the church has been reopened; and, after an interval scarcely exceeding three months, the church has been restored almost as it was before the fire.

**Wombridge, near Shrewsbury.**—Proposed Church Enlargement.—Steps are being taken for the raising of a fund for the enlargement and improvement of the church of this parish. It is proposed to more than double the accommodation on the ground floor of the church.

**St. Saviour's Church and District, Preston.**—Munificent Gift.—New schools for St. Saviour's Church and district are about to be erected. Mr. Hibbert, architect, has already been instructed to prepare plans, and the schools will be erected on land belonging to Mr. Newsham immediately adjoining the church.

**The Great Skelton Viaduct.**—This vast structure carries the new line of the North-Eastern Company from Hull to Doncaster (Staddlothorpe and Thorne) over the Ouse, and is now so far complete that a train conveying the officials of the company and the engineer, Mr. T. E. Harrison, last week passed over it. The viaduct is one of the greatest engineering achievements of the age. Not only did the foundations present almost insuperable difficulties, but the superstructure presents extraordinary features. The comparatively low level of the new line necessitated an opening bridge, and the moveable portion so provided for the accommodation of the river traffic is the longest of any work of the kind in England. At the point of crossing the Ouse is about 800 feet wide, and the moveable part of the over-channel bridge is not less than 232 feet. This immense length crosses the deepest part of the river, turns on a stupendous mid-river pier, and is opened and closed at will, hydraulic power being applied. The most complete signalling has been provided to guard against possible accident to trains while



the bridge is open for the passage of ships. The entire structure is carried by seven spans of solid fish-backed girders, resting upon massive iron piers, forced to a great depth into the river bed through various layers of river silt, peat, and clay. The structure is one of imposing appearance, and is a great triumph of engineering skill. The line is double throughout, and is nearly ready for traffic. It will be opened for the Hull and London summer traffic this year.

**The New Viaduct on the Midland Extension to Barnsley.**—The new extension of the Midland Railway from Cudworth to Barnsley, which is rapidly drawing near to completion, embraces one of the finest pieces of engineering and architectural skill which is to be found upon the Midland system. The line, which is about four miles in length, crosses the valley of the Dearne at its greatest depth a short distance from the too-well known Oaks Colliery, where 361 persons lost their lives, many of whose bodies are still unrecovered. The crossing of the valley at a point where it is intercepted by the Pontefract Road and the Dearne and Dove Canal presented difficulties of no ordinary character. These were, however, not only overcome, but a structure both picturesque and substantial has been put up. The work, which was of a very formidable character, was let separate on March 18, 1863, to Messrs. Nicholson & Sons of Leeds so far as the masonry works were concerned, and the ironwork to Messrs. Butler & Pitt of Leeds. The foundations for so great a structure were laid with great care, and occupied some considerable time, there being no fewer than fourteen piers. The first stone was laid on September 11, 1863, by Mr. Nicholson, in the No. 6 pier. The total length of the viaduct is 362 yards and 1 foot. It is of sufficient width to admit of a double line of rails, and is surmounted by a railing weight. The viaduct, when viewed from almost any point, has a picturesque appearance. It consists of three stone piers, one 41 feet, and a third 10 feet long with two abutments, one of which is 45 feet, and the other 10 feet in length. There are no fewer than thirteen openings, ten of them 60 feet in length, two 90 feet, and one 36 feet. The estimated cost is said to have been between 30,000*l.* and 40,000*l.* The whole is of a lofty, light, and airy appearance. The greatest height from the valley is 96 feet 6 inches. So pleased were the Midland directors with the structure, that they have caused it to be photographed from several stand-points in the Dearne Valley.

**St. Swithin's Church, City,** is to be re-opened (after considerable alterations and repairs) on the fourth Sunday in Lent.

A new Primitive Methodist Chapel is about to be erected at Sowerby Bridge. The building will be of the Corinthian order, having two columns and two pilasters in front, with ornamental capitals. The plans of Mr. Samuel Utley, of Halifax, have been accepted, and the works will shortly commence.

A new Church at Warrington, dedicated to St. Anne, was consecrated by the Bishop of Chester on Saturday last. It has been built at a cost of 5,200*l.*, of which 2,500*l.* has been contributed by Mr. Beaumont of Oxford Hall; the remainder has been raised by public subscription. The church is situated in a very poor neighbourhood, and the sittings will be entirely free. Five services will take place on Sunday, and one on each week day. The church is built of red brick, with coloured bands, with a noble tower at the south-east angle. The west window contains some good tracery. Internally the church has a fine appearance, notwithstanding the absence of decoration. The roof, which is in one span, springs from piers projecting from the side of the walls, the tops of the pillars being ornamented with encaustic tiles. It is intended to paint the spandrels of the arches. The nave contains seats for 500, with open benches of Baltic deal. The pulpit is of Derbyshire polished limestone, with slate panels, painted with Scriptural designs by Hardman of Birmingham. The chancel is raised above the level of the nave, and is apsidal in form. The floor is of encaustic tiles. The organ is placed under the tower on the south side, and a corresponding recess on the north side is devoted to the vestry. The organ is by Hopkinson of Burstall, and cost 300*l.* The edifice has been constructed from the designs of Mr. John Douglas of Chester, the builders being Messrs. Gibson of Warrington.

## NOTES ON NOVELTIES.

WE propose giving, under the above title, notices of such novelties as appear to us to deserve the careful attention of our readers. These notices will not, in any case, consist of accounts received from the inventors, patentees, or agents who may be engaged in bringing a novelty before the public, nor will they be based solely upon the statements which such persons may make. They will be obtained from independent sources, and usually will only be written after the invention or improvement which forms the subject of the notice has been personally examined into by one of our staff as fully as the circumstances of each case permit.

### Moore's Embossed Glass.

This invention has been known for years to a few architects and others, who have used it from time to time, as Rees's glass. It is now, however, being brought more prominently before the public, having passed into the hands of Mr. Moore, and will probably for the first time be really brought into general use.

If designs are faithfully worked out by the present manufacturers when given to them to execute, and if a variety of well-designed diapers and ornaments are prepared and kept in stock, we think that this glass may be found an extremely useful material for employment in lights where colour and ornament are desired. It is embossed with various patterns, and can be had in different colours, differing very considerably both in its lightness and the brilliancy of its effect when light passes through it from any other embossed glass with which we are acquainted, and the difference is in its favour. Mr. Moore has shown us some specimens in which the plain

portions of his glass are ground. This, no doubt, adds considerable brilliancy to the raised pattern, but we question whether the general character of a window made up of such glass would be as good as where the natural surface of the glass is less undisturbed.

### Brooke's Universal Blind and Shutter Fastener.

This is an American invention, by which an outside blind or shutter may be opened or closed from the inside, and held in any position desired, either closed, fully open, or at any intermediate position, in all of which it will be securely locked. Attached to the frame of the blind is a rod upon which slides a sleeve pivoted to the outer end of an arm secured to the axis of a wormgear seated in a recess in the window sill, and gradually rotated by a worm, the whole covered by a metallic plate. The worm, or screw, is turned by a shaft and an ornamental handle inside the room. As this handle is turned, the gear is slowly rotated, and its arm, sliding on the rod or bar, throws the blind back or forward, according to the direction of the rotary motion, opening or closing it as desired. In whatever position the blind is left it is immovable, except by having recourse to the handle, or crank, inside the room. The device is capable of being made highly ornamental as well as useful, and might easily be applied to casement windows. For this purpose it seems to be likely to answer better than many inventions of a similar nature in common use in this country. Samples to be seen at the office of G. L. Taylor, 38, West Street, Trenton, N. J., United States.

### Bicknell's Patent American Window Weight Pulley.

This invention is simply a segment—one half—of a pulley; but the object intended is that attained by the ordinary revolving pulley. The stile of the window frame is made to contain a semi-disk or half circle, made of glass, grooved on its periphery to receive a cord, and having shoulders, or rebates, on its sides and on the bottom to hold it in place. A thin plate of metal is screwed on the window frame to conceal that portion of the mortise necessary only to admit the glass segment. No screws, pivot, plate, or recessing, beyond the slot through the stile, necessary for ordinary pulleys, are required; the segment being merely passed in from the front, and then being held securely by the ledges on its sides and bottom resting against the sides of the mortises.

The cord sustaining the window weight merely slides in the groove of the segment over the smooth glass surface, and all creaking of pivots or axles so annoying to the ill or nervous, and all necessity of occasional oiling, are obviated.

The inventor claims the following advantages:—Simplicity in construction and application; non-liability to derangement, no screws; no letting in of face-plates; less expensive than other devices; greater friction on the cord, but less wear, requiring a less proportionate weight to balance the sash, and giving a longer life to the cord; no rusting, and always in order, not being affected by the weather.

This device was patented through the Scientific American Patent Agency, November 3, 1868, by Alfred Bicknell. For further information, address American Glass Pulley Company, 56 Congress Street, Boston, Massachusetts, United States.

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

### Highlanders of Scotland.

Under the above title Her Majesty's publisher, Mr. Mitchell, of 33 Old Bond Street, is preparing for publication a work containing portraits illustrative of the principal clans and followings, and the retainers of the Royal Household at Balmoral. We mentioned in our last number the fact that, by Her Majesty's permission, the water colour drawings which Vincent Brooks is engaged in reproducing by lithography for this work were exhibited by Mr. Mitchell. The plates will be thirty-one in number, comprising the Royal Stuarts, Athole men, Argyle men, Breadalbane men, and thirty other clans. If the lithographs do justice to the spirited heads and hands drawn by Mr. Kenneth Macleay, R.S.A., who took the portraits by express command, the work will be a noble one. It is to be in two volumes, demy folio, containing a copious notice of each illustration from authentic sources. The tartans of each clan are carefully delineated: the badges and the slogans, or war-cries, are enumerated, and the series of notices will be such as almost to furnish a *précis* of the history of Scotland.

### Sculpture recently added to the South Kensington Museum.

Among the late purchases made by the authorities of South Kensington may be noticed a small crucifix of carved wood. We have said that it may be noticed: perhaps it would have been better to say that it may be overlooked; for neither its size nor its merit are so great as to demand admiration from all passers-by. Moreover, the object is but a copy, though a very skillful one. It, however, represents a school of sculpture little known in this country—that of Mayence and the Upper Rhine. Though the composition, consisting as it does of the crucified Saviour, with the ordinary attendant figures of the Virgin Mary and St. John, leaves by its nature small scope for originality, a singular variety of treatment is noticeable. The body of Our Lord is fixed upon a withered tree, the arms being fixed to two branches, and thus giving to the figure the Y shape familiar to the student of early art, but pertinaciously opposed by later, and particularly by Italian sculptors and painters. This may probably be a relic of the old Byzantine influences, which in the eighth century so deeply impressed the German provinces near the Rhine, and is certainly remarkable from its total disregard of the revered type of the Cross, and also, it must be added, of the facts recorded in the Gospels. Two angels flying around the stem of the tree hold a ribbon label, intended, no doubt, to receive an inscription, which, however, does not appear. In a hollow beneath the tree is a group of a lion gazing earnestly upon his prostrate and semi-animate cubs. This is one of the more recondite emblems of the Resurrection, typified by the

lion breathing on his young on the third day, and thus bestowing on them life and eyesight. The original work belongs to a private gentleman of Cologne, and the present copy has been obtained by the judicious energy of Dr. Franz Bock, Canon of Aix la Chapelle, well known as an antiquary and collector.

#### Decoration of Churches of Paris.

The following sketch of the commissions given to sculptors and painters for the new church of St. Augustin will give an idea of the amount of art work provided by the authorities. MM. Jouffroy, Jaley, Cavalier, and Bonnassieux, sculptors and members of the Academy of the Beaux-Arts, were entrusted with a bas-relief of Christ and the Apostles for the façade, a statue in marble of the Virgin Mary, figures of Saint Augustin and Saint Thomas of Aquitaine for the façade, and a bas-relief for the porch. In addition to these are, two angels for the cross on the pediment by M. Schroeder; four groups of children with candelabra, by Carrier-Belleuse and Cordier; symbols of the Four Evangelists, by Jacquemart; a second bas-relief for the porch, by Lequesne; two figures in bas-relief in the tympanum of the great arch; and eight figures of saints in stone by as many sculptors. All the preceding sculptures are without the building; within it are four groups of angels supporting candelabra by MM. Millet aîné, Gilbert, Schönewerk, and Travaux; and figures of Saint Mary and Saint Martha, by Leharivel-Durocher and Perrey.

The paintings consist of four subjects in the pendentives, representing the evangelists accompanied by angels, by M. Signol, member of the Academy; sixteen large figures of prophets and fathers with cherubim, by Bézard; six subjects of three figures each in the vaultings of the side chapels, representing events in the lives of Saint John, Saint Peter, and Saint Paul, by Bougereau; two subjects of three figures each at the entrance of the Lady Chapel, by Brisset; the three theological virtues, in enamelled lava, by Paul Balye; painted windows by Marechal of Metz and Claudius Lavergne. In all thirty-one commissions.

## General.

**Accidents from the Falling of Chandeliers and Gaseliers** not uncommonly occur, and are always dangerous. Writing on this subject to the *Times* on February 23, 'A Builder' states that it is only a question of time as to the certain fall of gaseliers, the consequent escape of gas, and a very probable explosion, so long as the weights which hold up gaseliers are supported by brass chains. Brass chain is sure to decay by the action of the atmosphere, and the only wise remedy is to discard the use of brass chain altogether and to substitute copper chain. In support of this view Dr. Percy, who is a high—perhaps the highest—authority, writes that he has seen brass wire, about an eighth of an inch thick, after having been subjected to occasional vibration while stretched, become so tender and brittle in the course of a few weeks as to be capable of being easily broken into short pieces between the fingers. 'I have also,' he adds, 'seen the links of brass chains, which have been employed in suspending gaseliers, undergo a similar change, though in a less degree.' These effects, so far as Dr. Percy has observed, have been due to spontaneous physical changes in the metal, and not to atmospheric corrosion. It is well known that other alloys undergo singular spontaneous changes. Brass which has become tender and brittle may, by annealing, be rendered as tough and flexible as at first. It appears that only certain varieties of brass are liable to be thus affected; and, if so, the explanation will probably be found in the presence of foreign matters in small proportion. The Doctor adds that he has never seen copper become tender and brittle like brass.

**A monument** of the late Mr. Richard Oastler, the successful advocate of the 'Ten Hours' Bill,' is to be uncovered by the Earl of Shaftesbury, at Bradford.

**The Society of Arts** have nominated a large and influential Committee on the subject of the Thames Embankment, which will hold its first meeting at the house of the Society on Tuesday next.

**A frightful accident** recently occurred at the goods dépôt of the Great Eastern Railway, Brick Lane, Whitechapel, by which the lives of four men were sacrificed, besides causing serious injuries to several others. The cause appeared to arise from a gradual settlement of the foundations of two or three of the arches of the railway. The crevices in the brickwork were perceptibly widened, and great exertions were used to prevent the falling in of the arches. At about a quarter to four o'clock, without the slightest warning, the whole mass gave way, and girders, brickwork, railway, and a heavy goods waggon, which was left on the top of the arch, were precipitated in a mass upon the unfortunate workmen beneath. Seven or eight of the men rushed to the roadway, and so saved their lives; a few ran in an opposite direction, and were injured in various ways; while four, who had no time for movement, were instantly buried in the *débris*. As soon as the gravity of the accident was realised, the whole of the men employed in the station were at once set to work to extricate the men. The waggon was, by great exertion, lifted from the mass of rubbish, and various excavations made in spots where it was thought probable the men were buried. In an incredibly short space of time, considering the labour involved in the task, three bodies were extricated and conveyed to the dead-house at the Bethnal Green Workhouse. The one man missing it was found impossible to extricate for some hours, in consequence of the great transverse girder, with a mass of solid brickwork, having fallen on him. At half-past nine o'clock, however, a large pit had been dug under the girder, and the body was taken out. Meanwhile, the greatest excitement prevailed in the neighbourhood, and all the approaches to the immense station were besieged by clamorous crowds anxiously inquiring for their friends at work on the establishment. Thanks to the excellent police arrangements, order was maintained, and the work of extrication proceeded uninterruptedly. An inquest has been held, and adjourned in order to obtain the evidence of an experienced engineer as to what may have been the causes of the accident.

**Mr. Buskin** will lecture at London University College on Tuesday evening next on Greek Myths and Legends. Tickets of admission are on sale at the offices of the College, and the proceeds of this, as of the other monthly lectures now delivering there, will go towards the Building Fund of the College.

**A bust of the late Sir Francis Burdett**, executed by Mr. Adams, of Sloane Street, has been presented by his daughter, Miss Burdett Coutts, to Westminster School.

**A magnificent painted window**, representing the Crucifixion, has just been placed in St. Paul's Cathedral by the Drapers' Committee. The cost of the window was 900*l*.

**It is proposed** to place a stained glass window in Knaresborough parish church in memory of the late Sir Charles Slingsby.

**Some correspondence** has taken place in the daily papers with regard to the present state of the Hammersmith Suspension Bridge. The question has arisen from the approaching annual boat race between the two Universities; and as a more than ordinary strain always occurs at these competitions, it is only right for the safety of the public that an engineer should be sent down by Government to report on the stability of the bridge, and, if necessary, use proper means to prevent an accident.

**A Stained Window** in memory of the late Archdeacon Thorp was unveiled last week in Durham Cathedral.

**Mr. Robert Braithwaite Martineau**, one of the most accomplished and amiable English painters, died of heart disease on the 13th ult., after an illness of a few weeks, which until recently was not considered important. His 'Last Day in the Old Home' made a great impression at the International Exhibition of 1862. Mr. Martineau was born in 1826.

**It is now decided** that there will be only one Italian Opera Company during the ensuing London season. The joint performances by the companies of Mr. Gye and Mr. Mapleson will take place at Covent Garden. Signor Arditì is to be the conductor. What use is to be made of the rebuilt Opera House in the Haymarket does not appear to be decided.

**The failure** was announced at Birmingham on Thursday of Messrs. Thos. Short & Son, an old and respectable house in the timber trade. The liabilities will, it is said, amount to between 40,000*l*. and 50,000*l*. The estate will, it is anticipated, turn out favourable.

**At the sale of the late Lord Ashburton's china**, some Chelsea specimens (curiously shaped bottles) fetched 100*l*. each, and three Sèvres (one much injured) 1,310 guineas; but the gem of the collection, the Montcalm vase, one of two presented by Louis XV. to the defender of Quebec, and a beautiful example in Rose du Barry, sold for 1,600 guineas. The entire collection fetched 7,520*l*.

**The great engineering undertaking** of forming a direct line of railway between the south of Scotland and the west coast of Cumberland by means of bridging the broad estuary of the Solway Firth is fast approaching completion. The earthworks are finished; the masonry also; the viaduct has been entire for some time, and the permanent way has been laid for sixteen out of the eighteen miles of the line. The principal work remaining to be done is ballasting, the formation of the junctions, and the stations. The wet and stormy weather of the winter has very much retarded the progress of the contractors, who had hoped to be quite finished with the work by this time. The distinctive feature of the line is the viaduct across the Solway. At the point where the railway crosses the Firth, the distance from shore to shore is 2,544 yards, or a mile and between three and four furlongs. Of this stretch nearly 600 yards are composed of sea embankment, and the remaining 1,950 yards consist of the iron viaduct.

**The block of buildings** at the south end of the present bridge, known as Tillotson's Buildings, is being pulled down, in readiness for the New North Bridge at Halifax. It is proposed to put up a portion of the new edifice before the old one is pulled down.

**The Wesleyan Chapel** at Gomersal has been re-opened. The building was erected in 1827, but the condition of many parts had become so bad that immediate repair was found to be necessary.

**A terrible calamity** at St. Patrick's Hall, Montreal, Canada, has occurred during a concert and ball given in the building. The roof, which was of massive iron, fell with a terrible crash, seriously injuring many persons. The accident is attributed to the hasty manner in which the hall was erected.

**The Bishop of Elphin** is vigorously prosecuting his project for the erection of a cathedral in Sligo town, and appeals are being made to the inhabitants of Dublin and other places for funds.

**The collection of the late Dr. Goldschmidt**, of Frankfort, which occupied more than half a century in getting together, was lately dispersed by the auctioneer's hammer in Paris.

**Brigham Young** has had a revelation that he must dig a canal from Salt Lake City to Salt Lake Valley. It is stated that he intends to commence the work in the Spring.

**A Statue of Massena** is to be inaugurated at Nice in the Place du Paillon, on May 16 next, the anniversary of the birth of the hero who, in 1799, at Zurich, saved France from an invasion.

#### MEETINGS OF TECHNICAL AND LEARNED SOCIETIES.

**INSTITUTION OF CIVIL ENGINEERS.**—Tuesday, March 9, at 8 P.M. 'American Locomotives and Rolling Stock,' by Mr. Zerah Colburn, M. Inst. C.E.

**ASSOCIATED ARTS INSTITUTION.**—Saturday, March 6, at 8.15 P.M. 'On Criticism,' by Solomon A. Hart, Esq.

**ROYAL INSTITUTION.**—Tuesday, March 9, at 3 P.M. Rev. F. W. Farrar 'On Comparative Philology.' Thursday, March 11, at 3 P.M. Dr. H. Power 'On the Eye.' Friday, March 12, at 8 P.M. Professor Abel 'On Naval and Military Applications of Electricity.' Saturday, March 13, at 3 P.M. Professor Odling 'On Hydrogen and its Analogues.'

EDITORIAL NOTICES.

No communication can be inserted unless authenticated by the name and address of the writer, —not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

Our readers are invited to address us on subjects of interest to themselves or the public. We shall be always ready to insert letters asking for a solution of any suitable questions of a professional or practical nature, and to receive replies to such enquiries.

PUBLISHER'S ANNOUNCEMENT.

Advertisements cannot be received for insertion later than 2 P.M. on Thursdays.

Temporary Office, 4 Monument Yard, London.—GILBERT WOOD, Publisher.

THE GAZETTE.

PARTNERSHIPS DISSOLVED.

Goodyear Brothers, Barnsley and elsewhere, joiners (as far as regards G. & W. Goodyear); B. & J. Longbottom, Brighouse, Yorkshire, stone merchants; H. Newman & Co., Birmingham, wholesale hardware dealers; G., J., & A. Brook, Bradley, near Huddersfield, masons (as far as regards A. Brook).

DECLARATION OF DIVIDEND.

Stevens, G., Newton Abbott, builder—further div. on new profits of 1s. 1½d., any Tuesday or Friday, at Mr. Carrick's, Exeter.

BANKRUPTCY ANNULLED.

Trueman, Charles William, Whitby, jet ornament manufacturer.

BANKRUPTS.

Notices of Adjudications and First Meetings of Creditors. To Surrender at the Bankruptcy Court, London.

Al'en, David, late of Mitcham, builder, March 19, at 12; Hicks, F., High Street, Whitechapel, and Bow, builder, March 15, at 1; Jones, Wm., Lavender Hill, Wandsworth, plasterer, March 15, at 2; Wenham, George, Woolwich, bricklayer, March 18, at 2; Wright, James, late of Sidmouth Terrace, Commercial Road, builder, March 19, at 11. To Surrender in the Country.

Bailey, H., Northampton, master plumber, March 13, Northampton; Banfield, John, Newport, Monmouth, carpenter, March 16; Newport; Jennings, George, Bristol, carpenter, March 19, Bristol; Moore, Joseph, Leeds, joiner, March 15, Leeds.

TENDERS.

RHYL DISTRICT WATER COMPANY.—For Providing Valves and Special Pipes, and for Laying Cast-iron Water Pipes. Charles H. Beloe, Esq., C.E., 22 Lord Street, Liverpool. Contract No. 3. For Valves and Special Pipes:—

Guest & Chimes	£333 11 5
Hamilton, Woods & Co.	293 9 6
Edmund Sharp	265 13 8
Laidlaw & Sons—Schedule of Prices	0 0 0

Contract No. 4.—For Laying Cast-iron Water Pipes:—

Abraham & Richards	£3,755 0 0
William Burrows	2,616 0 0
Thomas Stone	2,355 0 0
G. George	2,174 8 1
Pearson Lee	2,100 0 0
William Francis Jones	1,969 9 0
Naylor Brothers	1,950 0 0
John Taylor	1,862 4 10
William Chester	1,767 0 0
Scott & Edwards	1,653 13 2
John Conway, jun. (Rock cutting)	1,626 0 0
2s. per lin. yard extra	
Kellett & Hall	1,559 6 6
Dixon & Sleight	1,526 10 0
Fawkes & Mand.	1,513 15 0
Walker & Taylor	1,250 0 0
James Stevens	1,220 0 0

BATLEY.—For the Erection of a Chapel in Park Road, Batley, for the Christian Brethren Society. Sheard & Hanstock, Architects, Batley.

Preston & Webster, Masons	£420 0 0
Robert Ibberson, Joiner, &c.	549 10 0
Steers & Stocks, Slaters, &c.	47 16 0
Arthur Kitchingman, Plasterer	78 10 0
Matthew Lobley, Plumber	20 0 0
William Kerahaw, Painter	24 0 0
	£1,139 16 0

Five Houses and Shops in the Fulham Road, Chelsea, for H. G. Renshaw, Esq. Mr. Lacy W. Ridge, Architect. Quantities supplied by Mr. L. C. Hiddett:—

Gammon & Sons	£7,204 0 0
G. W. Richardson	6,995 0 0
G. Williams & Son	6,967 0 0
W. Webb & Sons	6,750 0 0
J. M. Macey	6,744 0 0
Adamson & Sons	6,625 0 0
C. N. Foster	6,540 0 0
Scrivener & White	6,283 0 0

For New Infirmary, and other Additions at the Basford Union, Nokin. Mr. S. J. Barber, of Eastwood, Architect:—Mr. G. Hopewell (accepted) £7,997 0 0

For New Church at Webbeath, Bromsgrove, for The Right Honourable The Baroness Windsor. Frederick Freedy, Architect. Quantities furnished by Messrs. Goodman & Vinnall:—

Clark & Smallwood	£2,825 0 0
Whately	2,479 16 0
Bapley	2,351 8 6
Jones	2,343 10 0
Field	2,217 0 0
Nelson	2,062 0 0
McCann & Everal (accepted)	2,019 10 0
Stone principally given.	

BATLEY.—For the Erection of a Warehouse, Houses, Offices, &c., at Bulrush Mills, Batley, for Messrs. Talbot, senior, & Talbot. Sheard & Hanstock, Architects.

Thomas Riley, Mason	£801 0 0
Do. Slaters	120 0 0
John Bagshaw, Ironfounder	40 0 0
J. W. Hey, Plasterer	28 10 0
George Jovett, Joiner, &c.	512 0 0
Matthew Lobley, Plumber	26 0 0
	£1,517 10 0

For Rebuilding Chancel and Restoring Parish Church of Kettlestone, Norfolk. Frederick Freedy, Architect:—

Turner & Sons	£1,203 19 0
Brown	1,009 0 0
Cornish	1,008 7 0
Barrell & Son (accepted)	921 10 0

APPOINTMENTS VACANT.

INDIA.—July.—Forty Appointments in Engineer Establishment of Public Works Department in India. Mr. W. T. Thornton, Secretary, Public Works Department, India Office.

BRACKLEY.—March 23.—For appointment of a Surveyor. Salary, 175*l.* per annum. Mr. Arthur Weston, Clerk to the Board, Brackley, Northampton.

COMPETITIONS OPEN.

ROYAL ACADEMY OF ARTS.—National Gallery. For the best painting in Oil—or Model and Design in Painting, Sculpture, and Architecture. The Gold Medal and the Discourses of Presidents Reynolds, West, &c.; and for the best Copies of Drawings, Models of Life, the Antique in Landscape Perspective, &c. The Silver Medals, &c. November 1.

ROTHERHAM.—March 15.—For Plans, &c., for erecting a Public Hospital and Dispensary. A prize of 75*l.* is offered for the best design, 50*l.* for the second, and 25*l.* for the third. John Barras, hon. secretary, Rotherham.

CORPORATION OF MANCHESTER.—ALEXANDRA PARK.—March 8.—The Corporation invite landscape gardeners, surveyors, and others to send in designs in competition for laying out the Alexandra Park. Joseph Heron, town clerk, Town Hall, Manchester.

BOGNOR.—March 12.—Designs for Sea Defence Work. A premium of 50*l.* will be given for the plan approved of by the Board. Mr. Frederick Elkins, Clerk to Local Board, Bognor, Sussex.

WRINGTON.—March 15.—For Specifications, Plans, and Estimates for Levelling and Improving the Churchyard of the Parish Church. A Premium of four guineas will be given for the accepted plan. Mr. Henry Morgan, Golden Lion Inn, Wrington.

CONTRACTS OPEN.

LONDON.—March 13.—For the Supply of Building Materials for Repairs of Convict Prisons at Pentonville, Millbank, Brixton, Portland, Portsmouth, Chatham, Parkhurst, Dartmoor, and 'Woking Male' Prisons, and the Refuge at Fulham. Forms of Tender may be had on application at the several prisons before-named, or at the office of the Directors, 45 Parliament Street.

STRAND.—March 10.—For Watering the several Streets in the District. Mr. Thos. M. Jenkins, 5 Tavistock Street, Covent Garden, W.C.

TRINITY HOUSE, March 15.—For the Construction of Six large Iron Buoys. Mr. Robin Allen, Secretary, Trinity House, E.C.

ST. MARYLEBONE.—March 9.—For the Supply of Stone-ware Sewage Pipes, Bends, Junctions, &c. W. E. Greenwell, Vestry Clerk, Court House, St. Marylebone.

GREENWICH.—March 17.—For Masons' Works, &c. &c. Mr. E. W. James, Clerk to the Board, Greenwich.

GREENWICH DISTRICT.—March 17.—For Masons' Work, supplying Stone, &c.; for supplying Guernsey Granite and other Road Materials; for Carting, &c. E. W. James, Clerk to the Board, Greenwich.

SHOREDITCH, March 9.—For Masons' and Paviers' Work, &c. Mr. W. G. Davis, Town Hall, Old Street Road.

HAMMERSMITH.—March 8.—For the various Works connected with the Formation of the Roadways, Pathways, Surface Drainings, Levelling, and laying out of their Burial Ground, situate in Fulham Fields. Alfred J. Roberts, Clerk to the Burial Board.

ST. MARYLEBONE.—March 11.—For Supply of Materials to Repair Roads; for Supply of Stone-ware Sewage Pipes, Bends, Junctions, &c.; for Bricklayer's Work, &c. &c., all for one year, from March 25. Mr. T. Gaul Browning, Surveyor, Court-house, St. Marylebone.

HACKNEY.—March 11.—For Supply and Execution of Mason's Work, Gas Fittings, Ballast, &c. &c. Mr. James Lovegrove, C.E., Town Hall, Hackney.

PENTONVILLE AND OTHER PRISONS.—March 13.—For Supply of Building Materials. The Directors of Convict Prisons, 45 Parliament Street, S.W.

WESTMINSTER.—For the Erection of a House on the site of the Chapel, Duke Street, Westminster, immediately contiguous to St. James's Park. Charles E. Davis, F.S.A., 3 Westminster Chambers, Victoria Street, London, or 55 Great Pulteney Street, Bath.

STALYBRIDGE.—March 11.—For Superstructure of Public Baths. Messrs. Paull & Robinson, F.R.I.B.A., 1 St. Peter's Square, Manchester.

DEWSBURY.—March 10.—For the Masons' and Bricklayers' Work required in the Erection of a Brick Chimney, at Calder Mills, 70 yards high, and 110 feet diameter. John Kirk & Sons, Architects, &c., Huddersfield and Dewsbury.

HEADINGTON.—March 17.—For Erection of an Infirmary, Lavatory, and Stable to the Union. Mr. Francis Cripps, 19 Market Street, Oxford.

DONCASTER.—March 24.—For Construction of a Brick Sewer, and Glazed Pipe Sewer. Mr. B. S. Brundell, 1 Princess Street, Doncaster.

CAMBRIDGE.—March 16.—For Erection of a New Block of Buildings at Jesus College. Mr. T. M. Rickman, Surveyor, 8 Montague Street, W.C.

TRURO (Cornwall).—For Erection of a Parsonage House for St. Paul's. Messrs. Wm. G. Habershon & Pite, 38 Bloomsbury Square, W.C.

SHREWSBURY.—March 24. For Restoration of St. Mary's Church. Rev. J. B. Lloyd, Shrewsbury.

BARINGSTOKE.—March 9. For Erecting a New Building at the Mechanics' Institution. Mr. W. Seymour, 13 John Street, Adelphi.

SOUTHPORT.—March 20. For Erection of Engine-house, &c. &c., connected with the Waterworks. Messrs. Thomas & Charles Hawkley, 20 Great George Street, Westminster, S.W.

PORTSMOUTH.—March 18. For Supply of Granite and Granite Chippings. Mr. J. E. Greateorx, C.E., Arundel Street.

TATTENHALL, near CHESTER.—March 12. For Restoration of Parish Church. Mr. John Douglas, 6 Abbey Square, Chester.

BRIGHOUSE.—March 8. For Enlargement of the Church School and Erection of Master's House at Elland, Lower Edge. Mr. Edwin Heaton, Spring Bank House, Brighouse.

HALIFAX.—March 9.—For Erection of a Warehouse in Portland Street. Mr. W. H. D. Horsfall, Crossley's Buildings, Northgate, Halifax.

HALIFAX.—March 8.—For Slaters' and other Work required in the Erection of a Primitive Methodist Chapel, &c. Mr. Saml. Utley, St. James's Buildings, Crown Street, Halifax.

HALIFAX.—March 10.—For Erection of a House and Shop in North Parade. Messrs. Horsfall, Wardle & Patchett, George Street, Halifax.

HALIFAX.—March 11.—For Supply of Cast-iron Gas Pipes. Mr. J. E. Norris, Town Hall, Halifax.

ACCRINGTON.—March 8.—For Erection of a New Wesleyan Chapel at Antley. Mr. William Waddington, 5 Grimshaw Street, Burnley.

MACCLESFIELD.—March 13.—For Taking Down and Re-erecting Lord Street School, either from separate trades, or in one contract for the whole. Mr. James Jackson, Sutton Mill.

DEWSBURY.—March 12.—For Masons' and other Work in the Erection and Completion of a Warehouse to be built in Commercial Street, Morley. Mr. Stoad Ellis, Architect, Dewsbury.

MIRFIELD (DEWSBURY), March 16.—For Erection of Five Houses and a Shop. Mr. John Barker, Town Hall, Mirfield.

BATLEY (DEWSBURY), March 9.—For Construction of a Brick Sewer. Mr. James Wetherill, Surveyor, Batley.

DEWSBURY, March 9.—For Erection of a Villa Residence and Outbuildings at Ossett. Mr. Henry Holton, Central Buildings, Dewsbury.

DEWSBURY, March 10.—For Mason and Bricklayer Work in Erection of a Brick Chimney, 70 yards high, with Flue 10 feet in diameter, at Calder Mills. Messrs. John Kirk & Sons, Architects, Huddersfield and Dewsbury.

BRISTOL.—For a new Shop Front. Applications to be made at 64 Redcliff Hill.

SOUTHAMPTON, March 10.—For Erection of a House at Bevois Town. Mr. Alfred Burt, 22 Above Bar, Southampton.

SOUTHEND.—For Construction of Roads. Messrs. Ham-mack & Lambert, 59 Biahopgate Street, E.C. (See Advertisement.)

TOULOUSE, FRANCE.—Supply of Water for that portion of the Town of Toulouse situated on the right bank of the Garonne:—

1. The Supply and Laying of the necessary Apparatus, Pipes, &c., for the part of the town named above;

2. The Maintenance of the Conduits, Apparatus, Pipes, &c., of the Water Supply of the whole town.

The first portion of the contract is estimated at 36,800*l.*; the second is not determined, but is to be taken on contract for ten years.

Each portion will be adjudged separately. Deposit, by way of provisional security, 1,200*l.*, to be placed in the hands of the Maire by March 3, and the contract to be adjudicated on March 15. Particulars to be had at the Office of the Engineer of the Town of Toulouse.

SAVOY, FRANCE.—Construction and Improvement of Roads in eight lots; total estimates, 9,640*l.*; caution money 284*l.* Particulars to be obtained at the Prefecture at Chambéry, and tenders to be sent in before March 15.

TROUVILLE, FRANCE.—Construction of Quay, 500 feet long, on the right bank of the river Touques; the total cost of the works is estimated at 8,000*l.*; deposit by way of guaranty, 240*l.* Particulars to be obtained at the Prefecture of the Department of Calvados at Caen; tenders to be sent in before March 19.

BARNOLDSWICK.—March 12.—For the Construction of the entire Works (except Rails and Chairs) of the Barnoldswick Railway. Henry Wait, Secretary, Barnoldswick.

BASINGSTOKE.—March 9.—For the Erection of a New Building for the Mechanics' Institution. Mr. George Fernie, Secretary to the Mechanics' Institution, Basingstoke.

CAMBRIDGE.—March 16.—For the Erection of a New Block of Buildings in the Grounds of Jesus College. Alfred Waterhouse, Architect, 8 New Cavendish Street W.

CHESTER.—March 12.—For the Restoration of the Parish Church of Tattenhall, near Chester. John Douglas, Architect, 6 Abbey Square, Chester.

DONCASTER.—March 24.—For the Construction of 2,600 feet of Brick Sewer, and about 6,000 feet of Glazed Pipe Sewer, and for alteration of existing Sewers and Works in connection therewith. W. B. Shirley, Town Clerk.

EAST KISWICK.—March 9.—For the Erection of a New Wing to the Residence of Miss U. Laurence. Thomas Ambler, Architect.

HEADINGTON UNION.—March 17.—For the Erection of an Infirmary, to contain 37 beds, besides the necessary offices; and also for the Erection of a Lavatory and Stable. Francis Cripps, Clerk to the Guardians.

**LEEDS.**—March 12.—For the Erection of a Villa Residence at Stourton Lodge, Thwaite Gate, Hunslet. Jno. M. Fawcett, Architect, 73 Albion Street, Leeds.

**LEICESTER.**—March 8.—For the Furniture for the New Borough Lunatic Asylum, at Humberstone, to consist of 200 birch bedsteads; 200 horsehair mattresses; 200 horsehair bolsters; 150 birch Windsor chairs, with elm seats; 12 birch dining tables; 6 birch serving tables; 18 sofa seats of birch, with carpet seats, hair stuffed. E. L. Stephens, Borough Surveyor, Public Offices, Silver Street, Leicester.

**SHREWSBURY.**—March 24.—For the Restoration of St. Mary's Church, re-opening of the Chancel, and other Works. S. Pountney Smith, Architect, Coleham, Shrewsbury.

**SOUTHPORT.**—March 20.—For the Execution of the Works comprised within the following Contracts, viz.:—Contract No. 6. Including the Erection of an Engine and Boiler House, Chimney, Cottage, Cooling Pond, and other Works at the Aughton Pumping Station of the Southport Waterworks Company, near Ormskirk. Contract No. 7. Including the Construction of a Service Reservoir on Gore Hill, in the parish of Aughton. Mr. W. Harper, Clerk to the Company, Broad Street, Bury, Lancashire.

**TAFF VALE.**—March 11.—For Discharging Ballast, and Tipping Coal and Coke at Penarth Dock and Tidal Harbour. By order of Directors of Taff Vale Railway, Frederick Marwood, Secretary.

**TARDEBIGGE (Worcestershire).**—For the Erection of a Church at Webbeath. Quantities will be furnished. The lowest or any tender will not necessarily be accepted. Frederick Preedy, Architect, 13 York Place, Portman Square, London, W.

**TRURO (Cornwall).**—For the Erection of a Parsonage House for St. Paul's. Wm. G. Harrison and Pite, Architects, 88 Bloomsbury Square, W.C.; or at the New Public Rooms, Truro.

**TWICKENHAM.**—March 9.—For enclosing the Public Recreation Ground fronting on to the Hamworth and Hampton Roads, requiring about 2,000 feet run of ornamental post and horizontal bar fence. William Ruston, Clerk, Twickenham.

**MIRFIELD.**—March 16.—For the Erection of Five Houses and a Shop at Mirfield. John Barker, Architect, Town Hall, Mirfield.

**NETHER WHITACRE.**—March 10.—For the Restoration of the Parish Church. Rector, Nether Whitacre.

**OTLEY.**—March 17.—For the various Works required in the Erection of a Mechanics' Hall. Charles Fowler, Architect and Surveyor, Britannia Buildings, Leeds.

**PORTSMOUTH.**—March 18.—For the Supply of such quantities of the Best Blue Broken Guernsey Granite and Granite Chippings. Mr. S. J. Elliott, Clerk to the Board.

**LIVERPOOL.**—March 10.—For Erection of a New Hospital. Messrs. B. & D. Howarth, Church Buildings, Whitechapel, Liverpool.

**BRECKNOCKSHIRE.**—March 13.—For Restoration of Llanmiller Church. Mr. J. West, Architect, 31 Manchester Street, W.

**FAIRHAM (Surrey) LOCAL BOARD.**—March 15.—For the Construction of a New Bridge over the River Way, and the Formation and Making of certain New Roads and other Works connected therewith within their District. Mr. Hector Harding, Surveyor to the Board, 116 East Street, Farnham. Richard Mason, Clerk to the Board, Farnham.

**FOLKESTONE (Kent).**—March 8.—For the Restoration of the Chancel, North and South Aisles, South Transept, and Ground Floor of Tower of the Parish Church. Mr. Christian, Architect, 8a Whitehall Place, London.

**TEDDINGTON.**—March 12.—For the Erection of a Church at Teddington, Middlesex. Mr. T. Goodchild, Architect, 6 Duke Street, Adelphi.

**CRICKHOWELL.**—Extension of time, March 13.—For the restoration of Liangunder Church, near Crickhowell, Brecknockshire. Clifton J. West, Architect, 31 Manchester Street, W., London.

**FAVERSHAM.**—March 13.—For Erection of Brewery and other Offices. Mr. Benjamin Adkins, Architect, Faversham.

**BURLEIGH.**—March 13.—For Taking Down a Manufactory and Erecting a New One. Mr. George B. Ford, Architect, Wedgwood Chambers, Burleigh.

**TWICKENHAM.**—March 13.—For Erection of an Engine, Boiler-house, &c. &c., and Cast Iron Reservoir at the Waterworks. Mr. W. McLandsborough, C.E., 62 and 63 Regent Street, Cheltenham.

**BARNOLDSWICK.**—March 12.—For the Construction of the entire Works (except rails and chairs) of the Barnoldswick Railway. Henry Wait, Secretary, Barnoldswick.

**BOROUGH OF PORTSMOUTH.**—March 17.—For Constructing and completely finishing a cast-iron Outfall Sewer, 3 feet in diameter, with valve chambers, and all other works connected therewith, adjoining the channel of Langston Harbour. S. J. Elliott, Clerk to the Board, February 19, 1869.

**CALVERLEY.**—March 10.—For the various Works required in the Extension and General Re-rotation of the Church. T. H. Healey and F. Healey, Architects, Bradford.

**CARDIFF GAS-LIGHT AND COKE COMPANY.**—March 10.—For a Gasholder 110 feet diameter by 29 feet deep, with Columns, Girders, &c., erected complete, at the Grange Station, near Cardiff. Henry Bowen, engineer, Cardiff.

**CHELtenham WATERWORKS COMPANY.**—TWICKENHAM WORKS.—March 13.—For the execution of the Works comprised within the following Contracts, namely:—Contract No. 2—Including the erection of an Engine and Boiler House and Chimney, Engineman's Residence, and the construction of Subsidy and Pure Water Tanks, three Filter Beds, Water Tower, Boundary Wall, and other Works. Contract No. 3—Including the erection of a cast-iron Service Reservoir or Water Tank and other Works. W. H. Gwinnett, Clerk to the Company, Cheltenham.

**CORPORATION OF MANCHESTER.—ALEXANDRA PARK.**—March 8.—The Corporation invite Landscape Gardeners, Surveyors, and others to send in designs in competition for laying out the Alexandra Park. Joseph Heron, Town Clerk Town Hall, Manchester.

**GUILDFORD.**—March 8.—For sinking a Cylinder, 7 ft. or 8 ft. in diameter, from the level of the present engine-house to the chalk rock below, and for carrying on from thence a boring until a sufficient supply of water is obtained. The Clerk of the Local Board.

**HELMSLEY.**—March 12.—For the masonry and carved work required in the erection of a Memorial at Helmsley to the late Lord Feversham. Robert Pearson and Robert Palmer, Hon. Secs., Helmsley.

**LIVERPOOL.**—March 10.—For the Erection of a New Hospital, to be built on land bounded by Caryl Street, Hill Street, Grafton Street, and a proposed new street, Toxteth Park. Culshaw & Sumners, Architects, Lumford Court, Liverpool.

**NETHER WHITACRE.**—March 10.—For the Restoration of the Parish Church. Rector, Nether Whitacre.

**SELBY.**—April 9.—For the Brick, Stone, and Carpenter and Joiners' Works (Labour only), Slatting, Plumbing, and Glazing, Plastering, Painting, and Ironwork, required in the erection of a Warehouse, Malkilm, Engine House, Chimney, and other buildings. John M. Fawcett, Architect.

**STANNINGLEY.**—March 4.—The several Works required in the Erection of a Block of Three semi-detached Villas at Stanningley. C. S. & J. Nelson, Architects, Albert Chambers, Park Row, Leeds.

**STANNINGLEY.**—For the several Works required in the Erection of a Gentleman's Residence, at Stanningley. Joseph Roberts, Architect, 18 East Parade, Leeds; Sun Close, Stanningley.

**TEDDINGTON.**—March 12.—For the Erection of a Church at Teddington, Middlesex. Mr. T. Goodchild, Architect, 6 Duke Street, Adelphi.

**THORNTON (Notts).**—March 5.—For Restoring and Repairing the Parish Church. John Henry Hakewell, Architect, 5 South Molton Street, London, W.

**TWICKENHAM.**—March 9.—For Enclosing the Public Recreation Ground fronting on to the Hamworth and Hampton Roads, requiring about 2,000 feet run of ornamental post and horizontal bar fence. William Ruston, Clerk, Twickenham.

**WALLSEND LOCAL BOARD.**—March 1.—For the Construction of the Sewerage of a portion of the above District W. S. Daghish, Clerk.

**WELTON.**—March 4.—For the Erection of a Dwelling-house and Shop. Joseph Wright, Architect, 18 Parliament Street, Hull. February 19, 1869.

**WELTON.**—March 4.—For the Erection of a Primitive Methodist Chapel. J. Wright, Architect, Hull.

**WOLVERHAMPTON.**—March 10.—For certain Repairs and Restorations of the interior of St. John's Church, Wolverhampton. Rev. H. Hampton, Vicar of St. John's, Wolverhampton.

**PORTSMOUTH.**—March 17.—For Constructing and Finishing a Cast Iron Outfall Sewer, 3 feet in diameter, with Valve Chambers. Mr. J. E. Greatorex, Landport Hall, Arundel Street, Portsmouth.

**CARDIFF.**—March 10.—For a Gasholder 110 feet in diameter by 29 feet deep, with Columns, Girders, &c., complete. Mr. Henry Bowen, Engineer, Cardiff.

**CAISTON.**—March 11.—For a Cooking Apparatus in the Union Workhouse. Mr. George H. F. Haddelsey, Clerk to the Board, Caiston.

**WIKE.**—March 12.—For Erection of Twenty-eight Cottages. Mr. George Buckley, jun., Architect, Hanson's Passage, Silver Street, Halifax.

**LIÈGE, BELGIUM.**—The Provincial Government of Liège will shortly put up to competition the construction of extensive works in masonry for the formation of a reservoir of water in the valley of the Gilleppe; the estimate of costs is 133,360l., and the amount of deposit by way of guarantee 6,600l.

**ARLON, BELGIUM.**—Gaswork for the town of Arlon; the length of pipe will be about seven thousand yards, and the number of lights about 850. Applications to be made, before the 1st of April, to M. Birong, Secretary of the College of the Bourgmasters at Arlon.

**BRON, DEPARTMENT OF THE RHONE, FRANCE.**—Construction of a Lunatic Asylum in the commune of Bron, in seven lots; estimates as follows:—

1. Masonry, with supply of stone . . .	1,297,568 francs
2. Asphalt and cement work . . .	131,281
3. Carpenters' work . . .	418,713
4. Joiners' " . . .	238,565
5. Plastering, painting, and glazing . . .	149,040
6. Iron and lock work . . .	190,887
7. Lead and tin " . . .	48,789
296,794 = Frs. 2,469,843	

Deposits as security varying from 2,080l. for the first to 76l. for the seventh lot. Application to be made to the Prefect of the Rhone at Lyons; and tenders to be sent in before the 19th March.

**ROUEN.**—The contract for the work relating to the Female Lunatic Asylum (see *The Architect* of January 30) is postponed till further notice. This does not affect the contract for the Prefecture.

**RENNES, FRANCE.**—Completion of a Quay for Disembarkation at the Port of Houle-sous-Canales. Total estimate, 2,216l.; deposit by way of guarantee, 60l. Tenders to be sent in to the Prefect of the Department of Ille and Vilaine, Rennes, before March 12. Particulars to be obtained at the Prefecture.

**RANDELL & SAUNDERS** have much pleasure in informing their friends, and the Building Trade generally, that to facilitate building operations during the winter season, they have provided a large stock of well-seasoned Corsham Down Block stone. Bath Stone Office, Corsham, Wilts.—[Adv.]

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**BANKS OF THE THAMES.**—Thirty Minutes from Cannon-street and Kensington Station. To be LET or SOLD, on unusually advantageous terms, a handsome FAMILY RESIDENCE, of imposing elevation, thoroughly well built, on 18 ft. of gravelly soil, and perfectly dry. It contains, on the fourth-floor, 4 rooms; on the third-floor, 3 lofty bedrooms and large dressing-room; on the second-floor, approached by a stone staircase, 3 excellent bedrooms and large dressing-room, w.c., and sink on half-landing; on the first-floor, elegant suite of drawing-rooms, handsomely decorated, having a length of 35 ft., by an extreme width of 20 ft., fitted with white marble mantelpieces and French casements; on the half-landing, a conservatory; on the ground-floor, capital dining-room, 20 ft. by 17 ft., opening on to a balcony leading to garden, library, outer and inner entrance-halls, and w.c.; on the basement, capital light kitchen with range, dresser, sink, and cupboard, housekeeper's room, butler's pantry, wine, beer, and coal cellars, side entrance from area and w.c., and back area with meat-safe, &c. The residence is approached by a handsome portico, and has a back-front opening into beautiful pleasure-grounds adjoining the river, planted with forest trees, and commands magnificent views of noble domains. Rent £106. Lease, 99 years from Midsummer 1851, at a ground-rent of £30. Price, £1,150, or about half the actual cost of erection.

The property is situated within a short drive of Wimbledon Common, Richmond Park, and Kew Gardens, and the neighbourhood is considered one of the most healthy in the Metropolitan Suburbs, and abounds in charming walks and drives. There is a boat-house, and capital bathing and fishing.

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**SYDENHAM PARK**—For Investment or Occupation.—A most attractive and desirable FREEHOLD PROPERTY, consisting of four Semi-detached Residences, containing ten and twelve rooms each, with lawn and flower-gardens in front, let to responsible old standing yearly tenants (two of whom have occupied fifteen and one ten years), who pay rates and taxes, and producing a rental of £220 per annum. The large gardens in the rear, which are let with the property, are held on lease for thirty years from Midsummer 1855, at a ground-rent of £5 each garden, leaving a well-secured profit rental of £200 per annum. Price only £700—subject to a mortgage on the property of £1,000, which can remain for four years at 5 per cent., so that, after deducting interest, the purchaser will realize over £100 per annum for the amount invested—the houses will be sold in pairs.

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**UPPER NORWOOD.**—Sound Freehold Investment.—Three superior Semi-detached FREEHOLD RESIDENCES, each containing ten rooms, with gardens front and rear, let to respectable tenants, who pay taxes, producing £150 per annum, but would rent to produce £180. Price £1,250, returning a purchaser nearly eight per cent. on the present low rents, and above nine per cent. when rent.

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# The Architect.

## CERAMIC ARCHITECTURE.



Architecture in our day has not risen to the highest excellence, it cannot be said that there has been any lack of the facilities by which the student of it could acquire a thorough knowledge of the history and achievements of the art. Its literature has become most varied and abundant; while there is probably not a monument of architecture in the world with which either sketching, drawing, or photography has not made even the most stay-at-home

student tolerably familiar.

The result, however, of all this teaching has mainly been to create an interest in and an absorbing attention to the *forms* rather than the *materials* in which architectural art has been developed. In former times, to which lovers of the art point as the period of its grandest development, the characters of architect and builder were more nearly identical than they are with us now. The one had not grown into what is called the *professional*, or the other into the *trade* character which we find now-a-days to be the case when architects and builders are spoken of.

In mediæval, and probably in antique times, the 'master mason' was at once the responsible designer and constructor of his work. The selection and treatment of material in his hands was sure to be a matter of almost equal importance with the forms and details in which his building should be conceived. Now-a-days we have changed all that. It is no uncommon thing to find that an architect designs his work without having made up his mind as to the exact material he will employ in erecting it. In saying this, we are not thinking mainly of the despicable resorts which are made to *compo* or cement in order to give the appearance of stone construction to a building, or of the many similar tricks and shifts which are employed to deceive the eye in regard to the material of so many of our works. What is more difficult to understand is the manner in which our usual honest building materials are treated, altogether regardless of their natural qualities. When one thinks, for example, of the essential and obvious difference between stone and brick, it is evident that the treatment which would be very fitting for the one must be quite inapplicable to the other.

It is probably true that Englishmen will always regard stone as the superior material for building use. It is that which embodies our highest ideas of dignity and grandeur in architectural art. If we consider, however, how backward we are in our secular and domestic architecture at this moment, it may be well to remember that the only truly distinctive national style in that class of building which England can boast of, was one which derived its character from the brickfield rather than from the quarry. In the chronology of our English styles, the Elizabethan glories in its brickwork. No style we ever possessed has more truthfully or delightfully expressed the characteristics of English life; and we may fairly assume that the material which so largely composes it stands in need of but little apology.

Whatever may be our opinions or likings as to *styles*, there can be no question as to the genuineness or capability of *brick* as a building material. It is at least a thoroughly English one, which most districts of our country yield in abundance. It will be admitted, however, that the oblong piece of burnt clay we call a brick, is not by any process of multiplication quite equal to form very attractive features in usual architectural design. And even the use of moulded brick, though so much remains to be done with it, has limits which are soon reached when the architect wishes to express himself strongly in his work. The question then arises whether the kindred clay material which we speak of as *Terra Cotta* is not the natural corollary to brick—if one may use the expression—when details or elaboration are intended? It may be affirmed as a matter of fact, or fashion, that, at the present moment, when we desire to 'dress' our brick buildings, it is the usual practice to resort to *stone*.

The mere brick which we ordinarily use is, of course, the simplest and humblest kind of *terra cotta*. And I venture so far as to say that no satisfactory reply can be given to the question—Why we should use a material at all, and stop short with its vulgar and most commonplace development? The substance in which we raise the substantial masses of our construction is, in its plastic state, equally susceptible of the most decorative elaboration, with super-added advantages which I shall have occasion to point out.

Of late years much has been said and written as to the legitimate use of materials. In proportion as these accumulate in our hands, the subject becomes more and more important, especially when we see how common a device it has become to mix up in our designs materials not less different in substance than in colour. It is doubtful whether the usual modern practice of employing brick and stone together in one design has justified itself to the artistic sense.

Certainly the difficulties attending such a combination seem to be far from trifling to the architect. There is, first of all, the essential difference in the nature of the two materials, and the consequent inharmoniousness of effect which time and weather produce upon them. Hence one so often sees in our brick and stone buildings, when even a few years have passed over them, strange effects such as the architect in the conception of his design surely never anticipated.

There is again an obvious anomaly in employing a 'noble' material, to borrow Mr. Ruskin's phraseology, which is forced to become the servant of the 'ignoble' one; for we all know that in using stone to dress our brick buildings, the quarried material has to be cut and shaped into sizes which are regulated to a great extent by the rigid quantities of the brick we use.

Beyond these considerations there lies another of increasing interest. The general question of *colour* in our building is one upon which much of the popular appreciation of architectural art is likely to be formed. It is not meant that the public are generally to be regarded as highly appreciative of colour as a fine art; but it is tolerably safe to assume that the great majority are more likely to be affected through their *senses* than their *mind* in all exhibitions of art. Purely architectural detail is one of those things which require a very technical kind of knowledge to appreciate. For one man who will feel the beauty of flowers because of their *forms*, there are many who will be quite sensible to that beauty by their *colour*. And so by analogy it would seem natural to argue that if architecture, which depends so much on both form and colour, is to take hold of popular and general interest, which is after all about the highest thing it can do as an art, we may expect to achieve that object more readily by giving greater emphasis to our studies in the direction where we are most likely to win men's likings.

Whether the public interest, which we so frequently see and hear expressed in regard to works of architecture in our time, has been excited in any degree by the noticeable regard which architects have shown towards colour in their works, it may be difficult to determine. But that the more popular productions of the art show this increased care and liking for such effects as colour will produce, is evidenced in any of our streets where new buildings arise from time to time. Even the purely stone building is now designed with varieties of effect such as the employment of various stones will produce, to say nothing of the differently coloured stones which are used to decorate what may be classed as brick buildings.

It is a fair matter for criticism whether stone so employed in combination with brick can compete with the kindred clay material, modelled and moulded into the forms and details which stone is usually employed to produce. The reason is obvious. You can only get such colour in stone as stone will give you. Here there are no gradations or compounds possible; and even when two tones or varieties of colour are sought for, they are generally to be secured only at considerable expense and delay, seeing that the quarries which produce them will most probably lie widely apart from the building site. And here one is reminded of Lord Bacon's well-known essay on Housebuilding. Whether wisely adapted or not to our modern notions, it may be granted that his speculations are natural and attractive to most minds. In building his house, he would rear it, if possible, out of the soil on which it is to stand, from which it would seem as if he had had the brick or terra-cotta material in his calculations—as would naturally indeed be the case in his time. If *stone* is pre-supposed, his theory becomes very limited in its application, seeing how rare it is to find a quarry of suitable material adjacent to the great majority of building sites. On the other hand, our brickfields are plentiful and comparatively near to us in any district of the country, while the clays and marls which our mother earth yields so bountifully are capable of infinite variety of treatment, from the moulding of the common brick for the masses of our walls to the most elaborate moulded or sculptured details with which we may desire to clothe them.

Suppose we have to build in almost any county in England (for in Scotland, as in France, the case is different, stone, of some sort, being more plentiful than clay), we shall with tolerable certainty find a brickfield ready and near at hand. We avail ourselves of its resources for at least the plain masses of our building. But why stop here with the use of clay, and betake ourselves probably to some distant district of the country to procure a stone with which to dress our designs? Our brickfield, let it be considered, yields us a material so facile in its nature that we can model and mould it as we choose; and, in addition, may so use it in the process of firing as to secure the most varied combinations of colour. Our whole building, in this case, becomes perfectly kindred and homogeneous in its substance, native in fact to the soil on which we are rearing our design. There is nothing of novelty or invention in this. It is true that terra-cotta has become quite vulgarised to most minds, and associated at best with chimney pots or garden vases. In its connection with architecture, and in its capabilities for receiving any amount of decorative elaboration, very little, if any regard can be said to be entertained for it. We know, as a matter of historical knowledge, what has been done with it in other times; but, as has been already remarked, we copy and reproduce old forms, and remain comfortably oblivious of the *material* in which they are expressed. It seems hardly necessary to refer to the actual works, or the more numerous sketches, of such sculptors as Donatello, Ghiberti, Lucca della Robbia, Jacopo della

Quercia, and a host of other names associated with the heyday of Italian art, to convince any one that the clay in which they elected to work is not a substance we can afford to despise or ignore in these times, and especially in a country like England, so incomparably rich in the resources of its clayfields.

I speak from experience in saying that there is something almost fascinating in designing architectural detail for a material so plastic and pliable as clay: so capable of every artistic form and expression in the hands of the modeller, and so susceptible of fine gradations of colour in the process of firing. The introduction into our buildings of the *actual work as it comes from the sculptor's hand* gives a character to terra-cotta to which no other material can lay claim. Those who will think for a moment that the thickness of a piece of paper is enough to make or destroy the quality of a work, as between the ordinary sculptor's model and the workman's rendering of it in stone or marble, will readily appreciate what that advantage means in an artistic sense.

To secure the real hand and head work of the sculptor himself, without the secondary agency of mechanical workmen, is in itself an object which might excite the interest of every architect; and to be able to place such work, regardless of silicate solutions or indurating processes, in imperishable quality as actual constructive, and not veneering, features of his design, is surely a consideration which should recommend the use of terra cotta to every one who values truth and feeling in his work. I would not pretend to say that such a treatment of our brick buildings is an easy process in the present condition of pottery as applied to architecture. But that it is easy of accomplishment has been settled by actual examples; and, therefore, all that seems necessary is that the architect should create the *demand* in order to induce the manufacturer to provide the *supply*. When one thinks of what other countries, and even our own country, in former times have produced, before a *pseudo* classicism inflicted on us all varieties of shams, it seems strange and unaccountable that terra cotta should be for the most part confined to the oblong piece of clay which is utterly guiltless of any artistic interest whatever.

ROBERT EDGAR.

#### OUR LITTLE BILL FOR LUNCHEON.

THE Metropolitan Board of Works has a right to complain. It is an ill-used Board. The public has not, even yet, formed a very high opinion of its deserts. In this respect the public is guilty, not only of want of discrimination, but of want of gratitude. In its anxiety to afford to its friends an opportunity of admiring the magnificence with which it has adorned its distant station of Abbey Mills, the Board of Works has displayed a munificence, at the cost, we presume, of the rate-payers, that will no doubt be a source of high satisfaction to all who have the honour to rank among its contributors. It has to some extent done this 'good by stealth.' It has been anxious that the left hand of the public journals should not know what the right hand, which controls expenditure, has done. It will now, no doubt, blush, if a Board can blush, 'to find it fame.'

The particular occasion to which we more especially refer is that of the visit of the vestrymen to the Main Drainage Works at Abbey Mills last summer. Nothing could have been more agreeable than the trip. The little drawback of the bill was kept out of sight in a very gentlemanly fashion. But the restless curiosity of our contemporary, the *Fall Mall Gazette*, was unsatisfied without a peep at this bill. Having peeped, this journal has had the further indiscretion to tell. We beg to offer our condolences, and to express a proper sympathy with the just indignation of the Metropolitan Board.

That our readers may not take the matter altogether on our own showing, we reproduce 'the principal items which,' says this revealer of secrets, 'have at length leaked out. They are as follows:—The cost of the cold collation, wine, &c., was 1,410*l.* 16*s.* 11*d.*; steam-boats for conveying the visitors from London to North Woolwich, 270*l.*; Great Eastern Railway, for special trains to Abbey Mills, 354*l.* 13*s.* 7*d.*; total, 2,041*l.* 10*s.* 6*d.*' The remark of Mr. Mantalini as to the odd halfpenny will recur to many persons, as applicable to the odd 16*s.* 11*d.*, if not to any larger portion of the charge.

Now we cannot but consider it to be an extremely considerate and public spirited thing for a Board, which, having spent very large sums for the improvements on which it had decided, and being in want of further large sums for further improvements, seemed to persons not very well versed in finance to be drifting towards a position of some embarrassment, to lay out 2,041*l.* 10*s.* 6*d.* in steamers and special trains, and in eating and drinking. The cost of the very commodious pier provided for the convenient landing of the vestrymen is not included in the amount above cited, because, of course, it comes under the general head of 'works.' This transitory convenience can hardly be said, like Jonah's gourd, to have sprung up in a night, and to have perished in a night, but its period of brief utility was hardly longer than that of that celebrated vegetable. At all events its cost will have come, or will have to come, out of the same convenient and well-furnished pocket as that from which have been extracted the other items of the bill.

We hope that our other governing bodies will follow the excellent example of the Metropolitan Board, and that when they invite their special portions of the public to admire and to feast, we may be there to see. In the application to Parliament for the requisite increase of borrowing or of taxing powers, or of any other means of extending

the dominion of the Metropolitan Board of Works, we trust that their well-timed munificence will not be forgotten. In the days of ancient London, when it was desired to celebrate a coronation, or a royal christening, or some other great national event, the conduits were set running with wine. It dribbled, however, from a modest spigot hole compared with that from which the generous magnificence of the Metropolitan Board of Works appears to be accustomed to flow.

#### ARCHITECTURAL EDUCATION IN PARIS.

THE Art Schools of Paris are well known to many English architects and other artists, but students not acquainted with France, and all who are interested in artistic education, should know the system which is in operation amongst our neighbours, especially as that system has been greatly modified and the means of education largely extended during the last few years.

The *Ecole Impériale et Spéciale des Beaux Arts* deserves first notice. This school is open for study to all the world, though none but Frenchmen born are allowed to compete for the *Grand Prix*, which gives the successful prizeman the right and the means of studying in Rome and Athens for three years.

As regards the school, the session opens at the end of November. The system of examination for diplomas is of general interest. Every student who has obtained twelve marks of merit in the first class of architecture is entitled to present himself for examination for the diploma of Architect. The trial consists in the complete working out of a project in all its details, as if for execution, and is divided into two parts, one graphic, the other oral. The former includes plans, elevations, and sections, together with a descriptive memoir and estimate, and the first sketch has to be prepared by the student, on a given subject, without assistance—in fact, within a given time, during which he is alone in a *loge*, or small atelier. The second part of the trial consists in a *viad voce* examination on the various parts of the plans, on the theory and practice of construction, the qualities and defects of various materials, their resistance, the means employed in preparing them, and, lastly, on the principal points connected with prices and estimates. The examinations are conducted by a special commission composed of architects selected by members of the Administration from a list drawn up by the superior council of the school.

After the outline plans have been made, the students who are pronounced worthy of entering into the competition are allowed six months for the completion of their plans, according to the conditions of the programme. The decisions are made on June 1, and the drawings are afterwards publicly exhibited for several days. Young architects who cannot find time or means to study in Paris would do well to pay a visit there at the period of these exhibitions, especially as there is no season more favourable for seeing the various public buildings of the capital, and as the annual exhibition of paintings, sculpture, engraving, and architecture is also open from May 1 to June 20.

Another and very important establishment for architectural education was opened in 1865, in the Rue d'Enfer. This is called the *Ecole Centrale d'Architecture*, and although it has the countenance and assistance of the authorities, is a private establishment belonging to a company with a capital of 16,000*l.* The object of this school is to give to architectural education more completeness than it obtains in the School of Fine Arts. The course of study includes practical lessons in the ateliers of the school, by eminent masters in all the branches of the art, whether structural or ornamental; drawing, modelling from copies and after nature, reproduction of architectural works, and original design; lectures on geometry, masonry and woodwork, general physics and chemistry; stability of constructions; the history of architecture and the allied arts; geology; vegetable anatomy; the laws of health and sanitary conditions. The course of study lasts three years, with three months' vacation in each year, and the hours of study are from eight in the morning till half-past four in the afternoon.

At the end of the third year the pupils are examined for the diploma of the school. The examination lasts fifty days. The pupils have to produce a set of plans on a subject and under conditions drawn up by a commission consisting of the masters of the school, the professors of the theory of architecture and of the history of architecture, and of the director. The students are left to attach such memoirs or other documents as they please to their plans, and each has to explain and, if necessary, defend, his work before a jury composed of at least five professors and architects. Those pupils who fail to obtain their diplomas are free to enter into competition afterwards.

The school is open alike to foreigners as well as natives of France, and the fee per annum is equal to 34*l.*, payable in three instalments.

Candidates for admission must pass an examination, but this may take place in Paris, in any of the chief towns of France, or even before the professors of foreign universities. The preliminary examination includes ornamental drawing in bas relief; an architectural plan, section, and elevation, from a sketch; a written composition; and an oral examination in arithmetic; algebra to equations of the second degree; geometry and mensuration; geography; and the principles of physical geography, ethnography, and political geography; the past and present empires of Europe and Asia.

The fourth session of the school opened on November 10, 1868; and the statement made to the meeting by the able director, M. Emile Trélat, was highly satisfactory. According to the report there are now above eighty pupils in the school. The number of pupils who completed their studies during the previous session amounts to seventeen, of whom nine obtained diplomas. A considerable number of prizes have already been founded. The following is the list of those awarded at the last examination:—A platinum medal, of 100 francs value, to the pupil in the third class who obtained the most good marks; a gold medal, of the same value, in the second class; a gold medal, of the same value, for construction; a similar medal for figure drawing, given by Henry Cole, Esq., C.B., of the South Kensington Museum, awarded by the votes of the competing pupils themselves; a similar

gold medal, and an architectural work of the value of 300 francs, given by M. Morel, publisher, for work done during the vacation; a prize, given by the Princess Mathilde, to the pupil who had exhibited the greatest general proficiency during the past three years. The grand prize of the school, however, is the *Prix de Sortie*, established by an association of friends of the school; it was awarded for the first time at the last examination, and amounted in value to 1,200 francs, or 48*l.*; it was divided between two pupils, who left the school with the first diploma *ex æquo*.

Prince Napoleon is a warm supporter of this school, and the Ministry of the Fine Arts subscribes four bursarships and four half bursarships.

There is no doubt that its plan is a sound one, and if well carried out, of which there is little danger, looking at the high character of the professors and masters of the school, it cannot fail to have a most beneficial effect upon the quality of French architectural education.

## NOTES FROM FOREIGN PUBLICATIONS.

MONITEUR DES ARCHITECTES. Editor, M. François Lenormant. Lévy, Paris.

In a recent number of this publication will be found plans and an elevation of the Cour de Cassation, forming part of the new Palais de Justice, at Paris, designed by M. Duc, who was the architect, nearly forty years ago, of the well-known Colonne de Juillet. The principal façade is designed after the French Palladio-Mansard model, and consists of a central 'pavillon,' with four engaged Corinthian columns, on either side of which are symmetrical wings, along which the same order is continued in pilasters. Italian windows and French door pieces, the latter remarkable for their disproportion, complete a composition which we think hardly merits the high-flown encomiums it receives at the hands of the present learned and very talented editor of this journal. We notice, in another article from the same hand, the statement that 'the system of Assyrian architecture, the style of its edifices, their plan-arrangement, and the mode of their construction, are all matters well known at present, thanks principally to the excellent studies of M. Thomas, on the palace of Khorsabad; no mention being made of the labours of Layard, even by allusion. And yet the measurements of the buildings are given, throughout, *in feet*, and are evidently taken from Layard's books, and not from that of Place ('Ninive et l'Assyrie'), apropos of which the article is written. Why will our French friends insist on taking *all* the glory to themselves? The following list, from the same source, comprises the various more important works of construction which have been brought to completion during the year 1868:—One theatre, that of the Vaudeville, Chaussée d'Antin; seven churches, namely, those of St. Augustin, La Trinité, St. Pierre, St. Ambroise, St. François-Xavier, Notre-Dame-de-la-Croix, Notre-Dame-des-Champs; two synagogues and a Protestant temple. Of miscellaneous works:—the laying under the Seine of the syphon connecting the main collecting drains ('égouts-collecteurs') of the right and left banks; construction of a bridge over the Rue Berthier, connecting two railways; sinking an Artesian well at the Butte aux Cailles; enlargement of the 'Halles Centrales' by two additional pavilions; construction of the fountain of the 'Château-d'eau'; reconstruction of the south wing of the Tuileries. The works for opening out new streets, &c., which have been completed, comprise:—the opening of the boulevards Arago, Port-Royal, Saint Marcel, Mouffetard and Ornano; Boulevard Haussmann, as far as the Rue Taitbout; and the Boulevard Saint-Germain, as far as the Rue Bellechasse. The following streets, namely, those called Lafayette, Cardinal Fesch, Rome, Bodin, Maubeuge and Puebla; the Quai d'Austerlitz reconstructed; the Champ de Mars restored to its state prior to the Exposition. The following public 'places' have been completed, those, namely, d'Europe, du Nouvel Opéra, de l'Eglise, de la Trinité, and de l'Arc de l'Etoile. The following squares (pronounce *squarr*, s.v.p.):—le Square de la Rue Delaborde and that of l'Ecole Polytechnique. Further, 15½ miles of roadway have been laid down in asphalt.

## MEETINGS OF TECHNICAL AND LEARNED SOCIETIES.

*NOTE.*—The space at our disposal renders it impossible to give regular reports of the meetings of all the Technical Societies in a sufficiently extended form to be serviceable, without shutting out other matter having more varied interest. As it appears likely to be unjust to speakers, and not of much value to our readers, to insert extremely brief abstracts of these proceedings, it has been determined for the future to report only such papers or meetings as appear to possess special claims.

### Royal Institute of British Architects.

The usual fortnightly meeting of this Institution was held on Monday, March 1, William Tite, Esq., M.P., President, in the chair.

After the usual formal business,

The PRESIDENT, who was most cordially received, announced the recommendation of the Council that, subject to Her Majesty's gracious sanction, the Royal Gold Medal for 1868 should be awarded to Professor Lepsius of Berlin.

Mr. WYATT PAPWORTH, upon the occasion of a large number of interesting drawings executed by the late Joseph Bonomi being presented to the Institute by the widow of C. H. Smith, Esq., read an interesting memoir of Mr. Bonomi, one of the leading architects of the last century, with some account of the various public and private buildings erected under his direction. Rosenearth especially was examined at considerable length. Mr. Papworth concluded his essay with an eloquent eulogium, not merely of the artistic merits, but also of the mental qualities, of one who has been almost forgotten by the present generation.

The PRESIDENT then called on Mr. George Godwin, F.S.A., to read his paper entitled 'Some Account of the Chevalier Da Silva's work, "Signes qu'on voit gravés sur les anciens Monuments du Portugal," and on masons' marks generally.

Mr. GODWIN regretted that he had not had time to make the paper as complete as he could have desired in consequence of the great mass of matter which had to be digested, and then proceeded to state that some of the stones in the Great Pyramids of Egypt present symbols, either quarry marks or mason's marks, drawn in red ochre. Some of these marks have been also found in most ancient buildings in Lycia and Mesopotamia, and in various parts of India. Similar marks were found some years back in St. Mary's Church, Leicester, on removing the west window. Mr. Godwin then proceeded to state at what places the various marks depicted on the 38 sheets hanging on the wall were to be, or had been, found. The collection had been made from all parts of the globe. The length of the marks, Mr. Godwin observed, varied from one to five or six inches. The greater number, however, are from two to three inches long. For the greater number of the specimens selected from Spain, his authority, he stated, had been Street's 'Account of Gothic Architecture in Spain,' from which work he quoted the following passage:—'The masons seemed to have worked together in large bodies, and the walls are marked in all directions with the signs which, then as now, distinguish the work of each workman from his neighbour; but I have been unable (save in one or two cases) to detect the work of the same mason in more than one work, and from this it would seem to be probable that the masons were stationary rather than nomadic in their habits—a deduction which is fortified by the difference of general character, which may, I think, be detected between the groups of marks in different buildings. Occasionally the number of masons employed on one building seems to have been unusually large, and it is clear therefore that there were great numbers of masons in the country. For the small church of Sta. Maria Benavente there are the marks of at least thirty-one masons on the eastern wall; as many as thirty-five were at work on the tower part of the steeple at Lerida, while in one portion of Santiago Cathedral there appears to have been as many as sixty.' Looking through the marks given by Mr. Street, he found some marks repeated a little oftener than might perhaps be inferred from the remarks of the writer. The marks from Portugal had been chiefly taken from the Chevalier da Silva's memoir, which gives 508 marks from ancient buildings in that country, besides a supplementary plate containing 14 marks from the great Aqueduct of Lisbon (built in 1738), and 22 ancient masonic hieroglyphics—where used or how obtained is not stated. After comparing the characteristics of these marks with those of other countries, Mr. Godwin observed 'that these marks (it can hardly be doubted) were made chiefly to distinguish the work of different individuals. At the present time the man who works a stone (being different from the man who sets it) makes his mark on the bed or other internal face of it, so that it may be identified. The fact, however, that in the ancient buildings it is only a certain number of the stones which bear symbols, and that the marks found in different countries (although the variety is great) are in many cases identical, and in all have a singular accordance in character, seems to show that the men who employed them did so by system, and that the system, if not the same, was closely analogous in one country to that of the others. It seems to have been urged in Portugal that these signs were symbolical, and were used as means of recognition by the Freemasons who travelled over Central Europe exercising their art. The principal object of the Chevalier da Silva's work—to show that those who have believed that these marks have a masonic significance have been mistaken—cannot for a moment be allowed. The Chevalier urges, that as it was the highest aim of the Freemasons to keep their art a secret, it is improbable that they would have exposed it where they could be observed by all the marks of their order; that if these signs are the characteristics of the Masonic order, they ought to be identical in all buildings. He finally asks how it can be that these signs are those of Freemasons, when we find them on the stones of several monuments erected before the organisation of these fraternities? Here, however, he assumes two things: first, that the marks found on the earliest buildings are similar in description to those of the Middle Ages; and secondly, that the date of the initial organisation of such fraternities is really known. Moreover, he leaves out of consideration the probability, or rather the fact, that the guilds adopted existing forms and symbols without considering the marks symbolical. We may yet believe they owe their wide diffusion to the existence of associated guilds. The general similarity which they present all over Europe, from at any rate the 11th century to the 16th, and indeed to the present day, points to a common origin and continued transmission. M. da Silva fully admits the existence of the building guilds, and the quotations already read go to affirm that they were maintained in opposition to the monastic associations, which were depositaries of old theological traditions, and could be met only by other associations organised with sufficient strength to endure, and in time to become themselves guardians of traditions, and with enough mystery to avoid rousing dangerous resistance. Towards the end of the 12th century, when their numbers had become considerable, a special corporation of intelligent architects, stone-cutters, and labourers was instituted, who, uniting together, formed a secular body which acknowledged royal authority alone. Notwithstanding the absence of written proofs and historical documents, it is probable that societies of lay builders existed in Germany as far back as the 13th century. In the year 1275 the Emperor Rodolpho granted a special charter to the builders established in Strasbourg, and in 1278 the Pope, Nicolas III., delivered them a brief of indulgence, renewed from time to time by his successors. The precedence of the Freemasons of Strasbourg came to be recognised by neighbouring states, and at a meeting of various lodges held in Ratisbon in 1459, the head of the lodge at the Cathedral was acknowledged the head of the Freemasons in Germany. The statutes of this date of the Strasbourg Lodge, from which lodges branched to many places, have been published. As to the earlier guilds in classic countries, of which there are traces, Mr. Godwin would not pretend to speak, nor would he do more with those of our own country than briefly revive the fact that a College of Masons is mentioned in a dedicatory inscription dating from about A.D. 52, and which was found in Chichester in 1725. A Bull was issued prior to 1200 giving authority to heads of churches to build churches, and attaching to them a certain number of *liberi muradores*, or freemasons, to direct and execute

the ornamental part of structures. Much might be, and something has been, written on the actual origin of the marks. Some could be traced to the Lycian alphabet, others were of Runic form, while those of later date might be founded on the Roman alphabet. Mr. Godwin then discussed and illustrated the various marks found to have been most universally adopted. Whatever may have been the original signification of the forms adopted, he found no evidence to lead him to believe they were viewed by the masons other than as signatures given to them in some cases on joining a lodge. The Scotch Lodges gave marks till very recently, if they do not do so now. In St. Ninian's Lodge, at Brechin, every member had to register his mark in a book kept for that purpose, and he could not change it without certain formalities. The subject is probably more curious than useful, but he hoped it would be considered sufficiently interesting to have been brought before the Institute. In his first communication on the matter to the Society of Antiquaries, he ventured to express a belief that no circumstance which promises to throw even the smallest additional light on the early history of those wonderful men to whom we are indebted for so many magnificent buildings can be deemed insignificant or unworthy of consideration, and he thought so still. (Considerable applause.)

After a few remarks from the PRESIDENT, the proceedings closed with votes of thanks—

To Mrs. Smith for the presentation to the library of drawings executed by the late Joseph Bonomi ;

To Messrs. J. Bonomi and George Goldie, for the loan of other drawings by the same hand ;

To Mr. Wyatt Papworth for his memoir of Mr. Bonomi ; and

To Mr. George Godwin for his paper on the Chevalier da Silva's work.

At the next meeting Mr. Ingress Bell will read a paper on 'Architectural Criticism, with some Remarks on Architectural Exhibitions.'

## IS HAMMERSMITH SUSPENSION BRIDGE SAFE P

THIS bridge was opened for public traffic in August, 1827. The Act of Parliament for the construction was obtained in 1824. The time occupied, therefore, in the erection of the structure was only three years, and in this circumstance it will bear a favourable comparison with similar works more recently erected, and in times when the appliances of building and engineering science have been much more extensive.

Hammersmith Bridge was built after the design of W. Tierney Clark. It has three spans, the centre span being 400 feet in the clear, and 422 feet from centre to centre of piers. The side spans are each about 145 feet between faces of abutments and piers, and 156 feet between faces of abutments and centres of piers. The distance between abutments is 734 feet nearly, and the clear waterway 690 feet. The piers are built of stone and are very massive. There is far more material in them than would be put in piers built for a similar purpose at the present time. Each abutment is 45 feet long, 40 feet wide, and 15 feet deep, and is estimated to be over 2,000 tons. The platform is divided into a carriage way 20 feet wide, and two footways, each 4 feet wide, one on each side of the carriage way. There are eight main chains arranged in four pairs. The two pairs carrying the carriage way are about 21 feet 6 inches apart, and the chains on the outside of the footpaths are 5 feet from the centres of the other chains. The whole of these are supported on cast-iron rollers working in cast-iron frames fixed in the piers, at such a height as to make the versed sine of the curve of the chains of the centre span about 29 feet 6 inches. The chains fall nearly level with the roadway in the centre of the bridge. The roadway is about 16 feet above ordinary high-water level. As we have already said, there are four pairs, or lines, of chains, each pair for the roadway being formed of twelve links in section, six in the upper chain and six in the lower chain. Each link has a section of 5 inches deep by 1 inch wide, and as there are twenty-four of these, there is a sectional area of 120 square inches. Each pair of chains on the outside of the footways is formed of six links in section, three in the upper, and three in the lower chain. The links are the same size as in the other chains, and have 60 square inches sectional area, making the working sectional area of the whole of the chains 180 square inches. The links are connected together, and form the chains by means of short plates or links, with two bolts  $2\frac{1}{4}$  inches diameter passing through them, and screwed at each end to receive a cast iron nut or cap. The chains, plates, pins, and suspension rods were made of the best wrought iron, and all the pin holes were drilled, so that no injury was done to the iron by punching. Every link was proved separately by a tensile strain of nine tons per square inch, which is very near the limit of elasticity of good wrought iron made at the present time, and was, no doubt, considered in 1827 to be the limit to which iron could safely be strained before use.

The minimum section of each vertical suspension rod has an area of one square inch, and as there are four of these to every 5 feet lineal of roadway, there are 4 square inches section of wrought iron to carry about 10 tons, which is nearly the weight of the fixed and greatest moving loads. Therefore, the greatest strain per square inch on each of these suspension rods is only  $2\frac{1}{4}$  tons when the bridge is loaded. We cannot believe that the metal in these rods, or in the chains, has deteriorated, or become crystallised. If tried, there is very little doubt the quality of the metal would be found to be equal to that made at the present time. The bottom ends of these rods which pass through the roadway are made considerably thicker, evidently to provide for corrosion, as at this part they cannot be painted, and are always liable to moisture. In fact, the suspension rods are the strongest part of the structure.

It has often been stated that wrought iron changes its nature in course of time, when under the influence of strain and vibration, and becomes brittle or granulated, and loses its strength ; but it has never been proved that it does so, except, perhaps, when the strain extends or compresses the metal beyond its limit of elasticity ; even then it does not become crystallised, but simply deteriorated ; the fibres of the iron, as we may so call them, being drawn apart, or separated in proportion to the amount

of permanent set up to the moment of breakage. With brass rods under tension, and with or without vibration, it is very different. It is a well-known fact that they soon lose both strength and ductility.

The roadway was originally made of timber cross-beams suspended by the vertical rods, and longitudinal planking, 3 inches thick, covered with felt, pitch, and tar ; on this was laid another thickness of planking transversely. All the original timber beams have been replaced by cast-iron girders, and the whole of the planking renewed. The carriage-way is covered with a moderate thickness of granite metalling. The weight of the centre span was estimated to be 360 tons when it had simply a wooden roadway, but now the weight may be assumed to exceed 400 tons.

As to the weight per square foot given by a crowd there are various opinions. Mr. E. A. Cowper stated some time since, before the Institute of Civil Engineers, that he had packed a lot of workmen so close that the weight per square foot was 144 lbs. Mr. Hiemens says he got 140 lbs. by placing men on a weighing machine. Others give lesser weights per square foot. If we take 84 lbs. as the load per square foot, we shall find it ample for calculating the strength of a bridge to carry as many people as can go upon it, if they keep 'moving on.' But such a load is probably too much for Hammersmith Bridge, as it would give a strain on the main chains exceeding the 9 tons proof strain. In no case should the strain from the actual load exceed proof strain. In fact, it should be considerably under when safety of life is concerned. Many of our first engineers do not like the working strain to exceed one-half the strain of elastic limit, which, for good iron, is about 10 to 12 tons. The working strain, therefore, would be 5 to 6 tons. But a structure is always safe so long as the proof strain has not exceeded the elastic limit of the metal, and the strain from the loads is kept under the proof strain.

The weight of the superstructure of Hammersmith Bridge may be assumed as one ton per foot lineal ; this includes cross-girders, platform, metalling on roadway, railings, suspension chains and rods ; the strain on the chains, therefore, from this fixed load alone is four tons per square inch ; and when we add the moving load, say 74 tons per square foot, the strain on the chains will be fully 8 tons per square inch, equal 8-9ths of proof strain.

There can be no doubt every precaution will be taken on the day of the boat-race to insure the bridge not being weighted beyond its safe load. The bridge was designed and calculated for a given moving load, and this must not on any account be exceeded. It was not designed to be a 'grand stand' for thousands to crowd upon it to view a boat race ; therefore the thousands must be made to 'move on.'

## DRAINAGE OF THE THAMES VALLEY.

THE following Report of the engineers of the Thames Conservancy Board, on the alterations and improvements which are necessary to benefit the neighbourhood of Oxford by the relief of floods, has been transmitted to the Mayor of Oxford (Joseph Castle, Esq.) by the Conservators:—

### TO THE HONOURABLE THE CONSERVATORS OF THE RIVER THAMES.

Gentlemen,—The condition of the land drainage with regard to the escape of floods from the low-lying district which, to a considerable extent, surrounds the City of Oxford, and the remedy which might be applied to the existing defects, is the subject of the following report, in accordance with your order of February 7, 1867, directing us to report on any alteration or improvement we can suggest to benefit the locality.

The valley of the Thames which surrounds Oxford on the north, south, and west is not only subject to inundation, but is so circumstanced that the floods which visit it are retained for an undue and unnecessary period in a stagnant condition, saturating the ground and causing exhalations which unquestionably must be deleterious to the health of those residing within their influence. Nor is the evil confined to the periods of actual visitation by the floods, for even after the continued prevalence of dry weather, copious mists arise from the marsh lands lying near the city, not merely conveying the idea of insalubrity, but of necessity producing that result. We have no doubt that the existing defects have been produced in the course, it may be perhaps, of many centuries, by encroachments gradually made, for it is unquestionable that the founders of the cities and towns on the Thames exercised so wise a choice in the localities they selected that they would have avoided a spot open to the objections which now exist to the situation of Oxford.

The mode of treatment we suggest will have the effect of restoring the river practically to its original condition, and the result will be that while any existing defects in the navigation will be removed, the far more important evils arising from the want of drainage of the land and subsoil will be effectually remedied.

Careful personal surveys, aided by the accurate plans and levels taken by your surveyors with special reference to this subject, have convinced us that the evils we have indicated (which might indeed be enlarged upon) are capable of a perfect remedy.

The whole district is traversed by streams and water-courses, all ready to do their part in the required drainage, and with moderate cleansing and deepening, the formation of one deep arterial channel, to which they may all gravitate, is only needed to make them perfectly efficient.

This plan recommends itself alike by its completeness and simplicity, for it demands only the adaptation of existing means, presents no difficulties that may not be readily overcome, and is practicable at an expense that we believe will be considered moderate when compared with the great extent and value of the area over which beneficial results will be enjoyed.

For about two miles below Eynsham Bridge down nearly to King's Weir, the river consists of one deep and capacious stream, fully adequate to the passing of floods when a few shoals have been removed.

Just before reaching King's Weir the Wytham stream leaves the main channel. This stream is the first of numerous inefficient and circuitous branches by which the drainage of the valley is carried through the Oxford district for a distance of  $7\frac{1}{2}$  miles.



These branches have various confluences among themselves, and do not finally unite until just above Sandford Mill, whence the entire drainage of the valley flows on in a single broad channel nearly to Abingdon, a distance of 13½ miles from Eynsham Bridge.

The part, therefore, which in our judgment is that which must be dealt with in order to benefit the city and suburbs of Oxford, extends from King's Weir to Sandford.

King's Weir should be rebuilt on an improved plan. This work is necessary for the purpose of holding up the head of water required for the navigation from the Oxford Canal to Eynsham, and for the mills at Wytham and Wolvercote. Its power to discharge floods should be greatly increased.

Below King's Weir towards Godstow Lock the channel has been for many years disused for navigation, and is consequently in several places choked up. Such obstructions should be removed, and so also should the fishing bucks at Godstow Bridge. Godstow Lock might be repaired and lowered at a moderate expense to suit the improved level of the river; but it is now impassable, and the traffic of the river above King's Weir is carried for a short distance through the Oxford Canal, so that there is no absolute necessity for its maintenance.

Below Godstow Lock the river, as it skirts Port Meadow, is of ample width, but is greatly obstructed by shoals, which should be removed, together with Medley Weir. The Port Meadow, which is now even in summer scarcely raised above the surface of the river, would thus be effectually relieved of the flooding from which it suffers greatly.

The next material obstruction is presented by the Botley Bridge. The middle arch, with the massive piers on each side, should be removed, and a girder bridge of one span be substituted for the three arches. The stream down to Osney Lock should be deepened, and an efficient weir be substituted for the present paddle gates.

From Osney Lock to Sandford we recommend an entire alteration in the existing condition of the river. The main feature of this alteration would be the removal of Ifley Lock, as well as of that at Folly Bridge, and the somewhat extensive deepening of the bed of the river, which would be rendered necessary by taking away these locks.

This deepening would give full vent for flood waters by the main channels, and prevent their drowning the land by means of the various branches through which floods now direct their course.

Beginning at the upper end, it would be necessary to rebuild Osney Lock. It is too shallow even in the existing state of the river, not having a depth of three feet at times of low water, and needs extensive repair. The new lock should be eight feet deeper.

Dredging would have to be done between Osney Lock and Folly Bridge, and if practicable, the projecting points on the river cut off, as we have shown them on the plan. The Grandpont Mill, formerly the City Water Works, and the adjoining weir, situate just above Folly Bridge, should be removed, and that stream be made the main channel. The present Folly Lock should be so far altered as to serve for an additional escape for flood water.

The projecting angle at the upper end of the Christ Church Meadows should be taken off. From this point down to Ifley a considerable quantity of dredging will have to be done, and more particularly in the first half-mile below Folly Bridge, where the deepening of the river would have to be extended almost from side to side.

At Ifley we propose that the lock and mill should be entirely removed; this will immediately deprive the Weirs Mill of its head water. The mill itself is in a dilapidated condition, and its fall is small in the dry season, while, during wet periods, there is no available power.

The removal of Ifley Lock and Mill, taken with the proposed alteration at Folly Bridge Lock and the Grandpont Mill, will give an uninterrupted reach of water extending from Sandford to Osney, a length of about 3½ miles, very much facilitating navigation, and offering a great improvement for the amateur boating so much valued as a recreation for members of the University.

Between Ifley and Sandford the abrupt bend near Rose Island should be obviated by forming a new course for the river through the short neck of land at that spot. If thought desirable by the owners of adjacent lands between Folly Bridge and Sandford, it would be easy to widen the towing path so as to form a good carriage road with the large amount of surplus dredging taken out of the bed of the river.

When all these facilities for the escape of flood water come to be carried out, the millers at Sandford will, no doubt, assert that the floods would be brought down more quickly upon them. To obviate such a complaint, additional facilities for the escape of floods may be provided by increasing the width of the river where it is now somewhat confined below the several old locks and tumbling bays at Sandford. More dredging than has yet been done should also be effected on the shoals at Radley Common.

To render these works still more complete it would be very advisable to restore to the Culham Stream some of the flood-discharging capacity, which in the course of years it appears to have lost. It would be necessary to lower considerably the existing dam at the top of the stream, making provision by moveable tackle for the maintenance of a proper head of water for the navigation and the mill at Abingdon.

Having thus described the alterations in the main drainage of the valley, and the works which will be necessary to effect them, we will now state what will be their cost according to the following estimate:—

Nett cost of works for the relief of floods, 29,758*l*.

The result of the carrying out of these works would be equivalent to raising the whole surface now subject to inundation from 2 feet 6 inches to 3 feet above its present level.

Ordinary floods would be carried off by the deepened channel, and high floods would be enabled to pass away rapidly, and the stagnation of waters on the marshes and the saturation of the ground would be prevented.

With regard to the means of obtaining the amount required for carrying out these works, we find that about six thousand acres of land more or less liable to floods would derive benefit from the drainage facilities afforded by the suggested expenditure, in addition to the City of Oxford and a large area bordering upon the Thames marshes, not absolutely flooded.

Although we have adopted King's Weir as the upper limit of the district dealt with in this report, we are well aware that a similar treatment of the river beyond, subject as it is to extreme flooding, would be followed by most beneficial results; but as no survey has been made on which the proposed works could be indicated, we have not entered upon the consideration of the necessary works.

We have prepared a map and section to accompany this report, describing the district and works referred to,

And have the honour to be, Gentlemen,

Your obedient servants,

NATH. BEARDMORE.  
STEPH. WM. LEACH.

*Estimate in detail.*

For re-building King's Weir, the alteration of Botley Bridge, the reconstruction and enlargement of the weir near Osney Lock, removal of the weir at Grandpont Mill, adapting Folly Lock to the passage of flood water, removal of Ifley Lock, the Tumbling Bays, &c., at Sandford	£10,550
Dredging shoals and deepening the bed of the river from King's Weir to Sandford, making the new cut near Rose Island, and dredging shoals at Radley Common	12,500 0
Excavations in cutting off bends	5,000 0
Purchase of land so cut off, and compensation in respect of Grandpont Mill, the Weirs Mills, and Ifley Mill	6,875 0 0
	£34,925 0 0
Add 10 per cent.	3,492 0 0
	£38,417 0 0
Less for navigation works only in the district as described in our former Report	11,200 0 0
	£27,217 0 0
Improvement of Old Culham River and weirs above Abingdon	2,500 0 0
	£29,717 0 0
Nett cost of works for relief of floods	£29,758 0 0

REVIEWS.

L'ARCHITECTURE ET LA CONSTRUCTION PRATIQUES, &c. By Daniel Ramée. 1 vol. small 8vo. Firmin Didot & Co., Paris.

The author of this work is a well-known writer on architecture, having published, amongst other books on this subject, a 'General History of Architecture,' in two volumes, large 8vo., and a 'General Dictionary of Architectural Terms in French, German, English, and Italian.'

The volume before us is a very full and clearly written manual of practical construction, intended by the author, as he says in his preface, principally for those who require to build whether in town or country, and especially for proprietors who from any cause have not an architect within reach. We have what we believe to be a wholesome dread of mere popular manuals, which generally lead the uninitiated into difficulty rather than otherwise, and we recommend this little book on grounds different from those just stated. It is the work of a thoroughly practical man put together in a thoroughly practical manner, logical in its arrangement, and fully illustrated with more than four hundred simple and useful cuts. It forms an excellent manual for country gentlemen and also for builders and young architects, and is all the more suited to our own country from the fact that, unlike most French works on architecture, it deals chiefly, though not solely, with brick and timber work of the simpler kinds. The information is very minute and precise, while unnecessary theory and elaborate calculations are as much as possible avoided.

The work is divided into three parts: the first treats of materials—stone, natural and artificial, bricks, timber, iron, cements, colours, &c.; the second deals with the science of construction, the nature of the soil, excavation, foundations, masonry, carpenter's work, joining, iron-work, roofing, &c.; and the third with plans, elevations, sections, reductions, and modes of construction. In addition to these there is an appendix relating to estimates and valuation.

One important point to which the author has given great prominence is the preparation for foundations, to which, as he says, great attention has been given in France, and with marked success. Hitherto the details of this very important preliminary work have hardly been united in any single treatise, and M. Ramée, in collecting them from various sources and giving references to his authorities, has rendered an important service to young architects as well as many other persons.

An introductory chapter on practical geometry, mensuration, weights, density, equilibrium, &c., furnishes a capital series of lessons for carpenters, and workmen of all classes, as well as for emigrants, and for all indeed who are engaged in construction.

The following passage relative to bricks will illustrate the author's method of treating his subjects:—

It is very important to be assured of the good quality of the bricks to be employed: they should neither be cracked nor vitrified, but well and equally burnt. Three main points with reference to bricks have to be taken into account:—1. The power of resistance under pressure; 2. The appearance of the fracture, which should present an even texture, and a fine and brilliant grain, without cavities in the interior, and neither ribbony nor stony; 3. The exterior, which should be smooth and regular, the angles and edges sharp and straight. When the size of the bricks is equal throughout the mass, it is a proof that the brick earth has been well prepared, and the bricks generally well made. A brick when struck should give forth a clear ringing sound. Good bricks are generally of a dark reddish brown colour, and sometimes they show vitrified spots on the surface: it is not well, however, to depend too much on this last fact, for it is often only an indication of the amount of heat to which the brick has been subjected, while the clay of which the brick is made may be impure and ill prepared. Bad bricks are readily recognised by their reddish yellow colour, but still more by the dull sound which they emit when struck; their grain being soft, they crumble easily, and absorb water with avidity. A good brick should not absorb more than about one-fifteenth of its own weight of water; it should appear and in reality be dry. A brick that does not take up any water at all is too much burnt: the mortar adheres to it imperfectly, but it is a good conductor of heat. Such bricks may be used in damp soil and for pavements. When a brick left in water either scales or swells, it is of bad quality, and contains caustic lime. A brick which, being made red hot and then having water poured upon it, does not crack, is of extraordinary and rare quality; and those which have borne the effect of moisture and dryness during two or three winters without scaling or cracking are excellent. In order to try if bricks

will bear the effect of frost, let one be boiled for half an hour in a solution of sulphate of soda, saturated cold, and then suspended by a string over the vessel in which it has been boiled; in twenty-four hours the surface of the brick will be covered with small crystals: the brick is then to be immersed again in the solution until the crystals disappear, and again suspended, repeating this operation for five days, the crystals reforming after each immersion. If after this treatment a number of particles of the brick are found at the bottom of the vessel containing the solution, the bricks are incapable of supporting the effects of frost.

The description of the method of forming walls of clay as practised in the south and other parts of France may be of interest in country places; this is known in France by the name of *Pisé*. This method was employed by Hannibal in Spain, and Pliny the elder records having seen the constructions two centuries afterwards. Vitruvius says that *Pisé* was used at Marseilles, with straw, to form tiles. In some cases, instead of clay, lime and sand, with pounded brick or forge cinders and a little cement, are used for making *Pisé*. The best proportions for this latter kind of concrete are, according to the author, five or six parts of sand, one part of brick or tile pounded, one mixed lime, and a quarter or one-third part of cement. It is either beaten down hard in its place between guide boards, or formed into blocks for building. *Pisé*, however, requires a stone or other foundation. It will not bear moisture: it is, therefore, only used in the south, while the other compound is common to the northern parts of Europe.

M. Ramée is evidently acquainted with England, and this fact recommends his work to our readers. The following extract will illustrate this, and also give an idea of M. Ramée's view respecting house-building:—

Since railways have facilitated travelling, a small number of intelligent architects have abandoned old traditions and gone abroad for inspiration, and especially to England, where the country houses have a special character of their own, perfectly adapted to their purpose. During the years following the Revolution of 1848 a number of very pretty houses grew up in the environs of Paris, some regular in design and others picturesque, but costing too much for persons of moderate means. These houses exhibit a fertility and richness of taste previously unknown in France. But this taste still leads to much unnecessary expense, and adds nothing to the comfort of the house. Amateur builders should understand that with plain surfaces of good proportions, simple string courses or mouldings to divide the storeys horizontally, and a vigorous cornice with a bold projection, façades of good taste may be produced, agreeable to the eye of one accustomed to look upon the finest monuments.

M. Ramée is a staunch admirer of the *simplex munditiis*, and in the case of domestic architecture he is beyond question right. He tells his countrymen that for cottage architecture they must go to Loudon, Papworth, Robinson, Goodwin, and other English writers; and we can return the compliment by saying that for practical hints on construction our countrymen will do well to consult M. Ramée's work.

**SMOKING FIRES; THEIR CAUSE AND CURE.** By the Rev. Alex. Colvin Ainslie, M.A., Vicar of Corfe, Somerset. London: Longmans. 1869.

It is a curious circumstance that, in an age of consummate science—fertile in appliances for the comfort and luxury of life, and lavish of skill and resource in all that concerns the construction of buildings—the homely problem of the chimney should yet challenge a satisfactory practical solution. We do not allude to the purely artistic question of the treatment of a chimney-top; this may be, often is, admirably dealt with, at the same time that the true arrangement of fire-place and flue is a mystery so obscure, that the result, as to efficient draught or smoking, remains in doubt until the housewarming. Happy the householder who finds his chimneys at once finished in true architectural taste and perfectly adapted to their humble but important functions! His is a rare exemption from the smoke doctor, with his unsightly superstructures of huge pandean pipes, or creaking crows, or after thoughts in zinc, protruding from the ashlar flues like coral insects—wriggling, or with feelers outspread—and the like melancholy signals of distress. To approach the metropolis by a high-level railway, or to look down upon any part of London from the upper windows of a lofty hotel, is to have ocular demonstration of the general failure of chimneys, as designed in the first instance, to accomplish the task of getting rid of the smoke. How far the metal excrescences attain the end desired, we will not at the moment enquire. The point just now under consideration is, rather, what such extensive doctoring portends;—a prevalence of originally faulty chimneys—a prevalence that would surely not endure if a fair degree of pains and ability, such as we commonly observe in all other necessary details, were given by the architect to the thorough practical mastery of the smoke question. Problems seemingly harder have been taken in hand and solved; as the consumption of smoke, or the warming of buildings by means of air; water; and stoves. But the preference of the million, in this country at least, where the fireside seems almost essential to the idea of home comfort, as well as a regard to cheapness and simplicity of construction, will probably cause the open fire-place to hold its position in the large majority of dwelling-houses, in the face of all admonitions as to waste of fuel. The old question is therefore sure to present itself again and again, requiring (under certain stringent penalties) a definite and conclusive answer. Such answer the Rev. A. C. Ainslie essays to give, in the manual now on our table.

Commencing with a brief statement of first principles regarding air and its properties, he lays down the conditions essential to the maintenance of a steady draught up a chimney, and then proceeds, with remarkable distinctness and method, to describe and explain various causes of smoke, of which the following is a summary:—

- I. Want of sufficient height in the flue.
- II. The outlet of the chimney being placed in an exposed and cold situation, while the air with which the fire is supplied is drawn from a warmer and more sheltered region.
- III. Excessive width in the flue, by which a large volume of cold air is drawn in and allowed to lower the temperature of the ascending column.
- IV. Low temperature of the interior of the flue in comparison with that of the external air.
- V. Humidity of the air.
- VI. Too accurate fitting of the windows and doors and joints of the flooring.
- VII. The draught of one fire injuring that of others in the same house.
- VIII. A current caused by the heat of the fire circulating in the room.
- IX. A flue of insufficient size.
- X. A foul flue.
- XI. Displacement of masonry, or accumulation of mortar within the flue.
- XII. The sudden obstruction of the draught by gusts of wind entering the chimney top.
- XIII. Increase of density of the air at the chimney top, due to the effect of wind in chimneys rising from the eaves of roofs.
- XIV. Draughts within the room which throw the smoke out of the influence of the ascending chimney current.

Eight or nine pages are devoted to the symptoms indicating the cause of smoke; and the author follows up his diagnosis with a plain and highly practical chapter of remedies suited to the special ailments indicated. The discourse winds up with an application, in the form of suggestions to architects and house-builders, which are (with perhaps one exception) well worthy of attention.

Some of Mr. Ainslie's hints are such as commend themselves at once, e.g.: that the flue should be large (not too large); of circular section (say glazed 12-inch drain-pipe), to secure thorough sweeping; with avoidance, as far as practicable, of elbows and bends; that it should be carried high enough; and that, if it pass through the eaves of a high-pitched roof (a position to be eschewed), it should finish at a higher level than the ridge. The evil of external chill (less generally recognised) is pointed out; with an injunction that the masonry of chimneys in external walls should be as thick as possible. It might have been added, that metals, being rapid conductors of heat, are on that account bad material for chimney-tops; also, that comfort and economy are generally best consulted by keeping fireplaces and flues well towards the centre of a building, and away from the external walls. Our author gives sound advice as to the inlet to the flue being narrow (the opposite of the old chimney-corner arrangement); and the sides of the grate so contracted that all air that ascends the chimney must first pass through, or directly over, the fire; and describes modifications of the 'blower,' well suited to wide grates and fireplaces with hobs. The suggestion that the kitchen flue should be at the north or east end of a stack is sagacious; also, the recommendation to supply every fire with air for its own consumption, drawn from the coldest side of the house. The arrangement proposed with this aim is ingenious, and no doubt capable of easy and effective application in a large proportion of cases; but the question of the exact position, size, and adjustment of the air inlet near the hearth appears to us yet open to further investigation: and it must not be forgotten that any such arrangement diminishes the efficiency of the open fire as a ventilator of the room.

One injunction of our author's ought, we think, to be received with extreme caution, viz.:—'In chimney stacks with many flues, let their outlets be at different levels.' Were this plan followed with common chimney-pots, open at the top, winds from a certain quarter might send gusts down those at the lower levels. A case came within our own knowledge, where a chimney-top, the edge of which was finished with a rim of triangular peaks, had lost one of those adornments. The result was a smoky chimney whenever the wind set in the quarter next the damaged side. The remedy, at once simple and successful, consisted in breaking off another peak, and thus making a second gap opposite the first. Now, a short chimney-pot, close to a tall one, is under the same sort of disadvantage as that just referred to, where the wind passing the gap on one side was arrested by the peak on the other. Moreover, in calm weather, if one of two chimneys in juxtaposition be shorter than the other, the upcast in the latter is very apt to set up a downcast in the other. An instance, for which we can vouch, well illustrates this tendency. In a house containing offices variously tenanted, with a common chimney-stack, the flue of a particular room suddenly took to discharging dense volumes of smoke at the wrong end. In vain the fire was fanned and stirred; windows thrown up; doors set open: the air of the room, filled with sulphurous fumes, became as yellow as a dense London fog; while 'free carbon,' in the guise of a swarming Liberia of blacks, descended on books, papers, and furniture, and evicted the lawful occupiers of the room. On investigation it was found that an adjacent flue in the same stack had been raised a foot or two higher, and thus caused a downcast in the offending chimney; the inequality of level was redressed, and the nuisance ceased at once.

One point to which we do not find distinct reference in the work before us, is the covering over the tops of chimneys as a safeguard against down draughts, as well as a protection from rain and the attendant damp, that not only interferes with fires, but impairs the draught of flues. On the whole, Mr. Ainslie's little book is remarkably well thought out, clearly expressed, sensible and practical, and arranged in so systematic and orderly a manner as to afford singular facility to those who consult it.

## ILLUSTRATIONS.

### SOUTH TRANSEPT, CHURCH OF ST. PIERRE, LISIEUX.

ON the eastern side of the 'Grande Place,' or market-place of Lisieux, surrounded on two sides by picturesque old half-timbered houses, and on the third by the old Bishop's Palace, now the Sous-Préfecture, a Renaissance building of very good type, stands the ancient cathedral church of St. Peter, a church which, in many respects, is well worth the careful study of an architect; the present fabric dates from the middle of the thirteenth century, and contains much good work. The old church, said to have been erected about the middle of the twelfth century, was destroyed by fire in the early part of the thirteenth century; but there still remain of this original building a part of the choir and the transepts. The subject of our illustration, which is at the end of a narrow alley, hemmed in by comparatively modern buildings, is the south transept, especially noticeable for its bold and vigorous detail; the upper external gallery, between the two staircase turrets, is of later date than the other work, but the general arrangement of the triple lancets and wall-arcading under is exceedingly bold and good. There is a late Lady Chapel, built in the fifteenth century by Bishop Cauchon of Beauvais, as a sort of peace-offering for the unworthy part played by him in the condemnation and execution of Joan of Arc.

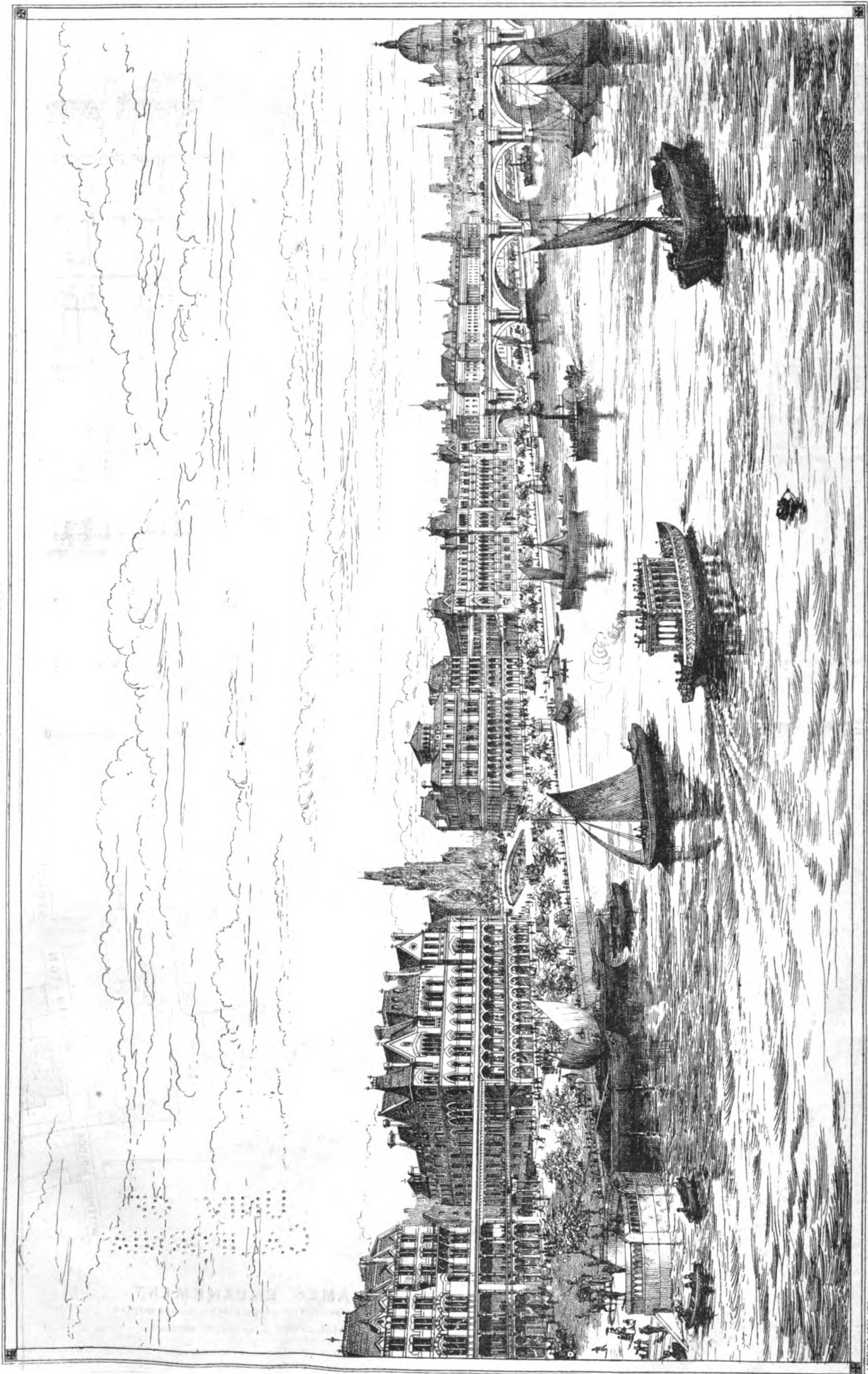
ROBERT W. EDIS.

### BUILDINGS ON THE THAMES EMBANKMENT.

'THE Embankment site has never been considered,' were the words of Sir Charles Trevelyan in his important letter on the subject of the Law Courts' site—a letter which has led, not only to the reopening of the question of the arrangement of the Courts themselves, but has also directed

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The Architect. March 13<sup>th</sup> 1869.

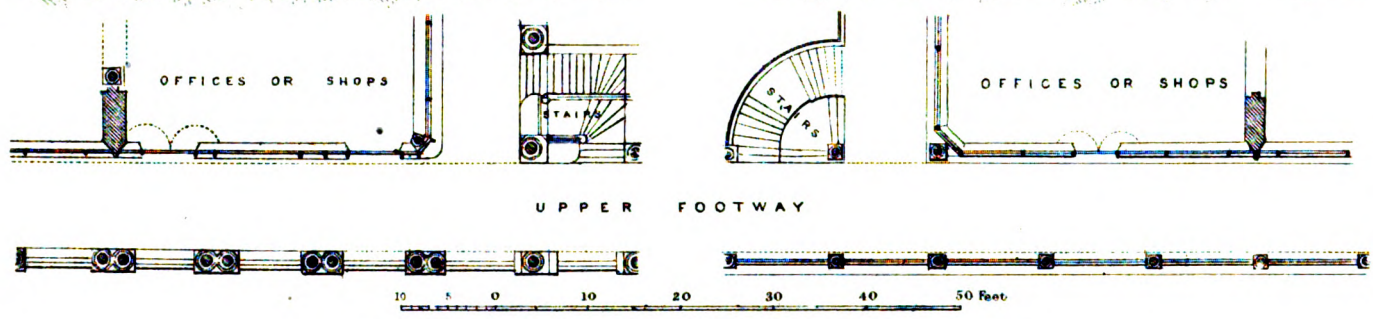
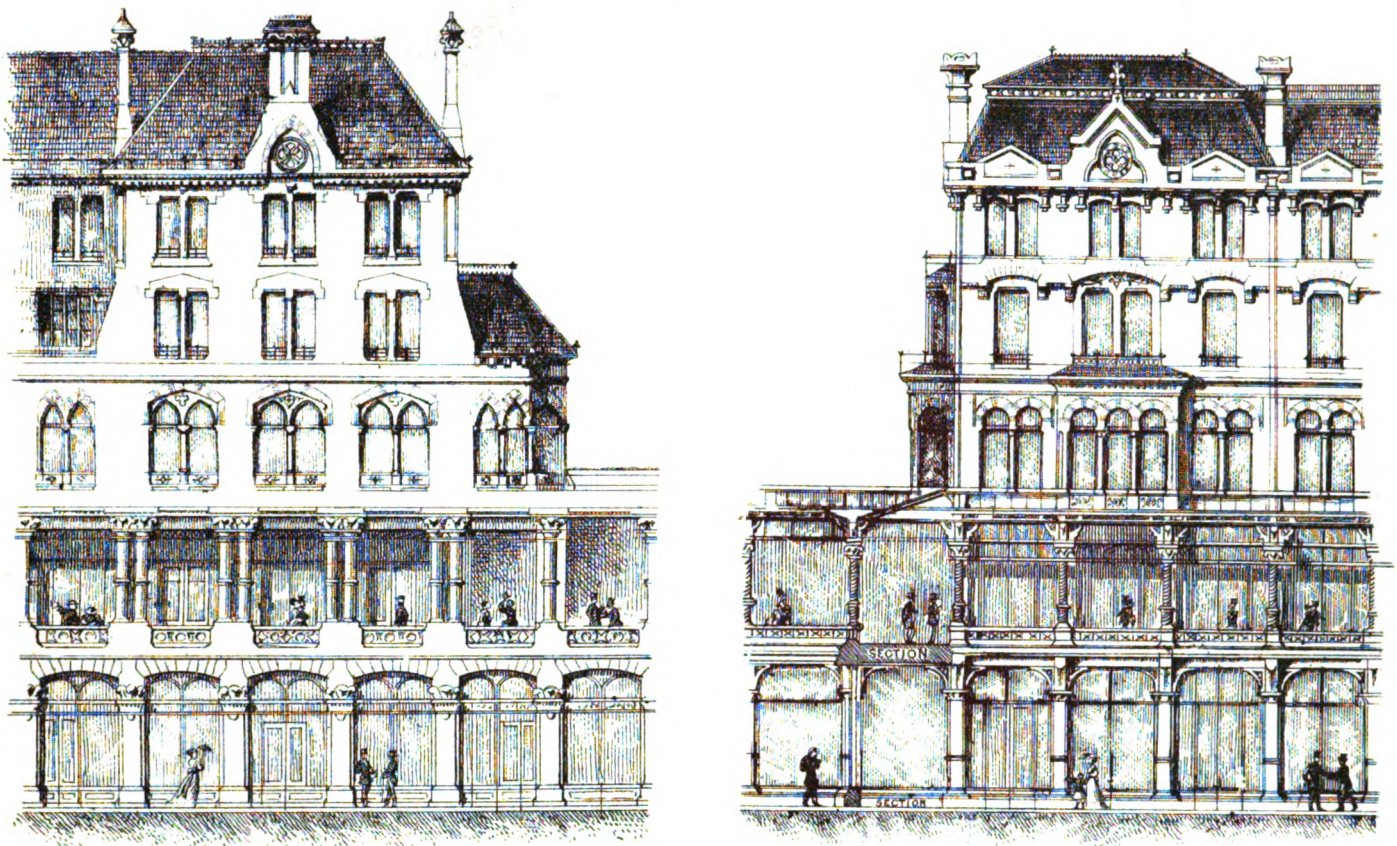


J. ENRIQUE & SONS, LITH.

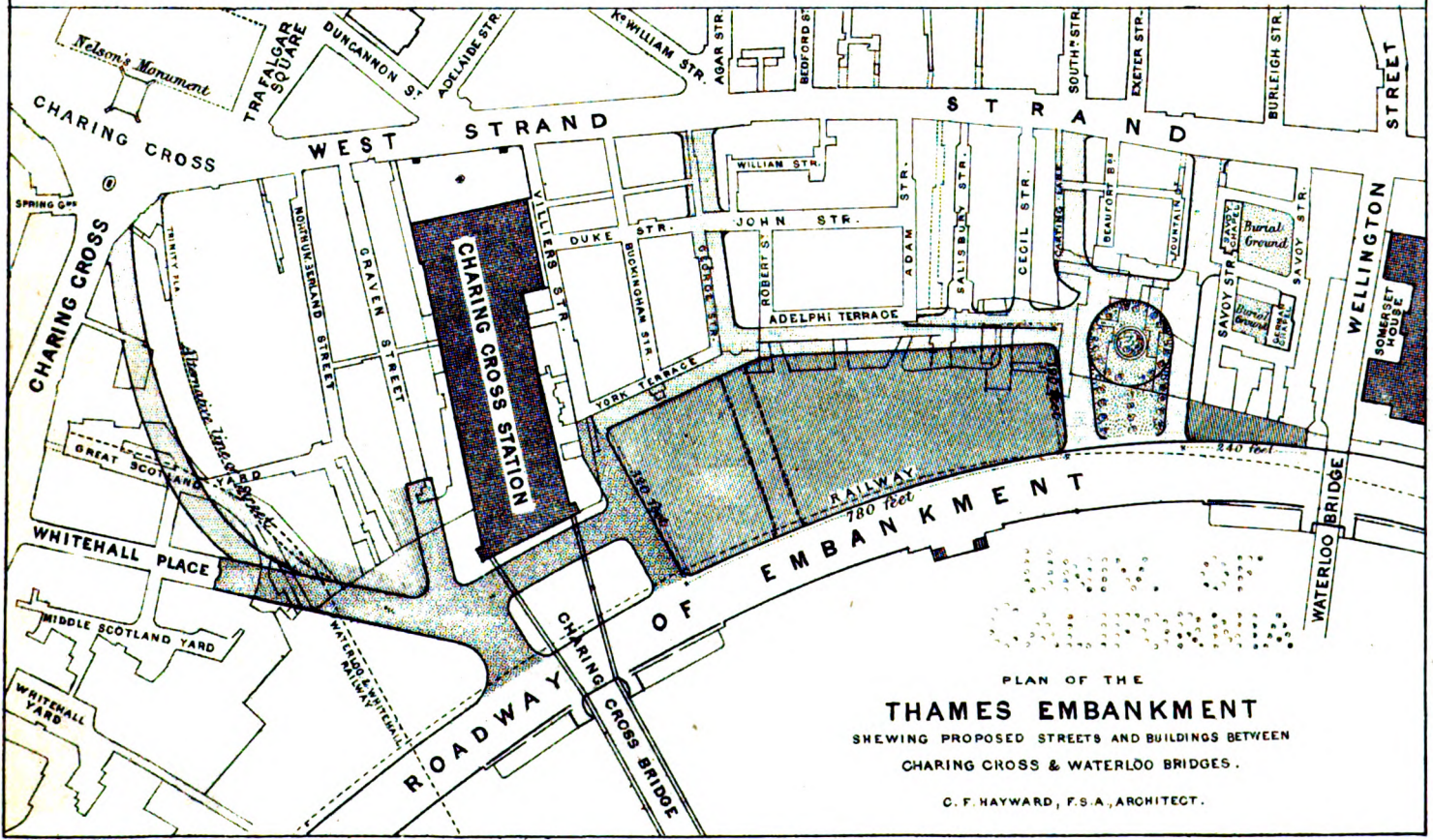
Printed by R. W. Baynes & Co. London, E.C.

**BUILDINGS PROPOSED TO BE ERECTED ON THE NEW THAMES EMBANKMENT BETWEEN CHARING CROSS AND WATERLOO BRIDGES,**  
DESIGNED ON THE SYSTEM OF AN UPPER AND LOWER LEVEL OF SHOPS AND FOOTWAYS - SPECIALLY TO CONNECT THE HIGH LEVEL STREETS AND TERRACES OF THE STRAND AND ADELPHI. CHARLES FORSTER HAYWARD, F.S.A., ARCHITECT.





BUILDINGS PROPOSED TO BE ERECTED ON THE THAMES EMBANKMENT  
 DESIGNED ON THE SYSTEM OF AN UPPER AND LOWER LEVEL OF SHOPS AND FOOTWAYS.  
 CHARLES FORSTER HAYWARD, F.S.A., ARCHITECT.

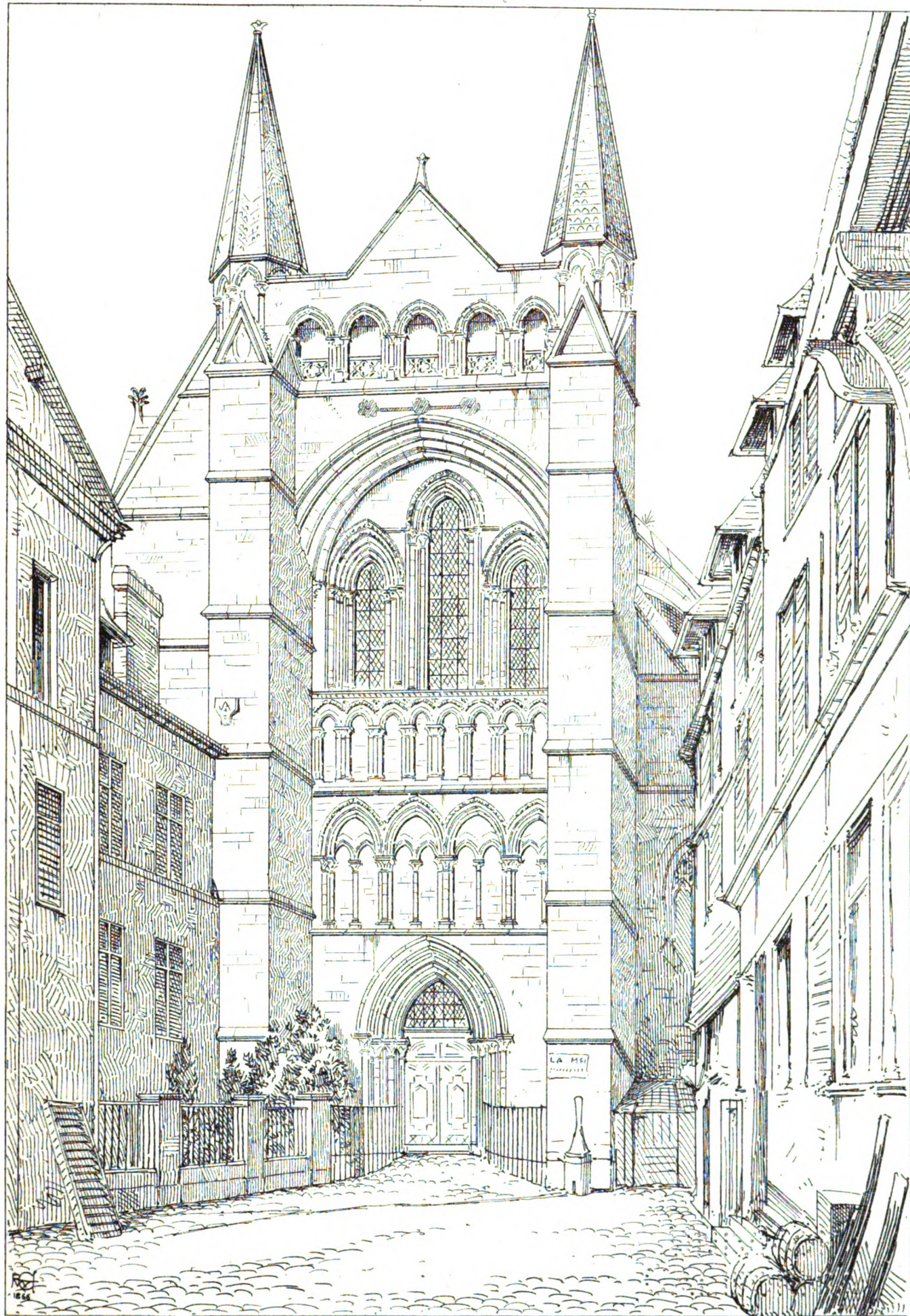


PLAN OF THE  
**THAMES EMBANKMENT**  
 SHEWING PROPOSED STREETS AND BUILDINGS BETWEEN  
 CHARING CROSS & WATERLOO BRIDGES.  
 C. F. HAYWARD, F.S.A., ARCHITECT.



70 7101  
ANSON, I.A.





VIEW OF SOUTH TRANSEPT CHURCH OF ST PIERRE LISIEUX.

DRAWN BY R.W. EDIS.



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attention to the Embankment as *the site par excellence* for Government offices and buildings.

We have already echoed this text and 'improved' it for the benefit of our readers; adding our quota to the arguments in favour of the change.

In order, however, more fully to explain the idea and enlarge still further on the subject—directing attention more especially to details—we, this week, present to our readers a view of one part of the Embankment which HAS BEEN CONSIDERED and appropriated, (on paper,) as a site for Government offices; as also for other buildings of a semi-public nature, such as clubs, museums, banks, &c., as would be of a character suitable to combine with such larger public buildings to form a continuous and appropriate line of frontage towards the river on the western side of Waterloo Bridge, where the chief amount of land reclaimed from the Thames is situated.

This design, the work of Mr. Chas. Forster Hayward, F.S.A., will serve to show how the opportunity suggested by the Embankment Bill of 1861 was at once seized by at least one practical artist, and appropriated to satisfy one of our great metropolitan wants, viz., good open accessible sites for important buildings both of a public and private nature.

True it is that we owe much of our modern street improvements to the positive necessity of finding such sites along our crowded street frontages; but at the same time this necessity of purchasing large extents of already closely-occupied ground, as well as the obligation of compensating everybody for every kind of change, must have gone far to prevent many a project from being properly carried out, at least in the most suitable locality, and this fact goes a long way to counterbalance the improvements referred to. But on the Embankment, sites are simply waiting to be appropriated and used, while localities and streets adjoining are demanding improvement.

In the careful adjustment of the existing levels, and the skilful arrangement of them, so as to prevent any unnecessary climbing, lies the chief problem in the design of the buildings for these sites, and this problem has been worked out in the design before us. To carry on the terrace of Somerset House is perhaps only a natural idea; but in Mr. Hayward's design the terrace is carried *within* the building—that is, behind an arcade—which itself stands upon the lower, and carries the upper wall, similar to the upper gallery or arcade of the Doge's Palace at Venice—one of the most charming water frontages possible. This upper arcade is continued *through* two other buildings, and then returns round the western end and northern side of the block.

Since this design has been made, the Embankment with its enclosure walls and landing stages has been completed, and the trees planted; but as yet no use has been made of the roadway, owing to the railway company having possession, and no attempt has been made to connect the various existing streets, while the new projected viaduct, to run from the foot of Hungerford Bridge to the centre of Lancaster Place, level with Waterloo Bridge, is to be abandoned, or, we may say, is so likely to be given up under the searching inquiry of Lord Elcho's Committee, that practically it is abandoned already. This has rendered possible a revision, or rather a development, of the plan which we give, as Mr. Hayward's idea how the arrangements he originally proposed should now be carried out. As the plan shows, the block available for building is large enough for one edifice, sufficiently isolated to be careless of its connection with the rest of the neighbourhood; but if the viaduct were carried out, what is now desirable would have been almost a necessity, and hence the original importance of the idea is evident. First, it is important that communications should be made between the Strand and the Embankment for vehicles. This is done by the open space advocated by the plan originally—called Savoy Garden, or Savoy Square or Piazza, consisting of a sloping oval garden or paved area like Trafalgar Square, with roadways each side of it (one of which alone might be constructed if thought enough, just as St. Martin's Lane is the only northern roadway out of Trafalgar Square,) but both of which are proposed as most desirable for the traffic east and west. This square will have for its eastern boundary the walls of the old Savoy Palace and the Savoy Chapel and burial ground, while the burial ground of the German Chapel, and all the rest of the upper levels or slopes of the Savoy, can remain untouched. On this Savoy Hill, however, the plan does not show Mr. Hayward's suggestion for erecting a building to correspond with Somerset House, in which one of the principal ends of the façade, with that most charming feature the open colonnade on an open archway, would be repeated, and form the centre of the composition, while the terrace would be continued in the front and return on the Savoy walls, which, as has been said, form the eastern boundary of the proposed new piazza. The building shown is in fact a special design, with open colonnaded façades and a terrace terminating at the mid-level, as it may be called, where the roadways on each side of the open space unite in a terrace.

At this mid-level a street, inclining upwards, would lead to the Adelphi Terrace, taking up on its way the present ends of Cecil Street and Salisbury Street, while another sloping downwards would connect, if thought desirable, the lower street and arches of the Adelphi, which, however, have another exit in a westerly direction. These arches and vaults are at present most disreputable places—the haunts of the homeless and the vile; but they are capable of being converted to the most useful purposes as shops or dwellings, communicating with York Place and George Street, enlarged as it is shown on the plan.

It will be seen what a magnificent plot of ground would remain, with a continuous frontage to the river of 800 feet, and a return frontage to the piazza of 300 feet on the east, while on the western end there is a frontage of 400 feet. This is the plot for a building of large and important character, which it was impossible to obtain while the projected street or viaduct to Lancaster Place was likely to be carried out. If the first floor of this large building or the buildings on this frontage are carried out as suggested in the design, a direct footway from the upper levels all round the buildings, communicating with the east and west ends of the Adelphi, can be established, and, crossing over the mid-level of the Piazza, a passenger can reach the new westerly extension of the terrace, in front of the new Somerset House, and pass

over the bridge to the old Somerset House, without ever descending to the Embankment level. If only shops and offices were to be erected, it would be a valuable system to adopt, but with important Government offices easy access on the chief level might be essential. In addition to the direct communication northward—so much required—gained by the new street opposite to Southampton Street, to Covent Garden; the dotted lines running through *the site*, dividing the plot into two, show a continuation of George Street connecting with the important streets on the north side of the Strand by Agar Street, &c.

As to the Charing Cross communication, this is shown by the lines of the plan, and is a self-evident advantage, and one not difficult of execution.

The view of the proposed buildings is as they would appear to a spectator standing on Charing Cross Bridge, and looking along the northern shore shows the terraces at Buckingham Water Gate, the Adelphi, and the district called the Savoy, as far as Waterloo Bridge:—Somerset House being seen beyond,—and the Embankment passing beneath the first arch, continued on to the Temple. Several towers and spires of the City with the Dome of St. Paul's occupy the extreme distance.

Some idea can thus be obtained of what the banks of the Thames may become if only ordinary care be taken in the manner of laying out the reclaimed ground, and selecting the class of buildings to be put upon it, without any extravagant architectural conceptions, or any expenditure for mere ornament; for although designed with considerable novelty, and it is hoped with a certain degree of architectural propriety, these buildings do not pretend to emulate the Palaces of Venice, but are supposed to be appropriated to such purposes as shops or offices, chambers or residences, with here and there a Bank or Insurance Office, an Hotel or Clubhouse, taking a more prominent position in the line of frontage. The variety of elevations must be taken to show the applicability of the system of building advocated, to any style, however simple or elaborate.

The proposed buildings, which are shown in elevation, are all designed with an *upper level* of footways, with shops, offices, &c., in addition to those on the ground-floor, and level with the pavement of the Embankment. These upper footways are carried along continuously over the lower series of shops, &c., and by light foot-bridges over the intervening streets, *throughout the whole river frontage* (though not in front of the Savoy New Church and Gardens), and *backwards also along the sides* of all the blocks of houses, so as to communicate on a level, or nearly so, with all the streets which run down from the Strand to the river; while steps or inclined planes at each angle of the blocks of buildings afford access to the lower level of the Embankment itself.

By this system increased value would be given to the new frontages; and while it is applicable not only to the Embankment, but also to any of our crowded thoroughfares, it should be remembered that the adoption of this manner of building, while *doubling the number of shops*, would at the same time *double the accommodation for foot passengers*, besides providing for the safe and expeditious crossing of streets.

The main idea of the system, however, is not entirely new, having been carried out at Chester and elsewhere for three or four centuries at least; while in these towns, at the present day, new houses are being built upon the old plan, though with increased magnificence and with some modern improvements; and by the use of light iron columns and girders for the wide bridges, &c., and other modern improvements, these 'Rows'—to use the old term—would form promenades as pleasant and popular as are to be found in any city in Europe, and it is thought as *profitable* in a pecuniary point of view as the arcades and 'passages' of Paris and elsewhere.

At the foot of Charing Cross Bridge the proposed open space would be laid out as grass plots, and enclose fountains and statues; while into this space the wide thoroughfares of Whitehall Place extended, and of the new street from Charing Cross, following the boundary walls of Northumberland House and gardens, would enter; and so, it will be seen, without great expense, magnificent communications would be opened with the new Embankment Boulevard.

### THE SPEECH OF M. THIERS.

THERE was a full house of the *Corps Legislatif* on the afternoon of February 23, when M. Thiers, amid deep silence, rose in his place to denounce M. Haussmann's financial system for the City of Paris. He began by alluding to the improvements effected by M. Rambuteau, Prefect of the Seine under Louis Philippe, briefly pointing out how much that gentleman managed to do with fifty millions of francs. He then went straight to his subject, comparing the thrifty management of M. Rambuteau with what he called the reckless extravagance of his successor in office, and proceeded to examine what had been done in Paris during the last 20 years, dividing it into three systems or networks. The first of these systems met with M. Thiers' unqualified approval. This comprised the creation of the Boulevard Sebastopol (the Rue Rivoli had already been sanctioned by the Provisional Government of 1848) and the construction of the Halles Centrales. But he contended that if all the other improvements were already contemplated at that time, it would have been more honest to have said so, rather than to have appeared satisfied with the original comparatively trifling loan; and he compared M. Haussmann to a dishonest architect, who deceives his client by committing him to enormous outlays step by step, instead of at once informing him of his liabilities. 'We yielded to deplorable enticements, which are the cause of the present serious state of our finances. We might have had works of real utility: the communication between the various railroads and the centre of Paris; the much-needed improvements of the Rue Lafayette, the Rue Montmartre, the Rue Richelieu, and the Rue du Bac. Instead of this, however, we have so-called improvements which appeal to the imagination rather than to common sense, and which are utterly and entirely useless. We have the newly decorated Place du Trone, and the Boulevard du Prince Eugene, which cost 75 millions, was opened up in order to give light and air to a part of the city which had plenty of light and air already. The same may be said of the Boulevard Haussmann

—what reason was there for spending another 80 millions there? None whatever! What object has the *Allée* of the Alma, of Latour-Maubourg? Why the *Place de l'Opéra* or the *Rue Molière*? All these have cost 300 millions of francs! The only really useful street is the *Rue Turbigo*, and that cost 80 millions, and this was after all not so necessary as the widening of the *Rue Montmartre*, for which nothing whatever has been done.' (Our readers are aware that this latter street, leading to the Halles Centrales, is one of the most frequented in Paris, but is inconveniently narrow in many places.) M. Thiers continued:—'M. Rouher has been called the Vice-Emperor, but with injustice to that gentleman; the real Vice-Emperor is M. Haussmann, as is proved by the institution of the "Caisse des Travaux," and by his arbitrary proceedings throughout.' Continuing his criticisms and strictures, the speaker approved of the *Rue Lafayette*, connecting as it does the terminus of the Northern and Eastern Railroads with the heart of Paris; and he was glad to think that improvements were at last in progress in the *Faubourg St. Germain*, but he thought that the widening of the *Rue du Bac* might have been effected with more economy than the construction of the *Rue de Rennes*, which is entirely new from end to end. 'Instead of economy we have the *Trocadero* (laughter), which cost 20 millions! The *Boulevard Haussmann* is being continued to the *Boulevard Montmartre*, through the finest and most expensive part of the city, and this costs us another 50 millions! Then the *Rue Raumur* and the *Rue Turbigo* are to be connected with the *Place de l'Opéra*—why pull down all the splendid houses between the *Rue de la Paix* and the *Bourse*? Why have a new street from the Tuileries to the Opera? It cannot be to meet the convenience of the Emperor, for when his Majesty wishes to drive to the Opera, the distance will not be much more by way of the *Rue Rivoli*, and past the foot of the Napoleon Column. (General laughter.) Gentlemen, it is no subject for mirth, for I now come to the principles which all this involves. The first two "systems" to which I have alluded were carried out by means of loans, but when this third "system" of improvements was commenced, so roundabout a method of procuring means was no longer considered necessary; the holiest fundamental principles were violated in such a manner that we can no longer be said to be living in a free country. (Applause from the Opposition side of the House). One single individual had the audacity to borrow 465 millions, without anybody knowing anything about it.' M. Thiers then went on to show that for the city of Paris alone a debt of a thousand and eighty-three millions had been contracted since 1852—about forty-three millions sterling—discussing the increase of income which is supposed to meet this expenditure, and gave a vivid description of the increase of rent and provisions, showing how the list of annual bankruptcies had increased to a frightful extent as a natural consequence of this 'insane wholesale destruction of house property.' Thirty years ago 15,000 to 20,000 francs was considered a high rent for a shop; to-day there are shops held at 80,000 and 90,000 francs per annum. The square metre of land used to cost 500 to 600 francs; now it is not always to be had for 1,100 francs. The price of wages had increased, but so had also the price of provisions, and therefore the condition of the labouring classes is now no better than it was. 'It were an easy task to criticise your works from an æsthetic point of view,' he continued; 'straight lines of roads are easy enough in America, where land costs a dollar per square metre, but there are no straight lines of streets in Rome, in Florence, in Venice, or in other ancient cities, where the attempt would cost fabulous sums of money; such an outlay could not be justified for a moment in order to obtain the doubtful advantage of perfectly straight lines of streets.' In concluding his powerful speech, of which we have necessarily only given extracts, M. Thiers was at a loss to advise what should be done; what had been done could not be undone; there is no help for it—the money must be paid. Nor would it be wise to stop everything all at once; it would be dangerous to deprive the thousands of workmen, who had been attracted to Paris, suddenly of their bread. But he could not sit down without making an effort to reconstitute a Municipal Council, such as existed under Louis Philippe, by which means Paris would again have the same right hitherto possessed by all other cities of France, namely—that of being able to control its own expenses. M. Thiers resumed his seat amidst the loud applause of the Opposition.

### METROPOLITAN BOARD OF WORKS.

THE weekly meeting of the Metropolitan Board of Works was held on Friday, March 5. The Works and Improvements Committee reported that they have considered a letter referred to them from the Office of Her Majesty's Woods, &c., on the subject of the Park Lane Improvement Bill, and intimating that the Lords of the Treasury have given directions for the preparation of clauses for insertion in the Bill for securing the payment of compensation to the Crown and its lessees and tenants of the houses and buildings in Hamilton Place, not only for the property which may be taken for the measure, but also for the diminution in the value of all the houses in consequence of Hamilton Place being converted into a thoroughfare, whether compensation is or is not payable in this respect under the Lands Clauses Consolidation Act, 1845. The committee, having regard to the experience which the Board have obtained on former occasions in relation to special clauses of this nature, are of opinion that the propositions contained in the letter should be resisted. The Board did not consider they would be justified in giving the special privileges claimed, and must resist the insertion of the clauses proposed. The chief engineer (Mr. Bazalgette) presented his monthly report on the progress of the Thames Embankment Works. Mr. Newton moved, 'That a standing committee of fifteen members be appointed, whose duties shall be to watch all proceedings in relation to Bills in Parliament affecting the Metropolis, and to advise the solicitor thereon, also to take note of and report to the Board from time to time all questions affecting the constitution of the Board and the general interests of metropolitan ratepayers.' Mr. Le Breton seconded the motion, which was agreed to. Mr. White moved, 'That it be referred to the Works and General Purposes Committee to consider and report on the desirableness of forming an approach road to the Thames Embankment between Richmond Terrace,

Whitehall, and the Whitehall Club, with a view to the relief of the excessive traffic of Parliament Street, the approach to Westminster Bridge, and the Houses of Parliament.' The motion was put and agreed to. A return moved for by Colonel Sykes, and recently published, shows that the total expenditure to July 1, 1868, amounted to 3,178,716*l.* for main sewers and ordinary expenses, 125,400*l.* for the approach to Covent Garden, 597,072*l.* for Southwark and Westminster communications, 48,616*l.* for Victoria Park approach, 70,844*l.* for Finsbury Park, 87,964*l.* for Southwark Park, 172,482*l.* for the Fire Brigade, 128,520*l.* for improvements in Whitechapel, 67,379*l.* for improvements in Holborn, and 112,532*l.* for Kensington improvements, 3,967,184*l.* for metropolitan main drainage, 1,599,052*l.* for the North Thames Embankment, 846,010*l.* for the Southern Embankment, and 1,264,611*l.* for Mansion House Street. The total of sums received annually from the several vestries and district Boards and from the City of London for sewerage works and general expenses amounted to 222,221*l.*, for main drainage to 201,441*l.*, and for the Fire Brigade to 31,795*l.* and 33,742*l.* for 1867 and 1868 respectively.



Correspondents are requested as much as possible to make their communications brief. The space we can devote to Correspondence will not usually permit our inserting lengthy communications.

### BUILDING CONTRACTS.

SIR,—It would have been more satisfactory if the 'London Engineer' who addressed you on the 13th February favoured us with some of his reasons for preferring 'to have as little to do with lawyers as possible.' If it arose from a personal and perhaps unaccountable dislike, we need not trouble ourselves much about it; but if it was intended to indicate what ought to be the general practice in business matters, we should have had further particulars; for however architects may be averse to it, it seems to me that enough has been already said to make it incumbent on both employers and builders to have 'a more general employment of lawyers in preparing contract deeds than there is at present,' and not in the preliminary contract deeds alone, but in other things relating to building as well. As long as the evils that resulted from defective agreements, or general conditions, and other masterpieces of architectural legislation, were not generally known or recognised, the simplest or rudest form of procedure might answer; but now that the serious consequences of informality, whether intentional or otherwise, are displayed in your columns, it will be strange if employers and builders will not henceforth adopt every means that is supposed to guarantee security. Besides, it may fairly be asked why the architect should wish to make the legal arrangements between a man who has a house built and the builder any more than he should between the same man and those from whom the site of the house was purchased. In the latter case, if he happens to be employed, he confines himself to selection, surveying and valuing all unquestionably within the province of his duties; why should he not act similarly in the former case? There is certainly enough in designing and superintending works (to say nothing of mixing mortar and the proper proportions of lime and sand) to occupy any man's abilities, without interfering in matters which, even when they are carried out by those who devote their lives to the employment, are often far from perfection, and are the subject of continual litigation. It would no doubt appear very absurd to architects if lawyers endeavoured to design and prepare the plans, estimates, and specifications referred to in deeds, and it is not easy to see why a lawyer should not know as much about building as an architect about law; and indeed it is a matter of notoriety that more lawyers could be found with a knowledge of architecture and engineering than either architects or engineers with an equally extensive knowledge of law. Nor could the effects resulting from amateur architects be more serious than those from amateur lawyers. If anyone chooses to adopt the principle of 'every man his own lawyer,' he is free to do so, and in the end he is pretty certain to discover he had a fool for his client (a fact sometimes worth liberally paying for); but in the architect's case, as it is not himself that usually has to bear the consequences of imperfect knowledge, it is hard to understand how any honourable man would, without the utmost circumspection, accept so grave a responsibility. At the same time, it is scarcely fair to lay all the consequences at the architect's door. If a contractor chooses to sign a deed of the meaning of which he is profoundly ignorant, one can hardly pity him, especially as it does not appear that if he desires an alteration some other person's tender is certain to be accepted instead. It may be doubted if the architect would interfere in the preparation of legal documents, if it had not been for his own immunity from loss, whatever results may follow. If the employer is 'fanciful' or 'exacting,' if he refuses to recognise extra or undefined works, or on the other hand 'if the client gets the worst of it' (to use your correspondent's language), the architect, although 'he may neglect the interests of his client,' or be an 'ignorant, inexperienced, or unjust man,' somehow manages to secure his fees, and escapes loss, whatever side suffers. In proof of this it is curious to remark that, although there are allusions in your pages to the wrongs of both employers and contractors under the present system, nothing is said about architects' grievances, which would hardly be the case if any existed. And, as it does not appear that architects would in any way suffer if they were not allowed to prepare what should be the lawyer's part of a contract, it may be worth the consideration of the committee of the Institute, and of the Builders' Society (who it appears are now considering these matters), whether they ought not to recommend, in approving of a form for general conditions, that architects ought not, as a rule, to interfere in giving it legal value.

As regards the most fitting person to be arbitrator, no general rule ought to be laid down. In some cases the proper person would seem to be an

architect, in others a barrister; but whenever the case is intricate, and many witnesses have to appear, there ought to be both an architect and a barrister, as only then is there likely to be a thorough investigation of any matter in dispute. Of course, in this case, there would have to be an umpire in case of difference, who should be competent to decide from the evidence of the arbitrators without a rehearing being necessary. It might be thought that this would be an expensive process, but everyone who has had much experience in arbitrations would be likely to admit that, in the end, it would be the cheapest course, as there would not be so much irrelevant evidence admitted, on the score of its legality, as is now the case whenever a barrister does not preside; and, on the other hand, there would not be as much time lost in going into particulars of the simplest things in construction, which has to be done in cases where the architect appears merely as a witness.

Your obedient servant, Lxx.

**ARCHITECTURAL EDUCATION.**

Sir,—It is as unfortunate as true that as soon as architects begin to discuss a question, the 'odium architecturum' breaks out with such virulence that the whole interest of the subject becomes lost in a personal squabble, and such appears likely to be the fate of the correspondence on 'Architectural Education,' judging from the ill-advised letter in your to-day's impression.

With reference to the real question at issue, I think a great deal of misconception exists in the minds of enthusiastic admirers of the 'Continental system' as to there being a great desire, or necessity, for a change in the present system of pupilage in England.

Architects' pupils are hard-headed, matter-of-fact individuals, prone to judge by results rather than by theories, and apt to get somewhat disgusted with self-elected censors who, possessing but theories, and with neither age nor experience to justify them, are too much given to intruding their advice and opinions in and out of season.

The difficulties in the way of a strictly professional academical or university training for architects in England would be enormous; pure 'Goths' would pull one way, pure 'Classicists' another; and the sensible men who advocated both styles would probably not make headway against the cliques these greater lights would gather around themselves.

Granted that a man had duly graduated in an architectural university, what then? He would have imbibed this man's theories, that man's mannerisms; would probably make pretty drawings, and of the practical working of the profession be supremely ignorant. And in this very 'working' lies the real value of pupilage. To be in constant communication with his master, to see how clients and contractors are dealt with, and the dozens of daily difficulties, of greater or lesser importance, met and overcome, is, to the really working and observant pupil, of inestimable value. I cannot see any advantage in substituting for this any system of 'architectural go-carts,' Continental or otherwise, without which the pupil would fall; nor do I understand why the architectural pupil is to be looked upon as a delicate thing to be architecturally nursed and brought up by hand on architectural pap.

Architectural education rests with the individual. If he choose, he can learn more readily, with more lasting effect, in an office than by any formal course that could be offered him; and if he has time, there are countless facilities now open to him for supplementing his professional education.

Granted that the present system is more or less of a scramble and struggle after knowledge, few will deny that a man remembers best what he has to find out for himself; and the result, at all events, is the production of a self-reliant set of youngsters, who, having met with, are prepared still to meet, difficulties, and this is an architectural race preferable in every way to the dainty, professorially afflicted mannerists, we should probably obtain by any academical forcing system.—I enclose my card, and am, Sir, your obedient servant,

March 6, 1869.

X. Y. Z.

**SOUTH KENSINGTON MUSEUM.**

March 2, 1869.

Sir,—If it be intended that the Museum at South Kensington should grow in public favour, at least it is necessary that the public should see it. Now the best time probably for the public is four o'clock on a Saturday afternoon. Yet this is the very hour when the bell is rung, and 'All out' is sung by the police in charge. 'This way out, gentlemen,' 'Now, Sir—if you please—this way' to any one lingering to finish looking at the one or two things he has had the opportunity of seeing during the half hour he has perhaps been enabled to squeeze out of his time before four o'clock, by dint of rushing off from the office and scrambling into the train before it was quite convenient to do so. How then of those numbers who cannot possibly reach South Kensington at this hour, and who have therefore no chance unless the doors be open till six o'clock, at least, or later still? Why not? The Museum is for the public; the object is to educate, or at least amuse. Yet two hours of precious time is lost for the benefit only of a few officials, it is presumed. By all means give these officials other holidays to make up for time spent on the Saturday afternoon in the public service; but pray keep the doors open longer than at present.

Again, to your readers it surely would be an advantage to see the drawings which are now hung in the Council-room of the Royal Horticultural Society, being the designs for the Kensington District Schools. Yet no admission is granted. How to see them is not generally known. Could you inform your correspondent?

'ONE WHO DOES NOT KNOW.'

P.S.—I should think as many as 1,000 or 1,200 persons were turned out of the 'Armour Galleries' last Saturday—many only just having entered—and a large proportion young persons with their parents.

**NEW BUILDINGS AND RESTORATIONS.**

A bust of the late G. V. Brooke, the tragedian, has been placed in the public library at Melbourne, Australia.

Bury St. Edmund's.—The chancel of St. James's Church has now been completed.

The Church of St. Giles, Cripplegate, has been re-opened after restoration.

Mr. Hardwick, the architect, has given notice to the authorities of Merchant Taylors' that in all probability the buildings at Charterhouse will be vacant and ready for the reception of their school by Easter, 1872. From this it would appear that nearly three years must elapse before the actual transfer of the Charterhouse to its new site near Godalming will be effected.

A handsome new Independent Church has been erected on the Bellevue Estate, Halifax, near the residence of Sir F. Crossley.

The Transepts of Hexham Abbey are to be restored.

**Consecration of St. Ann's Church, Warrington.**

This event took place recently, by the Right Rev. Dr. Jacobson, Bishop of Chester. The site was given by Colonel the Right Hon. John Wilson-Patten, M.P. It occupies an area of 2,442 square yards.

The church is wholly built of bricks of rather grey tint, moulded bricks being largely introduced for bases, strings, jambs, sills, and mullions of windows and for the doors. It consists of nave 76 feet by 42 feet, entered by north and south porches; chancel 32 feet by 18 feet, which is apsidal, and on the south side stands the tower, 21 feet square. The clergy and choir vestries are placed on the north side, with heating cell underneath. The nave is in one span. Piers projecting from the side support the principals of the roof. The piers themselves are connected east and west by arches underneath, and two light windows are placed high up in the walls. Underneath an arcade relieves the wall surface. The arcade is also carried across the west end, above which is the inscription, 'The Lord is in His Holy Temple,' in encaustic tiles. Bands of tiles are carried round the piers. The pulpit is executed in Derbyshire polished limestone, with marble shafts to the openings. The panels are of slate, and upon them are painted Scriptural subjects, by Hardman, of Birmingham. The chancel is well raised above the nave. Moulded brick piers are carried up, having sculptured capitals, from which spring stone ribs and groining in brickwork. The sanctuary wall is panelled with appropriate emblems.

It is proposed hereafter to completely decorate the chancel and west end of the nave in fresco. The organ is placed under the tower, is by Hopkinson, of Birstall, near Leeds, and cost 300l.

The church is rather plain in external appearance, of Early Gothic. The windows of the nave have three orders of mouldings in brick, with bold buttresses, eaves, and cornice. The porches are groined in brick, encaustic tile bands being introduced. Over the outer doorways large stones are left in block, to be hereafter sculptured with subjects from the life of our Lord. The west end contains large four-light traceried windows, entirely in brick, with arcade underneath. Separated from this on each side with large buttresses are moulded lancet windows. The tower is 71 feet high to the top of battlements. Above this a slated roof rises an additional height of 37 feet, surmounted with cross and vane. The chancel has five two-light windows, with plate tracery, divided with massive buttresses, and the apsidal roof terminates with a metal cross. The whole of the roofs are covered with blue slates, and dark red ridge tiles. The architect is J. Douglas, Esq., of Chester. The church has been built by Messrs. Joseph Gibson and Soa, Warrington, at the moderate cost of 5,200l., which includes the architect's commission.

Sydney, Australia.—The Laying of the Foundation Stone of the Cathedral.—On December 8 the ceremony of blessing and laying the foundation stone of St. Mary's Cathedral was performed by his Grace the Archbishop. The design was entrusted to Mr. W. W. Wardell, of Victoria, a pupil of the late Mr. Pugin. It is not proposed to go on at present with the whole of the building, but to confine the work to the choir, transepts, and nave, giving a length of some 210 feet. The design is cruciform in its general plan, and comprises a nave, aisles, two transepts with aisles, and a choir with eastern and western aisles. The width within the transepts will be 118 feet, and across the nave and aisles 74 feet. The space within the sanctuary will be about 45 feet in length, and will be surrounded by the aisles and lateral chapels. The organ chamber is to be on the east side of the choir. The nave, choir, and transepts will be about 90 feet in height from the floor of the church, and will be divided from the aisles respectively by pillars and arches 30 feet in height. There will, moreover, be a central tower or lantern at the intersection of the nave and transepts, with a clear interior height from the floor of 120 feet.

Hardingstone.—The parish church of St. Edmund's, Hardingstone, has been reopened, after extensive restoration. The old high pews have been replaced by open seats. The old east window of the chancel has been removed, and a three-light stained-glass window erected in its place.

Opening of the New School at Meal Bank.—The school-room at Meal Bank has long been too small for the increasing number of children, and many have been refused admittance in consequence. A new school has been in course of erection for some months past, and this building has been formally opened. Its dimensions are 60 feet by 25 feet, with a height of about 24 feet. Attached is a reading-room for the use of Messrs. Braithwaite & Co.'s workmen, while adjoining a house is being erected for the schoolmistress. The whole is designed by Mr. Carter, of Kendal.

**NOTES ON NOVELTIES.**

**Bacon's Improved Hot-Water Warming Apparatus.**

This invention does not present itself as a novelty in principle. The use of hot water circulating through iron pipes as a means of heating conservatories and warming buildings is familiar to all; and few who have had the responsibility of warming any building put upon them have failed to become acquainted with the rival claims of steam, hot air, and hot water at low pressure and at high pressure.

Messrs. Bacon & Co.'s system professes to be an improvement upon one better known in England some years ago than now—that upon which buildings were heated by the circulation of water at a high pressure in pipes of wrought iron of small bore. This system had great recommendations and grave faults, and we draw attention to Mr. Bacon's improvement because he claims to have remedied the defects while retaining the advantages of the older plan; it seems indeed—so far as a single careful inspection of an apparatus in full work could furnish ground for judging—that Mr. Bacon has gone far to substantiate his claim. If so, we believe that for many pur-



poses this will be found a more convenient heating apparatus than any other at present in use.

The advantages of any apparatus using pipes of small bore and water at a high pressure, and consequently at a high temperature, are these:—The furnace is small and easily fixed, the pipes are small and easily introduced, the heat is great and therefore a moderate amount of piping suffices, and the pipes are easily bent and therefore can be conducted in and out of various rooms with facility. All these things point out that such an apparatus may be adapted to an existing building with greater ease than any which involves the use of a larger amount of more cumbersome piping.

The drawback to the system as originally employed was the extremely high temperature which its pipes reached, desiccating the woodwork near them to a very dangerous extent, and producing that unpleasant effect upon the atmosphere familiarly known as burning it. Mr. Bacon considers that he has remedied this by enlarging the bore of his pipes sufficiently to increase the amount of water in circulation through a given length of pipe considerably in volume (though not so much as to lead to inconvenience in the employment of the system), and by carefully adjusting the size of his furnace and the amount of fuel capable of being received into it to the heat proposed to be given out. He claims that his pipes, which have a diameter of  $1\frac{1}{4}$  inches and a bore of  $\frac{3}{4}$  of an inch against the older bore of  $\frac{3}{8}$  of an inch, attain an average heat, when arranged for use in a private house, of 200 degrees Fahrenheit, and do not rise in the hottest part of them above 260 degrees. These temperatures are, to our knowledge, far, very far below those reached by some high pressure pipes, and the iron surface heated only to this degree would not, we believe, injure the air. It is fair to add that for drying closets or other similar purposes the furnace can be so arranged as to be capable of obtaining higher temperatures.

A well-designed arrangement of valves admits the shutting off of any part of the apparatus, as for instance any room, separately. The whole circulating system can also be raised or lowered in temperature without difficulty. The expansion cistern is simply contrived, and admits of more varied positions than in other systems. The mode of 'jointing' the pipes and putting them together employed is simple and effectual; and lastly, the inventors allege, and we believe with good ground, that in the event of that most untoward of all misfortunes, the water being allowed to freeze and then the furnace being lit, a serious explosion, such as may occur with a hot water system on the low pressure plan, is not to be feared.

We have stated thus much of what Mr. Bacon claims to have accomplished, because, from what we have seen, we are inclined to believe that he has not overstated his case; and if experience shows these improvements to have actually been attained, the apparatus cannot fail to be very useful, and extensively employed. We are not sanguine as to the possibility of universally substituting in this country an apparatus of this kind, with a system of ventilating flues, for the present open fire in dwelling-houses, though the inventor hopes to accomplish this, and has, indeed, successfully performed it in a single instance. The question of applying Bacon's apparatus to an entirely new building will have to be determined, to some extent, by original cost and cost of maintenance: these are stated at moderate prices, but, on these points, we do not feel called upon to express any opinion one way or the other. There can, however, be no doubt that if it turns out to be now possible to warm the corridors and rooms of dwelling-houses and offices by means of pipes of small bore without the risks of fire and bad air, which have hitherto attended the use of such pipes, many buildings may be warmed which could hardly be attempted on the low pressure system; because the new plan will necessitate so much less cutting away and loss of space than the larger pipes of a low pressure system would have called for.

#### Pether's Diaper Brickwork.

We have had submitted to us some specimens of this manufacture, and we consider that, if the bulk be equal to the sample, it cannot fail to be useful to architects and others. Mr. Pether's bricks are manufactured from the gault of Maidstone: they are kiln-burnt bricks, of the ordinary sizes, of a creamy stock-brick colour, and of an excellent consistency and hardness. The peculiarity of them is that on the face or end of each brick a repeat of a diaper pattern is impressed, so that any string-course, spandrel, or wall surface faced with these bricks will be diapered regularly and equally.

Mr. Pether, being an artist, has made and procured designs for his diaper patterns that are decidedly above the average of excellence as works of art, and the execution of them is sharp and crisp; here, indeed, lies the point which induces us to recommend his bricks to the notice of architects. A certain number of really good patterns are available for selection, and the mode in which they are executed seems to show that any architect designing his own diaper pattern, to be carried out in these bricks, might depend upon an amount of artistic intelligence being brought to bear upon the manufacture such as cannot always be relied upon.

Coloured backgrounds, burnt in, are obtainable; also arch-bricks, moulded to a radius. Curved bricks, suitable as casing for columns, are among the purposes to which Mr. Pether proposes to apply his patent.

The price quoted does not appear excessive for the nature of the article. The Burham Brick Company are the London agents.

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

### Hammersmith Bridge.

The strength of this bridge has been the subject of some correspondence in the public papers, in consequence of a fear having been expressed that the severe test to which its chains are put by the crowd assembling to witness the Oxford and Cambridge Boat Race may prove too great for its endurance. It is stated in the best informed circles that the Government, with a promptitude worthy of praise, have caused an examina-

tion to be made by competent engineering authorities; and the public may consequently rest assured that the bridge will not be permitted to be occupied by a crowd on that occasion unless the examination undertaken proves beyond doubt that there is no danger. The actual condition of this bridge is faithfully described in another part of our present issue.

### Lord Redesdale.

This indefatigable setter to rights of long-standing abuses, is announced as bringing forward in the House of Lords a Bill for the better regulation of artistic copyright. Few subjects that touch Art directly or indirectly, more need the interference of judicious legislation; few perhaps will need more patience and care in the examination of them; but it is fair to hope that any Bill introduced thus early in the session will receive due attention from both Houses. Let us hope that the Art world will not be slow or careless in bringing their knowledge of the present anomalies, and their convictions of what is due to artists before those members of the Legislature who are willing to interest themselves in such matters.

### Exhibition of Oriental China.

The Burlington Fine Arts Club have invited our attention to a fine display of Oriental China, now in their rooms, 177 Piccadilly. The articles exhibited are private property, and the variety of form and colour, and general diversity of the collection, are well worthy of admiration. It is impossible without an undue sacrifice of time to give even an abstract of the contents of the Exhibition, from the fact that, with the sole exception of some of the numerous specimens of Mr. Virtue Jebbs, which are referred to the dynasties under which their manufacture is supposed to have taken place, the only information given is the name of the owner—a matter of little interest to the spectator. In the absence of the best information of which the collectors of the china are in possession, it would be rash to offer a judgment on articles of which we know that, a hundred years ago, the Chinese were very expert forgers. There are some specimens of real old Nankin china, belonging to Mr. S. Redgrave. The collection of Sir Digby Wyatt is especially remarkable for moulded, perforated, and embossed china. The adoption of the brilliant Persian colours and patterns, in other instances, in the manufacture of china which is not of Persian origin, is interesting and instructive. One large and somewhat misshapen plate of rich dark-blue crackle ought to have a history worth telling. The curious jar of white crackle enamel, covered with embossed floriations resembling bronze, is another notable piece of china. It is much to be lamented that a collection apparently so valuable should not be properly described.

### Notes for Connoisseurs.

At the late sale of the collection Bourouet-Aubertin in Paris, a pen-and-ink drawing, portrait of Lepelletier de Saint-Fargeau, by David, sold for upwards of 30*l.*; three works of Eugène Delacroix: *Medea* 580*l.*; *Mirabeau and the Marquis de Dreux-Brézé* 884*l.*, and *Don Quixote* 274*l.*; *Napoleon and Berthier*, by Géricault, fetched little over 15*l.*; the *Iliad and the Odyssey*, by Ingres, sold, the former for 164*l.*, and the latter for 140*l.*; one of the late Th. Rousseau's landscapes, 'A Stream in Berry,' 161*l.*; 'A View of Venice,' by Ziem, 64*l.* Amongst the old works at the same sale, 'Le Gâteau des Rois' (Twelfth Cake), by Jordaens, sold for 172*l.* There was one piece of sculpture, 'The Woman and the Serpent,' by Clésinger, a remarkable work, sold not long since at the dispersion of another collection, possessing many of the beauties of Pradier's creations, and rather too much of their sentiment, which sold for 940*l.*

The catalogue of the Delessert sale has just appeared, and the sale is fixed for the days already mentioned, namely, the 15th of the present month and three following days, the two former being devoted to the works of the old masters. The catalogue contains 213 items, of which 112 are productions of the old schools. The famous 'Virgin and Child,' called the 'Virgin of the House of Orleans,' which, by the way, was once in the Vernon collection, stands at the head of the list. Amongst the most remarkable works are the following:—A fine *Cuyp*, 'Cows in a Meadow,' described by Smith, No. 149; 'Christ Healing the Sick,' by Dietrich, engraved by Pistruchi and Flipart; 'Portrait of Michel le Blon,' by Van Dyck, Smith, No. 809, engraved by Matham and Pye; 'Interior of a Wood,' by Hobbema, Smith, No. 106; 'The Fainting Woman,' by Mieris, frequently engraved; A small Repetition of the 'Saint Cecilia,' by Mignard, in the Louvre; the finished sketch of Murillo's 'Holy Family,' in the National Gallery; 'Portrait of a Man,' by Rembrandt, No. 15 in the Cabinet Casellan; 'A Holy Family,' and a Portrait by Rubens; 'The Fish Market,' and two other fine works, by Teniers; five works by Joseph Vernet.

Amongst the modern pictures are 'A Meadow with Cattle,' by Rosa Bonheur, painted in 1845; a fine *Bonington*; two by Delaroche; three by Henri Leys; three by Luckx; two famous pictures by Meissonier, 'The Chess Players,' and 'The Amateurs.' There is also one piece of sculpture, 'The Phryné' of Pradier.

The gallery will be open to the public on the 12th and 13th instant.

### Archæological Discoveries.

Baron Visconti has made a fortunate discovery at Ostia of two fine heads: one of Vespasian, colossal; the other of Trajan, the size of life. These examples of Roman sculpture are in perfect preservation, and seem to have been carefully hidden, either through loyalty or fear, when the statues of the Cæsars were being destroyed.

Another discovery has been made outside the same town: namely, the remains of an immense colonnade and portico which surrounded the site called the Field of Cybele, in which stood the temple of that divinity with other public buildings.

### Technical Education in Bavaria.

The increasing attention now given to the subject of imparting such education to our youth as shall fit them for the higher branches of mechanics gives great interest to the following description, in a report just issued from

the Foreign Office, of the Polytechnic School at Munich. It would seem that the system for which we are contending is there in full operation. Candidates for admission having passed the technical schools, and foreigners who have attended a superior technical school abroad, may be admitted without further examination. Those who are not so qualified must pass a preliminary examination, after which they receive a card for five florins (*St. Ad.*), which gives them the right to the complete course of study in the Institution. In addition they have to pay a fee of one florin to the professors for each half-year. The course includes the following subjects:—

The School of Engineering as applied to the construction of buildings, and to works connected with the cultivation of the soil.

The School of Architecture and Building.

The Technical School of Machinery.

The School of Technical Chemistry.

Instruction is given at the Polytechnic School by means of lectures, repetitions, graphic and constructive exercises, practical work in the laboratories and on out-door excursions.

It extends generally to the following subjects:—

**Mathematical Sciences.**—Plane and spherical trigonometry; algebraical and higher analysis; rules of probabilities, and their application; analytical and descriptive geometry, with their application; elements of astronomy; geodesis and practical geometry; analytical, technical, and elementary mechanics.

**Natural Sciences.**—Experimental physics; mathematical and applied physics; general and experimental chemistry; analytical chemistry; mineralogy (geognosis) and geology; botany and zoology.

**Building and Engineering Sciences.**—Knowledge of building materials; graphic statistics; knowledge of the construction of buildings, of house-building, of farm-buildings and manufactories; pyrotechnics (heating and lighting); sanitary conditions, with respect to buildings; construction of roads, railways, bridges, and canals; plans and estimates for buildings; agricultural engineering; the different styles of building; history of architecture.

**Mechanical Sciences.**—Mechanical technology; knowledge of machinery; theory of machinery; planning and construction of machinery; estimates of cost of constructing and working machinery.

#### Proposed Desiccation of the Zuyder Zee.

Mr. Thurlow, the British Minister at the Hague, reported to the Foreign Office, at the end of the year just past, that this project is in a state of forwardness. The Waterstaat, or Government authority, have applied for further explanations on some points, and the concession is withheld in the mean time; but the scheme seems nearly digested, and is of such a gigantic character that a description will be acceptable to professional men.

The proposition is to convert some 390,000 acres of water into alluvial soil; and Mr. Thurlow reports that all authorities, and among them the Council of the Waterstaat, charged with the examination of the scheme, agree that from a hydraulic point of view the desiccation of the Zuyder Zee is possible, and moreover that it could be accomplished in the comparatively short period of from eight to twelve years, or fourteen years at the outside. Taking past experience of the application on a large scale of steam power to water engineering into due consideration, this calculation has not appeared to Dutch engineers either dubious or too sanguine.

One of the chief preliminary considerations is the letting off the water flow of the Yssel as near as possible to its actual mouth, and on this point the Waterstaat and the projectors agree. Already the North Sea Canal, for connecting Amsterdam directly with the sea, is in progress, and will facilitate operations. The general direction of the boundary dyke, to the south of which the sea should be laid dry, is from Enkuizen to Kampen.

Inspector Beijerinck originally proposed for the dyke on the North Holland side a height of 3 metres + A.P., and on the Overysse side 4 metres + A.P.; but these estimates have since been raised to 3.50 + A.P., and 4.50 + A.P. respectively.

Herr Stieltjes demands a height of 3.60 + A.P., and 4.40 + A.P.

The Waterstaat recommends a uniform height of 5 metres + A.P., but it would probably be better to make the dyke somewhat lower on the North Holland side, say 4.80 + A.P., and somewhat higher on that of Overysse, say 5.20 + A.P.

Judging, therefore, from former experience, and the records of past floods and high tides, a dyke, the crown of which runs from 3 to 5 metres + A.P., according to the locality, with an outer slope of 4 in 1, and an inside slope of 2 in 1, is deemed by the engineers of this country to offer sufficient security against the ocean to enable a population to settle down without a feeling of anxiety to till the fields about to be rescued from the turbid waters of the Zuyder Zee.

Herr Beijerinck's proposal is to place steam-engines, working centrifugal pumps, upon the boundary dyke. These engines would later (when the work of draining is completed) be distributed about the Zuyder Zee at specified points, and would serve to drain or irrigate the lands, canals, &c., within the new administration.

The necessary steam-power, calculated upon the experience derived from former undertakings, and notably from the Haarlemmer Meer, is estimated at 12 horse-power for a metre of water over an area of 2,000 acres.

The part of the Zuyder Zee to be drained contains, in round numbers, 390,000 acres.

The water throughout this area averages 4 metres in depth.

The horse-power required is, therefore,  $\frac{390000 \times 4}{3000}$ , or  $195 \times 12 \times 4 = 9,360$ .

Herr Beijerinck calls this 9,400 in round numbers; and this power he proposes to distribute among sixty-three engines of not more than 150 horse-power each.

With this power he reckons to drain the Zuyder Zee dry in twenty-one months—an estimate rather over than under the mark in comparison with the work at the Lake of Haarlem, which has been already drained. The engineers expect to accomplish this work with greater ease by reason of the experience on the previous work, which gives them improved data. The proposed cost of the work is under ten millions sterling; and out of 134 borings in various parts of the sea, only four were found to be of peat, with

one sample only of sour ground, such as was found to exist largely at Haarlem; 94 borings produced clay, 50 being a rich clay stratum of a metre and a half. The whole of these samples have been deposited at Amsterdam. According to the calculations as to value of the reclaimed land, it appears that supposing it to be equal to that of Haarlem, the Zuyder Zee would be worth twenty millions sterling, or double the cost of its reclamation.

#### Street Tramways.

A numerous attended meeting of the residents of the southern districts of the metropolis has been held at the Horns Tavern, Kennington, in furtherance of a Bill now before Parliament for authorising the construction of tramways in Lambeth and other districts. The principal roads in Lambeth, along which it is proposed to lay the tramways, are the Clapham, Brixton, and Kennington Roads, up to Westminster Bridge. The tramways now proposed differ entirely from those laid down by Mr. Train. The rail, instead of projecting above the level of the road, and interfering with the ordinary traffic, will be laid exactly level with the surface of the road, and all other vehicles will be able to cross or run over the tramway in any direction whatever, without danger or inconvenience. The tramway will be paved between all parts of the rails, and for a certain distance beyond the rails, at the expense of the company, and kept in repair by them. Instead of a single line of tramway (as in Train's case), there will be an up and down line, so that the tramway carriages will always travel with, or in the same direction as, the other traffic. As compared with the present omnibuses, the tramway carriages will be more commodious, well ventilated, and roomy—equal in accommodation and comfort to a first-class railway carriage. The fares will be considerably less, and regulated by Act of Parliament, so that they cannot be increased from time to time, as is now done by the omnibus proprietors. Special carriages will be run in the morning and evening at half fares for the accommodation of the working-classes. The ratepayers will be relieved of about one-half the expense of repairing the streets along which the tramway will be laid.

#### Architects to Public Bodies, and their Private Practice.

At their last meeting, the members of the Barnsley Local Board of Health were engaged for nearly two hours in discussing a motion by Mr. Tune, to the effect that in future the surveyor to the Board should devote the whole of his time to the duties of his office, and should not be allowed to practise on his own account as architect. The present surveyor to the Board was engaged several years ago at 130*l.* per annum, with the liberty of private practice. The mover of the resolution complained that in drawing plans for private individuals, he had allowed them to pass without strictly keeping to the bye-laws, and that in other cases infractions of the bye-laws had taken place, Mr. Wade himself being the architect in those cases. Some discussion also ensued as to what is the general practice of architects to public bodies, when a list was read which showed that in twenty places in the West Riding and adjoining counties the architects to public bodies, as a rule, do not carry on private practice—in fact, in only two towns out of the twenty did the surveyors and architects practise privately. At the close of a very lengthy debate, an amendment was moved, that the subject be held over until the Charter of Incorporation, which has just been granted to Barnsley, be put in force. The motion was, however, carried by a majority of four to five.

#### Public Works in the Manufacturing Districts.

Mr. Rawlinson, Government engineer, has made his final report on the public works executed in the manufacturing districts during the time of distress caused by the American civil war. These works were executed by means of the aid afforded by Government loans at 3½ per cent., amounting to 1,768,516*l.*, repayable in the course of 30 years. In March, 1868, 400 miles of streets had been sewered on the most approved modern principles; 30,233 houses (a number which would be largely increased) had been drained in connection with these sewerage works, and nearly 800 acres of street area had been formed, flagged, channelled, and paved. Local traffic had thus been immensely facilitated, and the outlay has added at least its full value to house and mill property; and the result has been that Lancashire, from being backward in sanitary improvements, is at this time probably the most advanced county in England in town sewerage, street paving, public parks, waterworks, and road improvements. Waterworks have been constructed in the towns, comprising reservoirs which will store 20 gallons per head for 100 days for 740,337 persons. The works of river improvement have also proved of great local utility in preventing nuisance and affording more ready escape for storm waters. Little more than a fourth of the whole sum appropriated by Parliament was paid directly to the distressed men, but an effective mixture of skilled and unskilled men was secured, and a large proportion of the cost of materials, land, plant, and superintendence, as well as of skilled labour, added relief by its expenditure to the distressed district, by the employment of local labour in stone quarries and brickyards, and in other ways. The wages paid for day work averaged 5*s.* 3*d.* per day for masons, 5*s.* 7*d.* for bricklayers, 3*s.* for labourers, 2*s.* 5*d.* for factory operatives. The public works of Lancashire have benefited trade by giving 400 miles of good roads for tracks of mud; and they have removed local causes of disease, pauperism, and premature death, and at the same time increased the value of house property.

#### Dumfries New Infirmary Buildings.

A meeting of the Building Committee was held at Dumfries on Thursday the 4th inst., at which the report of the valuator of the three plans that had been submitted to him was taken into consideration. The plan of Mr. Starforth, which includes 100 beds, was reported to cost 12,706*l.*, exclusive of architect's fee and fee to clerk of works; that of Messrs. Hall and Lyons, with 120 beds, was valued at 13,000*l.*; and that of Mr. Oliver, with 130 beds, at 11,832*l.* A vote was then taken, when seven votes were given for that of Mr. Starforth, two for Messrs. Hall and Lyons, and two for that of Mr. Oliver. Mr. Starforth's plan will therefore be recommended by the committee.

## General.

**The Great Quarry at Pwllpant.**—A large dock and basin are in progress of construction at Cardiff, by the Marquis of Bute. The stone for these important undertakings is being quarried at Pwllpant, in the immediate neighbourhood of Caerfili, and about twenty minutes' walk from the Caerfili station of the Rhymney Railway. Previous to the commencement of the present works a small quarry had been opened for local requirements. Such (it would seem) was the superiority of the stone produced from this quarry, that no doubt was entertained of the sound and suitable quality of the rock for structural purposes. The descent from the quarry to the Rhymney Railway, which conveys the materials to Cardiff, being rather considerable and abrupt, it was deemed advisable to commence cutting into the hill at about 200 yards farther down, and on a level with the railway. Here an immense quantity of mould and gravel had to be removed in order to make room for roads, railway sidings, and building accommodation on a somewhat extended scale; and also to lay the rock bare for intended operations. Considerable outlay having thus been unavoidably incurred, the managers found, to their great disappointment, that the expectations which the promising appearances already mentioned had led them to entertain were not apparently to be realised, for the stone, instead of being sound and solid, as had been anticipated, was found to consist of huge, shapeless lumps of such a fragile and scaly nature as to be almost totally unfit for the purposes intended. Rumours were then current to the effect that, in these circumstances, it was contemplated to abandon the works entirely and commence operations elsewhere. It is pleasing, however, to have to state that further progress has led to such encouraging discoveries as to induce the chief engineer to continue the works, it being found that all the stone required to complete the various important works which the Marquis has now in progress can be obtained from these quarries. Indeed, recent experiments seemed to have proved the capability of the quarries to be considerable. Some of the blocks produced for the frontage of the massive wall of the dock are magnificent, weighing in some instances upwards of ten tons after having been dressed; while at the same time stone can be had in large quantities, suitable almost for every description of masonry.

The student of geology might find in Pwllpant quarries abundant testimony to the accuracy of that science, if not also fresh data and materials for interesting researches. One of the beds of this rock, at the depth of about 20 yards, abounds in a variety of organic remains which are in such an admirable state of preservation as to leave no doubt of the existence of a majestic forest in this part of the country. In consequence of powder being used in bursting this bed, few if any of these fossils have been secured intact. The trunks of trees, however, or rather portions of such, with stumps of their forks and minor branches, have been frequently met with. In most instances these trees retain their bark, which has been transformed into coal, and can be easily detached from the stem, on which it leaves the beautiful impress of its inner coating. Interspersed among them may be seen the petrified forms of minor vegetable productions, such as ferns. These remains are so extremely fragile as to crumble to pieces whenever touched, which consequently precludes the possibility of securing any of them in an entire state. There is one species of fossils found in this rock of which our correspondent had not previously seen a specimen. These fossils are the remains of trees of a remarkable form and development. They taper slowly, are very slender in girth, and must have grown to a great height, while at the same time they are uniformly straight, and are divided into sections at short intervals by circular grooves like so many hoops or rings. These sections gradually diminish in length towards the top, but bear uniformly a mathematical proportion to each other. The rings which form these divisions are perfectly horizontal with respect to the tree in its natural position. In some cases these remains are found minus their bark. In such conditions the fibres of the timber are so distinctly imprinted in the rock immediately inclosing it as to leave no doubt that the substance of which the rock has been formed was softer and of a more impressible consistency than the wood of these trees at the time of their subsidence. Their under parts are considerably flattened, while the upper parts retain their natural roundness. The probability is, however, that this flattening may be ascribed to the action of intense heat retained in the stratum immediately beneath them at the moment of their coming in contact with it.

An experiment is being tried on the Erie Railway, New York, by laying down steel rails instead of iron ones. It is stated that the former will last six times as long as the latter.

The Lancashire and Yorkshire Company have decided that 50,000*l.* be authorised to be raised in connection with the expenditure on the Hull Docks, by the issue of new shares of 5*l.* each, and entitled to the ordinary dividend of the company.

The General Accident Company, which has been established by certain leading members in the interest of architects, civil engineers, and surveyors, commenced business on March 1. Mr. Cunez, F.R.S., B.A., is the chairman.

A valuable collection of pictures, the property of Dr. Goldschmidt, was sold by auction at Frankfurt last week, and realised about 30,000 francs. The greater portion was acquired by M. Charles Pillet, of Paris, and includes a 'Norwegian Landscape,' by Everdingen (1,405 *fr.*), a 'Dutch Interior,' by F. Miéris (2,410 *fr.*), a 'View of Haarlem,' by Van der Hagen (405 *fr.*), a 'Cattle Piece,' by Van der Leuw (592 *fr.*), 'Sportsmen at Lunch Time,' by Maas (490 *fr.*), and a 'Dutch Interior of a Barn,' by Isaac Ostade (475 *fr.*).

The new street now being formed between the Rue de Maubeuge and the Rue des Martyrs at Paris will receive the name of the Rue Hippolyte Lebas. Lebas was the architect of the Church of Notre Dame de Lorette, close by, as also of numerous other buildings in and about Paris.

It is reported that the Viaduct over the Holborn Valley will be opened to the public in July or August next.

**The Tower Subway,** when completed, will supply the means of rapid communication under the Thames between the Middlesex and Surrey sides of the river. It has been commenced, the contractor having begun to sink the shaft on Tower Hill. By the purchase of a projecting piece of land on the Surrey bank of the river, the length of the tunnel, as originally proposed, will be shortened by upwards of 200 feet. The chief portions of the cast-iron cylinders are ready for use, and the great shield for the Tower side will be shortly finished. The latter will be constructed almost entirely of wrought iron, and will fit over the iron tunnel like the lid of a telescope.

**The New Line of Railway to Gravesend.**—The North London Railway Extension from Bow to the Tilbury Line, which will afford a direct communication from Broad Street and Camden Town to Gravesend and Southend, is announced to be opened towards the close of the month.

The ceremony of laying the first stone of St. Swithin's Church, Lincoln, will take place on Easter Monday.

The Sculptor Wichmann, of Munich, has just finished the model of a statue in bronze of Goethe, which is to be inaugurated in that city on August 28.

Christ Church, Waterloo Road, Wolverhampton, has been reopened after having been enlarged. The additions consist of a side aisle and extension of the nave.

**Rawmarsh (Rotherham).**—The contract for the restoration of Rawmarsh church tower has just been completed. The cost will be about 700*l.*

**Melford.**—The church restorations here have been completed. Although much has been done, there is yet ample scope for further outlay.

The Church of Herringwell, Suffolk, was destroyed by fire last Sunday morning. The fire originated in the heating by an iron pipe which ran from a stove through the thatched roof.

A correspondent of the *Durham County Advertiser* suggests that the next offering made for the enrichment of Durham Cathedral will be stained glass for the three central windows at the east end of the choir.

**Stone New Market Hall.**—On Tuesday this light and commodious building was opened for the use of the town, supplying a want that has for many years been felt. The new building is more than double the size of the old Market Hall, on a part of the site of which it has been erected, at the sole expense of the Hon. Mrs. Forester.

Mr. W. D. Landoe, of Luton, Bedfordshire, was unanimously elected Town Surveyor of Malvern on March 2. There were 140 candidates, out of whom six were selected by the Local Board.

## QUESTIONS.

### Malting Floors.

To the Editor of THE ARCHITECT.

SIR,—Permission is respectfully asked to enquire, through the medium of your columns, what is the best material for, and mode of laying, floors of malt-houses?

Asphalte is considered too dry; tiles open to several objections. A malt-house floor to be perfection should be hard, smooth, but *never dry*. One that I know, and of which the maltman says 'She's a beauty,' appears to have been composed of ashes, chalk, and flinders (from a smithy), and is reported to have been mixed with blood at the time it was laid. I happen to require some two or three thousand feet of such flooring just now, and should be very glad of any information on the subject.

Yours faithfully,

Ramsgate, February 27, 1869.

W. LANE SEAR.

### Storage of Rain-Water.

To the Editor of THE ARCHITECT.

Not having seen any reply to the question of your correspondent 'L. C. K.' in THE ARCHITECT of February 27 on the above subject, we avail ourselves of the opportunity to make a few remarks. Our experience leads us to the conclusion that rain-water cannot be kept for any length of time, even in a covered tank, without becoming unfit for drinking, unless it has undergone a much more effective filtration than through porous stone. When collected in the ordinary way, rain-water always contains more or less organic matter derived from various sources, such as the volatile impurities in the lower strata of the atmosphere, the spores of vegetable algae, the minute ova of insects, and the dung of birds on the roofs of houses.

The passage of the water through porous stone does not exercise the *slightest* chemical effect on this organic matter, so that although the visible impurities may be removed by the straining which the water has undergone, the soluble matters still remain in the same condition, and an accumulation of filth is gradually formed on the inside of the cistern, which renders the water extremely undesirable as a beverage, especially in hot weather.

The only practicable way of obtaining pure water for domestic use is to filter it day by day as required; and your correspondent may be assured that by this means a degree of purity is attainable, far beyond any that is possible in storing water, however carefully the reservoir may be protected from external influences.

Your obedient servants,

THE SILICATED CARBON FILTER CO.

## MEETINGS OF TECHNICAL AND LEARNED SOCIETIES.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Monday, March 15, at 8 P.M. Paper by Mr. Ingress Bell, 'Architectural Criticism, with some Remarks on Architectural Exhibitions.'

THE INSTITUTION OF CIVIL ENGINEERS.—Tuesday, March 16, at 8 P.M. Discussion—'American Locomotives and Rolling Stock.'

ARCHITECTURAL ASSOCIATION.—Friday, March 19, at 7.30 P.M. 'The Requirements of River Side Construction,' by Rowland Plimbe.

ASSOCIATED ARTS INSTITUTE.—Saturday, March 20, at 8.15 P.M. Exhibition of Sketches. Discussion—'Has the Street Architecture of London derived benefit from the Introduction of Coloured Materials?'



# The Architect.

## LONDON AND PARIS.



ENGLISHMEN are so fond of grumbling at London, and calling it the ugliest city in the world, and many other hard names, and more especially comparing, or rather contrasting, it with Paris, that a little fair inquiry into the relative merits of the two cities as they now stand may not appear altogether undesirable.

And before any just estimate can be formed, we must remove in imagination (would that it could be done in reality) the smoke nuisance, encrusting everything with black, choking architectural details, obliterating true shadows and producing false ones, until a noble façade, such as that of the Reform Club, full of the most refined detail, has actually been likened to a prison. Not Paris, or even Florence itself, would produce half the effect they do under such circumstances.

One reason, undoubtedly, why Paris possesses so great a charm in the eyes of the general traveller is, that he goes there usually for enjoyment—it forms one feature of many a pleasant holiday excursion; while he visits or lives in London to work, tired at the very sight of the well-known offices and streets, and rushes off to the Continent, where the clear, pure air and complete change give a fictitious value to whatever he sees.

Many indeed, we may almost say most men who spend their vacations abroad, will discourse learnedly enough on the tombs at Santa Crocé, and are very probably unaware, or have but the vaguest idea, that there is as fine a collection at Westminster. They will go into raptures over the interiors of Amiens or Cologne, and do not know that they have at the Abbey a far finer interior, which they have possibly never visited since 1862, when they took their country cousins to see 'The Lions.' The vast exterior of St. Peter's calls forth their admiration, whilst St. Paul's, with undoubtedly the most majestic exterior of its class in Europe, is only occasionally surveyed from the top of an omnibus.

In one very important point Paris and London differ; and this very point is one particularly calculated to affect a casual visitor. Paris is, if we may be allowed the expression, an out-of-doors city. Its gardens, squares, boulevards, &c., are almost the sitting-rooms of a great part of the population. How different this is from our own habits, we need scarcely point out.

The general aspect of the two cities is the subject which will, naturally, first introduce itself.

Most persons visiting Paris for the first time will be immediately struck by the appearance of newness pervading everything. All is white, straight, and prim. There is no appearance of growth or natural development. One of the glories of an old city—its history—is now completely swept away, and with it that natural grouping of buildings and opening of streets, the result of simply placing them where they are wanted, which makes an old city so incomparably superior in an artistic point of view to a place laid out like a speculating builder's plot of ground. If there is a public building—a 'monument,' as the French delight to call it—which M. Haussmann thinks should be admired, a straight Boulevard is made, and at the end stands the building in question, as if the sole object of a street were a vista.

On this principle the axis of Cannon Street would have exactly coincided with the centre of the dome of St. Paul's, and instead of the noble group now standing at the western end of the street, slightly changing as we approach it, there would have been simply the dome and no more. Parliament Street also would be 'improved,' so as to lead to some central spot in the Houses of Parliament, or to centre with the north transept of the Abbey, instead of gradually unfolding, as it does, a splendid group of towers and spires certainly unparalleled in Paris. We really believe that so picturesquely magnificent a view is hardly to be surpassed in Europe, showing, as it does, five towers and spires, all exceeding two hundred feet in height.

There is a considerable degree of resemblance between the sites of Paris and London. The rivers are similarly placed as regards the bulk of each city, and curve in a somewhat similar manner; but the banks are in Paris perfectly flat, whilst the north bank of the Thames is sufficiently raised to afford some very picturesque groups.

We will imagine ourselves going down the river. Leaving the Houses of Parliament on our left, the banks on either hand present a continual variety, most agreeable, and often very beautiful. The high roofs of Montague House, the lofty terrace of the Adelphi, that noble bridge Waterloo, with Somerset House standing at so grand an elevation above the river, and backed by the constantly moving towers of St. Martin's, St. Mary le Strand, the Record Office, and other buildings, form a panorama of very great interest.

But, unfortunately, with the usual perverseness of our controlling powers, all has been done that could be to spoil this prospect by permitting such a hideous erection as the Charing Cross Railway Station and Bridge to obtrude itself. Somewhat less ambition on the part of the Engineer and a little assistance from the Architect might have prevented all this, and have added one more feature of use and interest to the view. In Paris, most probably, neither the bridge nor the station would have been allowed in any form, but we are not at all advocating such a course. If public works are

wanted, let us by all means have them where they are required, and if well treated, they will only add to that natural picturesqueness the total loss of which we are lamenting in Paris.

As the boat carries us eastward, passing the Temple gardens, with quaint groups of old houses on all sides, we approach what is certainly one of the finest town-views in Europe—St. Paul's, with the various spires grouped around it, a view which every Englishman would admire were it out of England.

But we are once more startled by another station, that at Cannon Street, and with it another railway bridge, equally ambitious with that at Charing Cross. The bridge may be more successful, and the two towers may perhaps tend to redeem the station a little; but the design shows a complete want of scale—an entire absence, in fact, of the faintest architectural knowledge.

When a new Railway station is to be constructed in Paris, advantage is taken of the opportunity to erect a fine public building, such as not only the shareholders but the general public can see with satisfaction. As an example, take the station of the Chemin de Fer du Nord, where the engineer and architect together have produced a truly magnificent building, worthy of the great company whose terminus it is; and this at probably no great increase of cost. Cost, indeed, cannot have been so great a consideration in the two stations we have been discussing, or the company would hardly have had funds to spare sufficient to erect a hypothetical restoration of Charing Cross in a position it never occupied.

There can be no doubt that in a very modified form some controlling power, a M. Haussmann much reduced, would be beneficial to London. Many things are spoiled from the want of a little foresight, as will be the case with the new Blackfriars Bridge, where the straight lines of the Railway and curve of the new Bridge will clash in the most awkward way. The two can never agree, and the largest will always predominate. This is not only a matter of taste, but of public money thrown away; for when our funds are laid out for us, we are entitled to have the best for our money.

The southern approach to London Bridge is a crying example of waste. Upwards of one million is said to have been expended in making the approaches for this bridge, and without a moment's consideration a railway company is permitted to spoil one-half of the work by erecting certainly the most hideous bridge in London.

But to return to the River. We cannot quit the subject without noticing the Embankment, which is certainly a very finely-conceived scheme, and its arrangement shows at once that the first consideration has been to serve its purpose. Passing under the bridges, and with the various buildings rising behind it, it seems thoroughly to have attained that combination of the grand and picturesque, a good thing in the right place.

Here, however, all praise must stop. Where engineering ceases, and architecture and taste should begin, there is nothing but a display of gross ignorance. Everything is gigantic, under the impression that large parts will produce an effect of size, when a little knowledge of the commonest laws of Art would have shown the reverse. The result is that the Embankment does not look large, but the people on it and everything near it appear small—another example of vast sums of public money comparatively thrown away.

Notwithstanding, when we turn to the banks of the Seine, the comparison, in spite of railway stations and numberless other horrors, is decidedly in our favour. There is, of course, a dignity in the great width of the Thames, and the immense bridges it necessitates, which cannot be attained by a small river, as is the Seine at Paris; but that does not affect the buildings grouped upon its banks.

Imagining ourselves in one of those swift little screw boats which ply on the river, and going eastward, the first edifice of note which we pass is the Tuileries and Louvre, which, from their position and size, naturally suggest themselves as parallels to the Houses of Parliament. The river front of these buildings is so immensely long and unbroken, that it hardly escapes monotony. It has certainly nothing to offer in comparison with the great towers of Westminster and the Abbey rising behind. And, continuing our route, the buildings on the quays, though much better individually than most on the banks of the Thames, form themselves into no groups or combinations, and we miss altogether the numbers of towers and spires which form so important a feature of the panorama of London.

M. Haussmann has been busily engaged on the banks of the Seine, but has not much improved them. The new houses near the Place du Châtelet are miserably tame in design, and the barracks behind the Hôtel de Ville are equally poor; whilst the Tribunal de Commerce and the huge barracks in front of Notre Dame may certainly claim to be amongst the ugliest buildings in modern Paris.

There can be but little doubt that were the Paris atmosphere as thick as ours in London, and the houses well begrimed with soot, the river view of the former city would appear very tame compared with that of the latter.

The quays at Paris are very fine, and fortunately not encumbered with mountains of granite and other specimens of high art, as our new Embankment is apparently doomed to be, hereafter to be backed up no doubt by long terraces of monotonous design, under a mistaken idea that uniformity is grandeur—make-believe public buildings with centres and wings, but with thirty or forty front doors a-piece, which soon reveal the true state of the case. If every man builds his own house, it is certain in the end to produce the truest and best effect. What a failure Regent Street has turned out, where uniformity once reigned, and now every shop front is different! One half a pillar is dirty drab and the other half sham marble, whilst endless excrescences abound on the roofs. How infinitely finer such a series of buildings would be as is presented by several streets in the City, where each edifice has its individual character!—or we may cite Pall Mall as a very fine instance of a good street.

There is something eminently absurd in such an arrangement as that at the western end of the Rue de Rivoli, where, for three-quarters of a mile, the same monotonous and spiritless design is carried through, incorporating the Hôtel du Louvre, with a frontage of more than 400 feet, and the Bureau de Finances, a still larger building. Here are two examples of *uniformity* not to be matched even in London.

## THE FOUNDER OF IRISH ARCHÆOLOGY.

As a general rule, the best way to estimate the value of any man is from the quantity and quality of the work he is known to produce. At the same time there are some whose work should not be determined merely by that which happens to bear their names, but who, as they have constantly co-operated with others in various ways, ought consequently to share in the credit obtained by work with which they have no apparent connection. Such, for instance, would be the proper manner to measure what Sir John Herschel has done. That he is, perhaps, the most eminent man of science in England would be acknowledged by all, but the books he has published, although they may be considered the best of their kind, afford by themselves but insufficient proofs of his greatness or of his industry. His admirers would, we are sure, desire that hereafter, the testimony of those who were indebted to him for counsel, should be accepted as evidence of what he had done to advance science, and of his vast attainments, as well as the volumes that might have his name on the title pages. This, too, is how George Petrie, the Irish antiquarian, and what he did for Ireland, ought to be judged. His landscape paintings, drawings for engravings, papers in the Transactions of the Irish Academy, or in penny magazines, or even the one volume of an unfinished work on which his reputation is mainly founded, seem hardly sufficient to merit that respect which all parties and creeds in Ireland had for him. But if credit is given to him for some of what may have been done by others through his influence, it is not difficult to understand why he was respected: thus we find one of the chief living antiquarians write, 'I used always to call Petrie "father" to his face, and did not scruple to confess my filial obligations to him;' and we find Petrie himself saying (and he was no boaster), 'I take great pleasure in visiting the Academy, for the students like me, and attend more when I am there than when any other visitor is on duty.' Such a man requires, indeed, a fitting biographer to be appreciated, and we are glad to say that Petrie has found one in Dr. William Stokes, the eminent physician of Dublin. Dr. Stokes speaks modestly of his qualifications for the task, but he has produced a most interesting and acceptable book (and that is by no means easy when it is an Irish subject), and one which we are sure, if Petrie could have seen, he would have approved of, and higher praise we could hardly give it.

George Petrie was the son of a portrait painter, and was born in Dublin in 1789. He was educated at Samuel White's famous old school in Grafton Street, where so many eminent men were once students, amongst others Moore and Sheridan, and where Sheridan's father used sometimes to lecture on elocution. After some hesitation, it was decided he should become an artist, and for this purpose he attended the schools of the Dublin Society, Danby and O'Connor being fellow-students of his. In 1813 the three visited London, and were introduced to Benjamin West who treated them with the kindness he always had for young artists. Petrie returned to Dublin, and commenced practice as a landscape painter, where he obtained as much eminence as was possible in a country where there was little patronage. As well as we can remember them, most of Petrie's early works would now, we fancy, be thought weak and thin; they were, however, very careful, and there was no pretension. His aim, it appears, was not merely to make his paintings copies of scenes, but to impress upon them, as far as possible, an Irish character. 'We cannot,' he used to say, 'get the full effect and beauty of Nature, but we can paint her to convey her spiritual lessons, in however faint a degree.' Wordsworth's poetry had always influence over him, and Dr. Stokes thinks there is a striking resemblance between the poet's descriptions and Petrie's landscapes. If when young he had come to England (like Mulready, Danby, Maclise, Macdowell, and other Irish artists), where he would have received more encouragement, and been induced to give undivided attention to painting, he would probably have accomplished greater things in art than he did, for his later works, after an interval of many years, displayed an unexpected vigour and feeling. Besides his paintings, Petrie made a number of drawings for engraving to illustrate the tours that at one time were popular. These deserve the highest praise for accuracy, and the architectural subjects are treated with a care that is not often met with. All the time he was making sketches through the country, Petrie was also studying its antiquities. He was hardly led to do this because he was an artist, for the forms of the antiquities then known have but little beauty. We think it arose from an inherent love of the subject, from seeing the base uses to which ancient things were applied, and perhaps out of pity to the inhabitants, who could see no value in monuments which were amongst the best illustrations of the past history of their country. For although he might be regarded only as an alien, as his grandfather was a Scotchman of Anglo-Norman descent, Petrie always cared much for the people, and was anxious to promote their education. In 1832 he established a penny journal, with the object mainly of illustrating the country; but although with the aid of such men as Anster, Ferguson, O'Donovan, Mangan, Curry, &c., he was able to produce a few volumes that Southey prized amongst the most valuable in his library, Petrie's magazine met with the inevitable fate of publications in Ireland, and ceased from lack of support. It deserves to be mentioned here, that with the same object of educating the people, he afterwards had the exhibition of paintings of the Hibernian Academy, of which he was president, opened at a penny entrance fee.

In 1828 the present Sir Thomas Larcom was made Director of the Ordnance Survey Office in Dublin. During the progress of the survey it was found necessary that some persons acquainted with the ancient language of the country should ascertain the correct denominations of the townlands into which Ireland is divided, as well as the proper orthography. Many of the names of places were puzzling, especially to the English surveyors, and besides, one townland would often be known under different names, so that investigation was required before one name could be selected for engraving on the plan. It was also arranged that remains of ancient structures were to be shown on the maps, but it was found that many of them would be likely to be disregarded except by the trained eye of an antiquarian. For these purposes a special department was established, and Petrie was placed at the head of it, and there was not another man in Ireland at that time so

peculiarly fitted for the position. Amongst his assistants were John O'Donovan and Eugene Curry, who after himself did more than any others in laying the foundations of Irish Archæology, and in a subordinate position, that wonderful writer, Clarence Mangan. Captain Larcom had intended that the survey should be supplemented by a series of memoirs on the geology and natural history, the statistics, and social condition of the country, the materials for which were to be collected at the time of the survey, and also the past history of the different portions, as far as it was ascertainable, the whole forming, as Lord Brougham said, 'a corollary to the survey, more valuable than the survey itself.' Perhaps it was too grand a project to be carried out at once. The geology has since been carried out by a special department, and for some of the other parts there is not so much need, but there never again can be so favourable an opportunity of investigating the past history of the country, and for the time it lasted, no men could work harder in endeavouring to take advantage of it than did Mr. Petrie and his staff. But after one volume had been published, and some four hundred manuscript volumes prepared, this branch of the survey was suspended suddenly, and notwithstanding all the entreaties that were made for its resumption, by those who were qualified to estimate its importance, no attempt was made to continue it. 'It seems,' says Dr. Stokes, 'as if some strong though concealed influence had been brought to bear on the Government, in reference to the danger of reopening questions of Irish history.' One of the papers prepared in connection with this part of the survey, and which was afterwards read by Mr. Petrie, shows how much was lost by its noncontinuance: we refer to the celebrated essay on the 'Antiquities of Tara Hill,' which may be considered as the key to the reliable history of Ireland, and the first example of Mr. Petrie's method of testing the truth of history and tradition by existing remains. Tara was the famous spot in Ireland, where the ancient councils were held, and where it was popularly imagined there stood a palace of no ordinary grandeur. A special survey was made of this hill, showing every trace of ancient remains, and this was corrected by Petrie and O'Donovan. All the references to Tara found in old manuscript chronicles were then collected, and the attempt was made to identify the structures that were alluded to with the traces still remaining, and from the correctness of the descriptions this was by no means difficult. Another plan was then prepared from the old descriptions, and the similarity between it and the first survey was marvellous. It was then but reasonable to infer, that if in this way the topography of the chronicles was found correct, the other descriptions found in them might be accepted as equally reliable. Mr. Petrie's account of the palatial architecture must have disappointed many enthusiastic Irishmen, when he described the buildings as being entirely made up of earth and timber. The old banqueting hall, however, was large enough, its size being 360 feet by 80 feet. The value of Mr. Petrie's essay was immediately recognised. Although it rendered some of his assertions incorrect, Moore said it interested and delighted him. Colonel Colby, the head of the survey, wrote to Mr. Petrie, 'You will have the consciousness of doing good service to the rising generation, and when true histories of mankind shall supersede the romances under the name of histories, which mislead the unthinking and perpetuate mischievous prejudices, your name will rise in estimation;' and Captain Larcom, who aided in its production, and in this as in other ways was more Irish than the Irish themselves, wrote, 'I look on this paper as one of a series, and properly the first; I consider it not only, perhaps not so much, an account of the remains at Tara, as a summary of proofs, that in the authentic existing documents of Irish literature is to be found the real clue to all our antiquities.'

'Next come the towers,' continues Captain Larcom, 'which will place the early Christian antiquities on a sound footing,' and it is in connection with his inquiry into the origin of the Irish round towers that Petrie is likely to be best remembered. This was a subject that afforded full scope for speculation, and Lynch, Vallancey, Beauford, Beaufort, Dalton, O'Connor, Betham, Windele, Richardson, Smith, and O'Brien, as well as others, took advantage of it in proposing various theories. They were fire temples, sorcerers' towers, celestial indexes, Phallic temples, watch towers, heroes' tombs, &c.; and in support of such theories, Persian, Punician, Egyptian, Grecian, Hindoo, Danish, and Scandinavian mythologies were brought forward and believed in, not by a few enthusiasts merely, but by some of the best balanced minds in the kingdom. 'In fancy,' says Davis, 'we had seen the white-robed Druid tend the holy fire in their lower chambers, had measured with the Tyrian-taught astronomer the length of their shadows, and had almost knelt to the elemental worship with nobles whose robes had the dye of the Levant, and sailors whose cheeks were brown with an Egyptian sun, and soldiers whose bronze arms clashed as the trumpets from the tower top said that the sun had risen. What wonder that we resented the attempt to cure us of so sweet a frenzy?' It is not difficult, then, to understand how many people like Davis must have opened Petrie's book, 'strongly bigoted against his conclusions,' which were derived, not from the fables of other countries, but from an examination of the structures themselves and the allusions to them in the Irish annals. The marvel is that no one before thought of adopting what seems so natural a method of investigation. The work was to have consisted of three parts—the first an examination of the previous theories, which Petrie considered erroneous; the second a description of the remains of the earliest ecclesiastical architecture in Ireland, and an explanation of Petrie's theory; and the third part (which was never published) was to describe the architecture up to the time of the invasion. From an examination of all the remains, Petrie's conclusion was, that there was not the slightest authority to show that the Irish were acquainted with the art of constructing an arch, or with the use of mortar, before the introduction of Christianity into Ireland, and that consequently the pre-Christian origin of the towers had no foundation. Then, from the allusions to them in the ancient records, he inferred that they were intended to serve as belfries, as storehouses in which to keep the valuables belonging to the churches they adjoined, and to which the religious might be removed in case of a raid, and possibly as beacons at night. Petrie would seem to be so much engrossed with demolishing the pagan theories, that sufficient precision is hardly shown in assigning the periods when they were erected, and, perhaps, little

evidence could be found for asserting that so early as the sixth century the Irish were capable of performing such work.\*

The collection of the old airs of Ireland was another labour which Petrie carried on during his life. He was passionately fond of music and was a good performer, but his motive for collection was not his own gratification as a musician, but the firm belief that at some future day the relations between the popular music of different nations would become a subject of scientific investigation, in the way that languages now are, and that it was right to provide materials for that purpose. 'Deep researches,' says Dr. Stokes, 'are now being made as to the extent of the civilisation of the Aryan family before it separated, as to the situation of its abode, and the relative periods at which its members left their common home. The groundwork for such researches is supplied by the words common to the various Indo-European languages, and it may well be asked whether the natural music of a country, in itself a language of all others most subtle and refined in expression, should be passed over without investigation. If the study of philology be invaluable, as a means of increasing our knowledge of the development and progress of the intellectual, so should music be prized as the language of the motive faculty.' Whenever music is studied in this way, the value of Petrie's collection (one volume only of which has been published) will be appreciated, for with the last generation most of the old airs have passed away; and not only in Ireland only, but elsewhere; for on one of his visits to Skye, his hostess told Petrie that a few years before, she was able to find several people to sing all the old music for Worsaae the great Danish antiquary, but that it was then impossible.

We wish we could describe all Petrie's other services to Irish Archaeology, but we have no space for the purpose. Our object has been merely to indicate the departments in which we think he has rendered most service. For the remainder we must refer to Dr. Stokes's book. Of the man himself we may say, few can have had a more enviable old age. He saw rising around many students of antiquity, all of whom regarded him with reverence and affection; he had honour, love, obedience, troops of friends; and he retained, too, that boyishness which, luckily, sometimes accompanies genius to the end. 'Let us,' says Danby in one of his letters to him, 'exult in the confidence that we belong to that class of our fellow-men, who, by the elixir you describe—the true enjoyment of nature—retain the heart of youth, though the eyes grow dim, the hand trembles, and the head fades grey.' And in this way his life glided along until January 17, 1866, when he passed away as peacefully as he had lived.

### THE ART OF THE GOLDSMITH.

TO record a nation's history in letters of gold, is a form of expression which admits of more than a two-fold interpretation. There is, indeed, the strictly literal interpretation—the marble slab or the vellum page inscribed with golden characters; and there is the *libro d'oro*, 'the golden book'—the book 'golden' because, written also in gold, it contains only the names, the genealogies, and the memoirs of noble and illustrious citizens; and, again, there are the national annals that may establish a claim to the same proud epithet, based upon the eminent intrinsic worthiness of the narrative, coupled with the rare excellency of the narrator's style and language.

But, on the other hand, the veritable precious metal, the gold itself, may be taught to assume an historical character through the agency, not of language, but of art. Works of art of every class and variety executed by the goldsmith in process of time resolve themselves into the component elements of so many chapters in a national history; since they bear both a faithful and an unpremeditated testimony to the scientific knowledge, to the artistic taste, and to the manual skill of a people; and at the same time cast a reflected light upon their prevailing sentiments, requirements, and usages. Works of art in gold, regarded as historical relics, possess the important quality of being imperishable; while, having in the first instance been produced simply for present use and without any idea of future historical association, their testimony may be accepted without hesitation as strictly truthful and absolutely free from partiality.

In our own country the researches that have been made during the last quarter of a century amongst the graves of the Anglo-Saxons have brought to light numerous specimens of Saxon gold jewellery which, in connection with relics of other kinds, have enabled us to form a correct estimate of the civilisation and character of those early predecessors of ours in the occupancy of this island. It has been the same throughout the other north-western regions of Europe, so that at length there exists a series of chronicles, intensely interesting to ourselves, of which it may be said that they have actually been recorded in gold. If, again, we turn our attention in another direction, and look towards the south-east of Europe, we find that Italy has preserved in rich abundance works of ancient native artists in gold; and the extraordinary beauty and delicacy of these relics proclaim beyond all question the high civilisation of races that had flourished on that classic ground, and had passed away, before Rome had arisen there to overshadow even their memory with its far greater splendour.

Without now tracing the existence of similar relics in other European countries and in the East, we desire to notice certain qualities, common under varied conditions to them all, which impart to these ancient works of the goldsmith's art their historical character and their great value. The purity of the metal, and its consequent preciousness in the case of these ancient works generally, are considerations of comparatively small importance. It is in their *treatment* of fine gold that the ancient goldsmiths have bequeathed to their successors of all ages and generations such an admirable example. And, strange to say, it is in this same matter of treatment that with the general progress of civilisation, and more particularly in connection with the rapid advance and development of science,

modern goldsmiths have long permitted their art to degenerate. Happily, however, the time has at length come in which the art of the goldsmith has experienced an energetic revival. Accordingly, it is with a view to support the efforts of those living masters of art in gold who already have accomplished so much, and in the general interest, at the same time, of a great and important national expression of art in alliance with manufacture, that we appeal to the ancient glories of the art of the goldsmith, and set them forth for the admiration and also for the admonition and instruction as well of the public who employ the services of workers in the precious metals, as of the men who work in them.

Ancient works in gold are invariably distinguished by national or local peculiarities of style and character; and they are historical in consequence of their possessing such peculiarities. The works of the Etruscan goldsmiths are historical of the Etruscans, and those of the Scandinavian goldsmiths of the Scandinavians, because each group of works exhibits certain characteristics of the nationality or country of their producers. Different artists of each race, as a matter of course, may have shown that they were endowed with differing degrees of artistic capacity; and in successive periods there may have existed in the same country, in like manner, various modifications in the prevailing attributes of the same style and type; but still, in their essential and distinctive qualities, the style and the type continued to be the same—the style and type of the Etruscans always Etruscan, of the Scandinavians always Scandinavian. Again, the ancient goldsmiths, each in their own style and in harmonious conformity with the general requirements of their traditional and accepted types, worked out the embodiment of their own thoughts. Acting under the impulse of motives of their own, instead of copying and reproducing models, they devised original designs; and so they never failed to infuse into their works a genuine artistic spirit and feeling. Moreover, the ancient goldsmiths, with one consent, adapted their designs both to the nature of the material in which they worked and to the special purpose which each production of their art and skill was destined to accomplish; their designs, consequently, were assimilated to those of Nature herself in the element of appropriateness in combination with that of beauty. Their beauty was consistent and significant—a beauty made infinitely more beautiful through its consistency and significance. Once more—in their processes of practical working these artists of early times have demonstrated a perfect mastery of their art, that must ever continue to command unqualified admiration. And here, as in the matter of design, it is in the felicitous adaptation of processes to material, and also to design, that ancient goldsmiths' work is so admirable and so suggestive.

Amongst the revivers of the art of the goldsmith, the first place is worthily filled by Signor Castellani, of Rome and Naples, who at once placed this revival on a sound and enduring foundation by uniting the reproduction of ancient designs with the restored practice of the ancient processes. To Castellani is due the merit of having been the first to recognise the supreme excellence of the ancient works in gold, and to accept them as guides and instructors invested with paramount authority. Then it was, when he had resolved, as his only safe and sure guide to a corresponding excellence in his own works, to reproduce with minute exactness some of the finest of the relics of ancient art, that Castellani discerned the inseparable alliance between the ancient designs and the ancient processes—he found that by means of the ancient processes alone it would be possible for him to effect an absolutely perfect reproduction of the ancient designs. Modern works in gold, produced by modern processes, might resemble ancient models; but if the works of a modern goldsmith in every quality and condition and circumstance were to be equal to ancient works, and in fact were to be actually identical with them, recourse must be had to the ancient processes, and to them alone. It is well known how, in a remote mountainous district of Southern Italy, Castellani discovered the existence of certain families of working goldsmiths who retained a traditional knowledge, by them derived in hereditary succession from father to son, of the principles of those very processes, supposed to have been long unknown and forgotten, which the ancient goldsmiths had invented and perfected, and then applied in their practice with such triumphant success. How he succeeded in attracting to his own establishment some of the most skilled and experienced of those representatives of the Etruscan goldsmiths of remote ages, is well known also; and how it followed that, under his masterly guidance, a school of artists was formed who were enabled to execute, in granulated gold, works that would have done honour to the most renowned of the old Etruscan masters. Thus has Signor Castellani carried into effect the following propositions:—That the first thing to be accomplished by the goldsmiths of the present day is to raise themselves to an equality with the greatest of their predecessors; and that this is to be done simply and solely by reproducing, after the manner of the greatest of their predecessors, the greatest of their known works.

### CAISSONS FOR PIER-BUILDING.

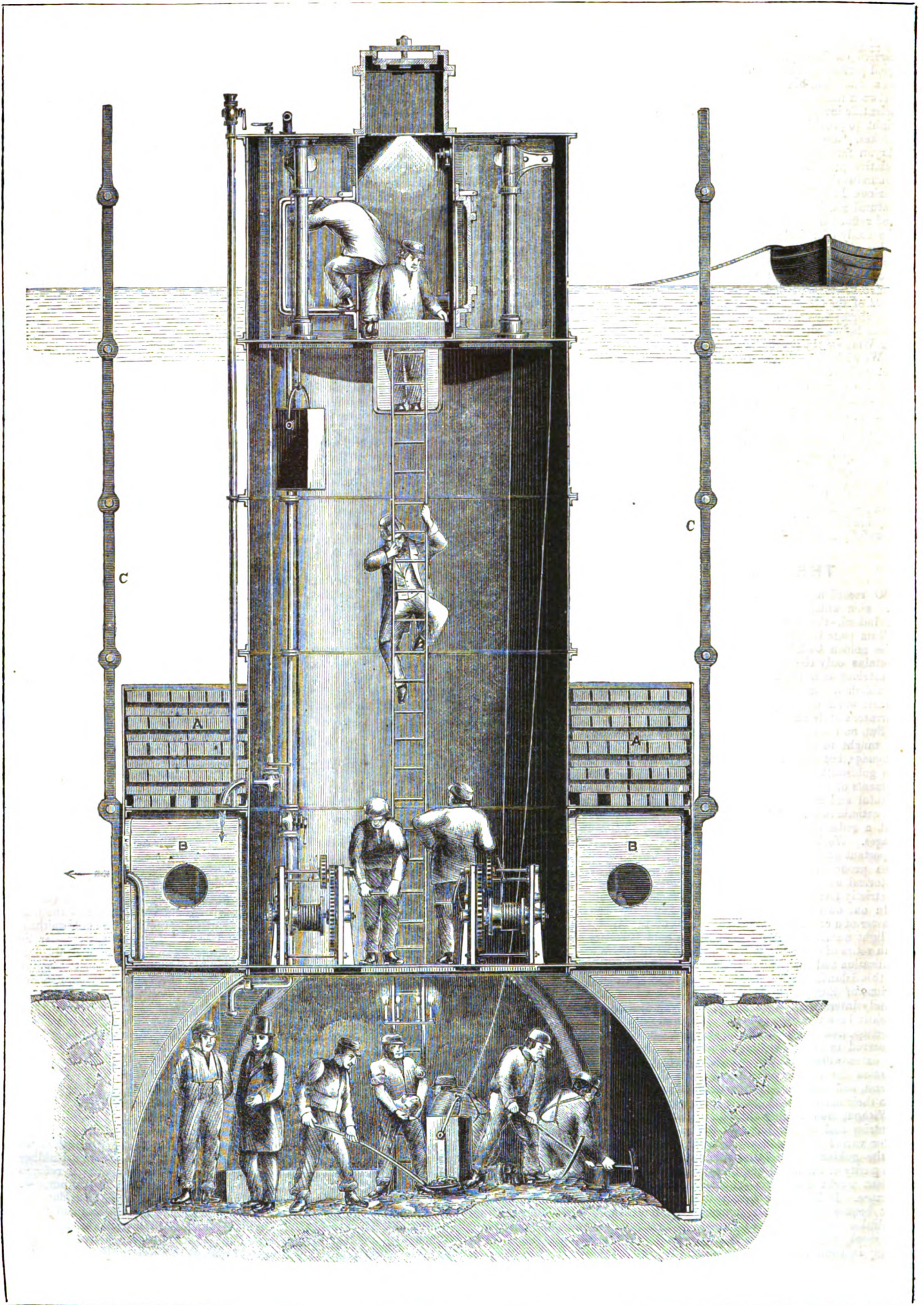
#### NEW BRIDGE AT COPENHAGEN.

BEFORE more particularly describing the engineering illustration we give this week, as showing a new and very clever method of building bridge-piers, it may not be uninteresting to many of our readers to refer to one or two former contrivances which have been employed for that purpose.

Dr. Ure, in his 'Dictionary of Arts,' mentions what is considered to have been the first application of sinking cylinders through sand and water (quicksand). He says that a mining shaft formed of a series of large sheet-iron cylinders riveted together was sunk to a great depth through the bed of the river Loire, near Languin. The seams of coal in this district of France lie under a stratum of quicksand, from 18 to 20 metres thick—equal to about 58 to 66 feet English—and they had been found to be inaccessible by all the ordinary modes of mining previously practised. The difficulty of reaching them had been thought so entirely insurmountable that every portion of the great coal basin, which extends under these alluvial deposits, though well known for centuries, had remained untouched. To endeavour, by the

\* It is very curious that no attention seems ever to have been paid to this subject by an Irish architect. Of all the books that have been published on the Round-Towers, Mr. Wilkinson's is the only one written by an architect, and he is not an Irishman, although he has practised in that country. The controversy now turns on the character of the masonry of the different towers, and surely on this point architects and engineers ought to be the proper judges, rather than those who are striving to decide the matter.





CAISSON FOR PIER-BUILDING.

(DESIGNED BY MM. BURMEISTER AND WAIN.)



usual workings, to penetrate through these semi-fluid quicksands, which communicate with the water of the Loire, was, in fact, nothing less than to try and sink a shaft in that river, or to drain the river itself.

This difficulty, however, was successfully grappled with by M. Triger, an able civil engineer. By means of the sheet iron cylinders we have mentioned, he contrived with the aid of force-pumps to keep his workmen immersed in compressed air of sufficient density to force back and out of the bottom of the cylinder all the water which was there, and thus enabled the men to excavate the sand, gravel, and stones to such a depth that when the cylinder was sunk to a water-tight stratum, the compressed air was no longer necessary. An air-tight chamber at the top of the cylinder had a man-hole door in its cover and another in its floor; when the men had entered this chamber the upper door was closed, and compressed air from the cylinder was then admitted by means of a stop-cock. As soon as there was an equilibrium of pressure established between the chamber and cylinder, the man-hole door into the cylinder was opened and the men descended to their work. Here they had to work in air at a pressure of about three atmospheres, *i.e.*, equal to a pressure of, say, 44 lbs. per square inch. While the compressed air thus drives the water of the quicksand out of the shaft, it is said to infuse at the same time such energy into the miners that they can easily excavate double the work without fatigue which they could perform in the open air. Upon many of them the first sensations are painful, especially upon the ears and eyes; but they rapidly get accustomed to the bracing element. It is even said that old asthmatic men here become effective workmen, deaf persons recover their hearing, whilst others are sensitive to the slightest whisper. Much annoyance was at first experienced by the rapid combustion of the candles, but this was obviated by the substitution of flax for cotton wicks.

The contrary principle to this of sinking cylinders was proposed by Mr. Potts, a medical gentleman of great inventive ability. His system was adopted in sinking the piers of the Black Potts Bridge, which crosses the Thames near Richmond. Each cylinder was lowered into the river in its proper vertical position, and then loaded sufficiently to make it sink when the greatest vacuum was obtained. The vacuum was produced by means of suction pumps, and then the external pressure of the atmosphere forced the mud, sand, or gravel and water from the bottom of the cylinder up inside of it, thus allowing the cylinder to descend as much as the displacement of the material at its base in the bed of the river would allow with the force of its own weight and load. The material thus forced up into the cylinder was scooped, or dredged, out as much as possible, the operation of creating a vacuum being again and again repeated till the cylinder was sunk to the supposed proper depth. It has been said that some of the cylinders sunk when the weight of the bridge and proving load came on them. This fault, however, cannot be charged to the mode of sinking, for in that case the cylinders could not have been sunk deep enough, or they were imperfectly filled in. At the same time, if the water had been forced or kept out by means of compressed air, there would naturally have been far greater facility for seeing and insuring a good and secure foundation.

The new cast-iron arched bridge over the Medway at Rochester is one of the first bridges built upon cast-iron piles sunk deep into the bed of a river by means of compressed air, used to keep out the water while the workmen were employed in excavating the material inside the piles, and allowing them to sink by means of their own weight and the load placed on them. This bridge is built near the site of the celebrated old bridge at Rochester, and consists of three spans (one an opening span). Each pier is formed of 14 cast-iron cylinders placed in a double row and sunk through the bed of the river into the hard chalk. All these cylinders were sunk by means of compressed air, to keep out the water while the men were at work in them, in a very similar manner to the method adopted by the French engineer, M. Triger, for sinking his shaft. Mr. John Hughes, Civil Engineer, was the first to adopt this mode of keeping the water out of piles while being sunk to form piers in the beds of rivers, and great praise is due to him for the thorough and practical way in which this system was carried out, in sinking seventy cylinders to a great depth in the bed of a strong tidal river like the Medway. The bed of the river was found to consist of strata of soft clay, sand, and gravel over the chalk, which was reached at a depth of 44 feet below average water line. Each cylinder was like an immense diving-bell, always having its top out of the water, no matter at what depth the bottom was. They are formed of cast-iron pipes, 9 feet long and 7 feet diameter, with internal flanges, so that the external faces are free of any projections that would interfere with their free descent through the bed of the river. The access to and from the inside of the pile, while being sunk, was through two air-locks of chambers, made of cast-iron, passing through the cover-plate bolted on the top length of the pipe forming the pile. The tops of these locks had openings 2 feet in diameter, and flap-doors which, when closed, allowed them to be filled with the compressed air from the cylinders. From each air-lock there was a vertical door opening into the air-chamber, which, when closed, was also air-tight, so that when the workmen had to pass in or out, or to take out the excavated material, they could do so without decreasing the pressure of the air very much. In coming out, they entered, through one of the vertical doors, into one or the other of the air-locks, and when this door was closed, the pressure of the air was reduced to atmospheric pressure by means of a small cock, opened to the atmosphere. As soon as there was an equilibrium of pressure, the top door was opened and the men came out. The operation of entering the pile or cylinder was the reverse of coming out. The only loss of the compressed air from the cylinder at each operation was the amount contained in the small air-lock.

Within the cylinder were two small cranes to lift the full buckets and lower the empty ones, which were worked by a two-handled windlass. As each pile was sunk 9 feet, the air-chamber was disconnected and a fresh length of pipe bolted on, and the air-chamber bolted on top of this. At each joint a floor or staging was fixed, with openings to allow of the ascent and descent of the workmen and the full and empty buckets, &c. These cast-iron pipes form part of the permanent structure of the piers, and when they were sunk to their proper depth they were filled in with concrete and brickwork.

The method of working was by setting the air-pumps in motion, having

the top door of one of the air-locks and the bottom one of the opposite air-lock closed. The pumps were of such a size that in about five minutes 15 feet head of water was forced out through the bottom of the piles; and whilst the pumping continued the workmen passed through the air-locks to their various stations.

The engineering illustration which we give this week shows a more economical method of building piers in the beds of rivers, or under water. It shows a caisson or diving-bell, designed by Messrs. Burmeister & Wain, and adopted by them in building the piers of the new bridge in Copenhagen. The principal economy consists in having the caisson, or cylinder, of less cubic capacity than the finished pile of the piers, and in being able to take it away as each pile was built. When the excavation was made deep enough for a firm foundation, the building of the pile was commenced, and as it increased in height the caisson was lifted accordingly until the pile was above water-line, when the caisson was removed to the required position of the next pile, and so on, until the two piers, each formed of two piles, were completed. This plan of lifting the caisson avoided leaving the whole of the piles of the piers encased in ironwork, as in the piers of Rochester and many other bridges. This caisson was made of wrought-iron, 18 feet diameter at the lower part by 8 feet high, and above this to the air-chamber out of the water it was only 10 feet diameter. Just above the 18-foot diameter chamber there were two annular rings, or chambers—one to contain iron ballast, A, and the lower one water ballast B, so that in sinking the caisson the water chamber was filled with water for weight in addition to the iron ballast in the annular chamber above. When they had excavated to the solid strata, a bed of concrete 3 to 4 feet thick was formed, and on this the remainder of the pile was built with granite facing filled in with brickwork. As the building of the pile proceeded, the caisson was lifted by means of the suspension chains C, connected with staging overhead, and by pumping air into the annular air chamber B to displace the water. The finished piles are about 18 feet diameter at their bases, and 16 feet diameter at their tops, by 30 feet high. The whole of the work below water line was done in the 18 feet by 8 feet chamber at the bottom of the caisson. Between the time of lowering it to the bed of the river and the completion of the first pile to water line was only twenty-eight days, and then the apparatus was moved into position for the next pile. In lowering it for the second pile, it unfortunately got upset, and caused so much delay that it took thirty-six days to complete this pile. The third pile was, however, finished in sixteen days, and the fourth in seventeen days.

The air chamber and locks on top of the caisson were very similar to those used for sinking the piles of Rochester Bridge.

## THE SUEZ CANAL.

A REMARKABLE document, of which we presented our readers with an abstract in a recent number, has not received the explanation which its appearance is calculated to call for, but which, oddly enough, no one seems to have thought of requiring. For an English engineer, in the first rank for eminence and for occupation, to publish a report on one of the chief European problems of the day, is, at all events, an unusual occurrence. The habits of Mr. Fowler are hardly those of a courtier; nor can we venture to trust that that good time has yet dawned upon the profession of the civil engineer, in which Royal personages will require the services of an engineer-in-chief as a necessary functionary of a travelling household. They might, no doubt, do much worse, but that is not now the question. Nor could the most enterprising journal, on either side of the Atlantic, well afford the honorarium which would be necessary to produce such a report, from such a source, for their own special service.

Taking for granted, however, the accuracy of the simplest hypothesis, that Mr. Fowler, travelling for his health, took occasion to send home a description of a subject that he knew would so much interest the English public, and attributing to this public-spirited motive alone the precise form and elaborate detail of his report, the document in itself is one every way calculated to receive very serious attention. It is one in which we have to read between the lines, and to draw inferences from the facts set forth, which the caution, the purpose, or the good feeling of the writer, prevented him from himself stating.

Mr. Fowler commences by a sort of condemnation of the opinion formerly expressed by Mr. Stephenson, as to the impracticability of the canal scheme. Impracticability, in engineering arts, is neither more nor less than another term for disproportionate expense. Bearing in mind that explanation, we question whether anything could much more fully justify an expression of extreme diffidence as to the commercial practicability of this most interesting enterprise than the report of Mr. Fowler. That the works necessary, not only to the opening, but to the maintenance of this artificial 'Strait,' are of 'such vast magnitude, and in a country which presents such peculiar difficulty,' is precisely that which has led other engineers, besides Mr. Stephenson, to conclude that M. de Lesseps has not attacked his gigantic task in a method that will ensure a permanent triumph.

The conclusion to which our present information seems to point is not, in our opinion, that the enterprise should be suffered to fall through. That it can answer as a commercial speculation, seems more doubtful the more we learn of the precise facts of the case. But the great national importance of the enterprise, and the interest which commercial Europe, and especially commercial England, has in the opening of a sea-way to India, with which no railway could ever compete, are such that, should the time arrive when the projectors of the undertaking are compelled to admit that its magnitude is beyond the grasp of any privately-organised association, we trust that the English, the French, and the Egyptian Governments will come to the rescue; and provide at once for the *real* completion and the adequate maintenance of the Canal, and for the indemnification of all those who are *bona fide* contributors towards its construction.

It is not by understating the actual difficulties of the case that this result will be attained; and those are the truest friends of this great maritime enterprise, who look the facts most steadily in the face.

## ILLUSTRATIONS.

CHRIST CHURCH CATHEDRAL, DUBLIN.  
GEORGE EDMUND STREET, A.B.A., ARCHITECT.

A COMPLETE description of this Cathedral, and the works of restoration proposed and in progress, was given, in the architect's own words, in our numbers for January 16 and February 3, and was accompanied by a plan, sections, and a side elevation. We this week give the elevation of the West Front, which it will be recollected 'required a new door and new windows.' Mr. Street has happily been able to recover sufficient traces of the old work to enable us to consider the elevation as now shown a very close, perhaps a perfect, restoration of the old design.

BOXGROVE CHURCH, SUSSEX.

FEW English counties are as rich in picturesque examples of Early English architecture as Sussex. The illustration given in this number is a specimen, although many of the other little churches in the county have more of that quietness and beauty which is so characteristic of Sussex work. The Priory, Boxgrove, was founded by Robert de Haiâ, Lord of Halmacro, A.D. 1117, and is now in ruins, except the chancel of the original church, which has been restored, and is at present used as the parish church.

CARISBROOKE CHURCH, ISLE OF WIGHT.

CARISBROOKE Church, Isle of Wight, is about the most conspicuous architectural work in the centre of the island, excepting the famous old castle of Carisbrooke, which stands on the hill above it. It is said to have been built in the 11th century; although the tower, which is plain in detail, but an elegant composition, is evidently the work of a later period. A priory originally stood on the north side of the church, but scarcely a trace now remains of it.

W. YOUNG.

## ARCHITECTURE AND ENGINEERING.

SINCE the day when the lowly miner and man of genius, George Stephenson, begat the idea which was to make him more potent than Prospero, and enable him, calling to his aid the genius of steam which Watt had evoked, to bid his ministers girdle the solid earth with bands of iron, what has not been done by engineers? The theodolite and the level, the pick and the shovel, the blast-furnace and the rolling-mill, have conquered space and transformed the earth. The capital cities of the world have been brought nearer to each other than were county towns a half-century ago, and we can now realise the prophetic saying of Columbus, that 'the earth is little.' Electricity has conquered time, and the men who hold her currents in their hands have taught them the languages of man. Yes, engineering is a great power; its legions outnumber Cæsar's, and the works of its hands mock those of the Pharaohs.

But, while we give all honour to this new power in the material world, we must not forget that its kingdom is of the earth, and that with the sphere of beauty, of grace, of art, and of imagination, it has no part. From the geometer and the arithmetician, from the men who weigh and the men who poise, it draws its inspiration and renews its force.

Architecture, on the other hand, whose more subtle influences have been overlooked in these busy times because of the mighty triumphs of this new conqueror, can yet boast of nobler friendships and a higher lineage. Her dwelling-place is, and has ever been, with the scholars, the poets, and the painters. She has given palaces to every dynasty, and temples to every religion. On her walls the Assyrian carved his victories; within her pyramids the Egyptian entombed his monarchs; amidst her pillars the Greek loved to linger and discourse—the Roman to bathe and to wrestle; Europe learned half her Christianity from her pictured churches; and a new beauty dawned upon the world from the labours of her votaries in the cloister.

What triumphs, after all, can the science of the engineer show to compare with these, which have illumined every page of the world's history, and which still stand as the highest out-come and most enduring record of every phase of its civilisation?

While, then, we cheerfully accord to the most practical science of the present day its due merit; while we gladly watch the steam of its locomotives traversing the wide waste of North American prairie or tufted tract of Indian jungle; while we hail its steamers on every sea, and behold the world, by its energy, gradually being narrowed and its races assimilated; let us not, for that, abate a jot of our pride in the noble art—to which, indeed, the kingdoms of the earth have not been given—but which has, instead, as its heritage, all the gifts of beauty; as its field of labour, all the homes of men; as its companions, all the fair sisterhood of the arts.

## MR. RUSKIN ON GREEK MYTHS.

ON Tuesday evening, March 9, Mr. Ruskin gave a lecture on this subject at London University College.

After some introductory remarks, Mr. Ruskin opened by explaining what a 'myth' is. 'A myth,' said he, 'is a story with a meaning attached to it. Thus, if I tell you that Hercules killed a water serpent in the Lake of Lerna, and no more, my story is not a myth; but if I tell you that Hercules cured many streams from a deadly miasma, the story is a myth, and means not merely that Hercules cured a miasma, but that he contended with the evils of envy and ambition, not only in others, but in his own soul.'

'It is possible that the story-teller meant nothing else but what he literally said; and it is very necessary to determine, in reading these legends, whether you are listening to what is literal fact, or to a philosopher who is telling what is really true veiled under a legend. Certain it is that to the general mass of the people the story was literally true, and in dealing with the Greek religion we must remember that this simple belief was bedded in the minds of the people. An explanatory system was as little expected by them as by us. The story of Hercules and the Hydra was a tale to almost everybody of a real giant and a real monster, as the legend of St. George is, and the average Greek was just as far from detecting any other meaning as the peasant is from perceiving that George and the dragon had relation to the story of infidelity. Hercules was no dead hero, victorious over dead monsters, but helpless now; he was the proper type and personification of heroism, and its living aid against every ravenous form of human trial and pain.'

'There are two great origins and sources of myths—History and Nature. The historical myths we will leave the masters of history to follow; but the stars and hills and streams are with us yet, as they were of old, and we only have to listen to them with childlike earnestness and reverence to understand the first words spoken by them to the sons of men.'

'From the rising and setting sun, and from the atmosphere, the Greek forms the idea of two personal and corporeal divinities, and, collaterally with these corporeal images, he conceives also two spiritual influences, of which one illumines like the sun, and the other, like the air, is the power of calm fortitude and righteous anger.'

'The moral significance of a myth depended greatly upon who made it. You cannot make a myth unless you have something to make it of, any more than you can tell a secret unless you are acquainted with it yourself. The first question in reading a mythic story is, What wise man first perfectly told? and what strong people first perfectly lived by it? and so the real meaning of the myth is, what it had in the noblest time of the people who lived by it. We can only draw lessons from the plants and clouds and living creatures, as we ourselves take pleasure in beauty. And as the myth completed itself in the completed nation, and their every effort was stirred by the thought of companionship with immortals, we shall be able to follow them only in degree as our natures are strengthened by the same feelings. If we waste each day in sloth and folly, the rising of the sun has no meaning for us; but if for us the sun means daily restoration to the scenes of pleasant gladness and perfect life, and the purging of evil visions by the bright vision of the dew, it becomes in reality a spiritual power.'

'The time then taken for one or two of the myths of the Grecian religion shall be about 500 years B.C., or the time of Æschylus. At that time we find, under the governing Lord of all, four elementary forces—the elements—the earth, the waters, the fire, and the air. Each of these is descended from more ancient deities, but at this time we find the four quite defined. They are the kings and queens of the earth, and of the air we breathe. The range of their separate dominions shall be briefly mapped out, and then the most interesting legends of the daughter of the air dwelt upon more at length.'

'Earth (Demeter or Ceres) is the dust from which we are taken, and to which we must return; the god who receives and gives forth from her bosom—the avenger of blood: "thy brother's blood calleth to me from the ground."

'Poseidon (Neptune) is the dominant spirit of the water, with subordinate myriads of other spirits, and spiritually the chief of the waters is Lord also over the flow of the human mind. Ceres then was over the earth in its giving and taking, Neptune over the water in its flow and life.'

'Fire, the third element, is presided over by two powers; over all earthly fire is Hephaestus (Vulcan), and over heavenly fire is Apollo, the chief of all intellectual wisdom. Lastly, we come to the myth which is to be the subject of our inquiry—the story of Athena.'

'Athena was physically the Queen of the Air, and of life, the breath of man. The heart virtue of which she is the spirit was separated into four divisions, which have since received the names of the cardinal virtues, namely, prudence, justice, fortitude, and temperance. With respect to these, the attributes of Athena are all distinct. For her prudence she is "owl-eyed." For her justice she wore two robes—one of light, and the other of darkness. For her fortitude she wore the crested and unstooping helmet. (We may see these realised in the Hebrew imagery—"For he put on righteousness as a breast-plate, and a helmet of salvation upon his head: and he put on the garments of vengeance for clothing, and was clad with anger as a cloke.") Lastly, in her character of temperance she is the Queen of Maidenhood. But all these qualities mass themselves into the two of justice and patience; and of these the Greeks have written two mighty songs.'

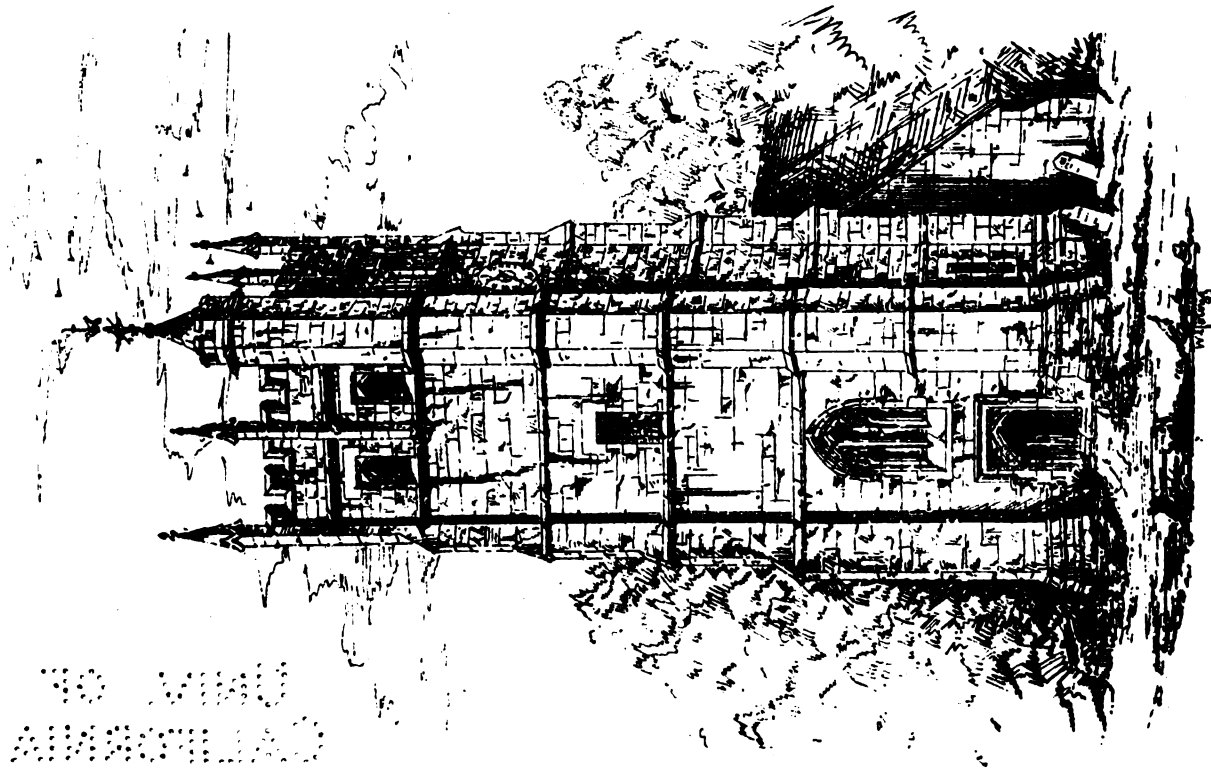
Mr. Ruskin then said that the stories of Athena were so many that he hoped some day to collect them together; but that to-night he would touch only upon those under the head of Eolus, the god of storm, as given us by Homer. He describes Ulysses as coming to the happy Eolian Islands, surrounded by walls of brass (emblems of towering clouds lighted by the sun). Here Ulysses was hospitably treated, and sent away with all the adverse winds securely locked up in bags; the bags were cut open by the sailors, and they were driven back to Eolus, who refuses to help again those who had incurred the anger of the gods.

'Notice the gentleness of this legend—a quality especially to be noted in Homer. In the battle for the body of Patroclus, when the Greeks are all but overpowered by Hector, how did the king, Agamemnon, address them? "Think," he says, "of Patroclus, think how gentle he was." This he addressed to the soldiers, to make them hold on. And this idea of Eolus remains to the latest time—to the very last he is a kind-hearted monarch. Another beneficent storm god, pure Boreas, occupies an important place in legend. The fable of the harpies is always connected with Boreas because the two sons of Boreas are enemies of the harpies and drive them back. Harpies are identified with those short gusts which lift the dust in whirls, or the papers on the table in a room when the window is left open. This is the physical meaning. As for the mental, harpies signify those short gusts of malicious anger wholly different from the noble anger of the greater

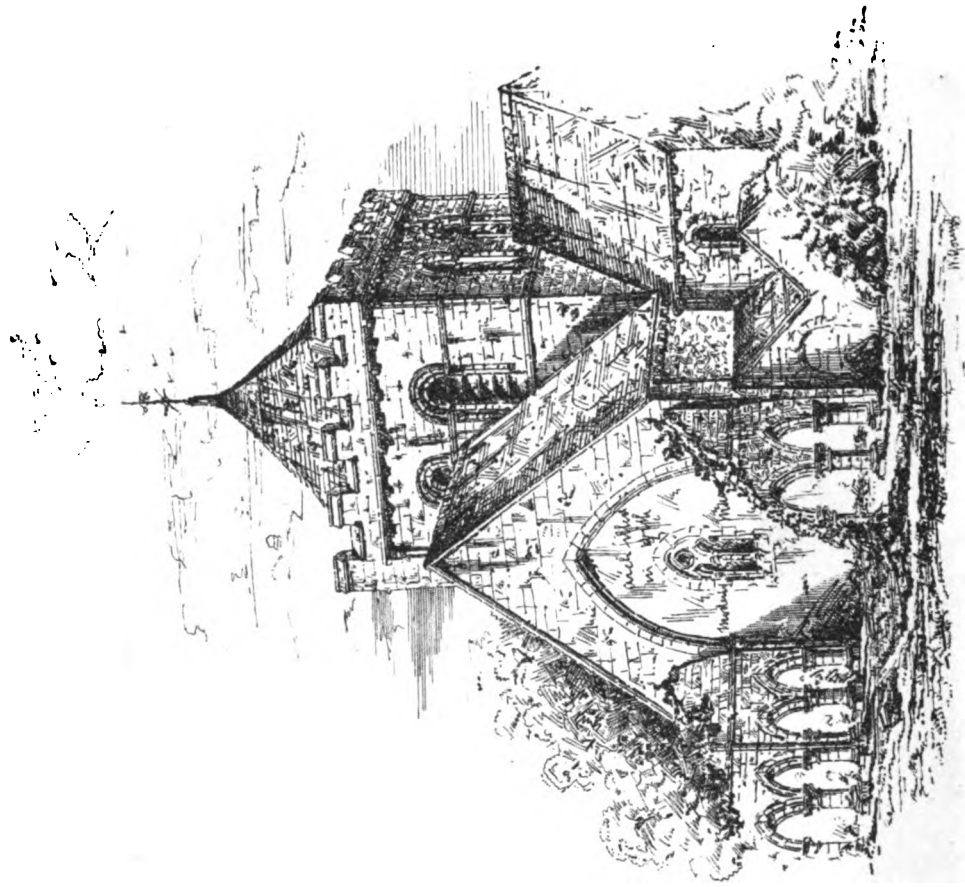


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John Birchall, March 20<sup>th</sup> 1869.

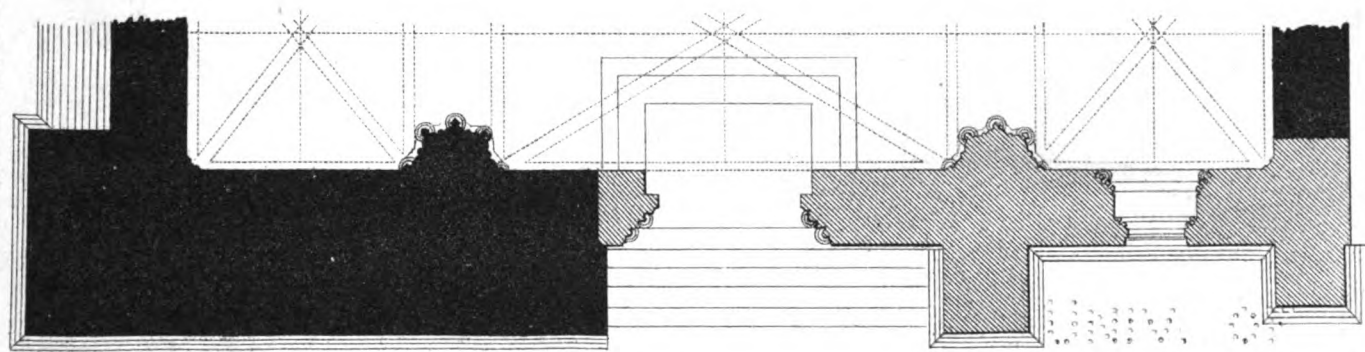


CARISBROKE CHURCH. ISLE OF WIGHT



BOXGROVE CHURCH SUSSEX.

Printed by W. H. Stiles & Co. London E.C.



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Christ Church Cathedral, Dublin.  
No. 3, West Elevation.



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अथर्वशास्त्रं

tempests. Harpies are related to the nobler tempests, as Charybdis is to the sea; they are gusts of frightful, lawless passion, meagre and insane, spirits of wasted energy, and bring nothing with them but evil.

'We must always be prepared to read Greek legends as we should trace threads through figures of a damask: as some thread runs through the web and makes parts of different figures, so the Greek fables bend and cross in different directions; thus the harpies who represent vain desires are closely connected with the syrens who represent constant desires. There are two groups of syrens, one noble and saving, and the other as fatal; but there are no noble harpies.

'We have hitherto spoken only of the deities of the winds; we now pass on to a more important group, which must be touched on slightly—the deities of the clouds, which are subject to the God of the Air. Chief of these is Hermes (Mercury). To Hermes is given the power of concealment and theft. The snatching of the harpies is by brute force, but the snatching away of the clouds is by deceit, and with this is associated the Egyptian thought of leading away the souls by death. We must pass by the lovely group of myths connected with Mercury dwelling in the mountains of Sparta. Temple after temple rises there of the divine marble that no tool has polluted; on these cloud-mountains of Greece, Maia, from whom our month of May has its name, gave birth to the shepherd of the clouds—wing-footed and deceiving, restless messenger between the highest sky and topmost earth—the winged Mercury.

'Semele, the mother of Bacchus; Medusa; Pegasus, the god of fountains; the Chimæra; the thunder-cloud on the volcanic mountain—all these, and many more, are subject to the dominant power of Athena. She is the air giving life to the human heart, giving power to the vegetable earth, and this is why the olive tree is precious to her. Then she is the air giving movement to the sea and rendering motion on it possible. Lastly, she is the air nourishing artificial light as opposed to the light of the sun; and with this is connected her power over household work.

'She is the breeze of the mountain and the sea. Whenever you draw a pure long breath of free heaven without any smoke in it, either from a chimney or from a cigar, you take Athena into your heart and brain. Now this breathing of fresh air is physical as well as mental. Of all people that ever lived, the Greeks knew best what pure air meant; thus the Queen of the Air became to them the real strength of battle in war.

'Then when Achilles, faint with grief, was mourning the loss of Patroclus, Jupiter pities him and sends Minerva, who restores him and pours divine ambrosia and nectar upon him, and then comes the great passage about Athena arming; and her descent is likened to the storm when Jupiter spreads the purple rainbow over heaven; but the most curious instance of the physical power of Athena is where she gives strength to Menelaus; faint with fatigue he prays to her, and she was glad he addressed himself to her, and gave him, not the strength of a lion or of an ox, but of the indefatigable fly, the creature that lives in the air. When she comes down to help Diomed against Mars, she takes his charioteer's place. Mars first casts her spear, and in Pope it is said that the goddess opposed her hand and caused it to glance aside, but the Greek expression is, caught it and threw it aside as the wind would.

'You might think it out of harmony were I to trace the way in which Minerva's power over the olive was connected with the anointing oil, still more if I endeavoured to show the analogy between the spiritual power of Athena and another Spirit, which we are forbidden at our worst peril to quench or to grieve; but I should not close without enquiring how far these legends—vain to us—were vain to those who had no better trust. There might be much in what I have been bringing before you doubtful, or even wrong; but of this fact we can all speak positively who watch the tone of the Greek thoughts, that the effect of these legends on the life of the Greek was not vain at all. The creed was different of course in different people. The peasant's was simple. Pisistratus attained the throne by appearing with a beautiful woman, whom he gave out to be Athena; and only in the last century a beautiful English lady was surrounded by poor people in one of the Grecian isles, who thought she was Athena.

'The creed of the upper classes was a little more refined and spiritual, but quite as honest. The more worldly would pray with the public faith for their own purposes, but the good and unworldly lived by their faith as sincerely as St. Louis or the Cid.

'The faith of the poets and artists was necessarily more varied, tinged with their own thoughts, like Dante's faith, or Milton's; and they strove with all their might to be as near the truth as they could.

'The creed of the philosophers varied according to the knowledge of each, and their mystic tendencies; but with all its faults, we nevertheless owe to it some of the soundest ethics and some of the wisest laws. Such was the power of the heathen creed in its strength; and remember, in endeavouring to judge it, that what the heathen did they did from a sense of duty, looking for no reward but death. The present forms of our own religion consist of sacrificing less things for greater—time for eternity, giving up houses and lands that we may receive an hundred-fold; but the poor Greeks expected no reward from heaven but justice, and no reward from earth but rest; though when they fulfilled their duties they had sometimes a prophet to tell even *them* of a land where there is a light by day and a light by night, without sorrow, and where they would need no more to trouble the earth for their daily bread.'

## ACCIDENT, GREAT EASTERN RAILWAY.

THE inquest before Mr. Humphreys on the four men killed at the Coal Dept at Waterloo Town, Bethnal Green, was, after two adjournments, concluded on Friday, March 12.

Mr. James Edmeston of Crown Court, architect, who had been professionally employed to inspect the scene of the accident, stated in his evidence that the construction which fell, consisted of an arrangement of cross girders, 5 feet apart, and 30 feet 6 inches long, carrying arches of brick in two half-brick rims, most of which girders were carried by three longitudinal girders,

one at each side, and one in the centre, the length of two of them being 55 feet, the other about 36 feet.

The platform thus formed measured 61 feet transversely, by 55 feet longitudinally.

The centre girder had twice as much work to do as either of the other two longitudinal girders, and it was evident, from the way in which the structure had fallen, that the failure had occurred in connection with the centre girder.

This girder had been supported in the middle of its length by a hollow cast-iron column, 14 feet high, 1 foot 4½ inches diameter above the base, and with a base of 1 foot 8 inches diameter. This column was set upon a Bramley Hall block of stone, 4 feet x 4 feet x 1 foot 8 inches thick, which stone was again bedded on a pier of solid brickwork, standing on a bed of concrete.

The dead weight thrown upon the centre girder and its supporting column was estimated by Mr. Edmeston at 2½ cwt. per superficial foot; in all 200 tons, equally distributed, or considerably more than the girder would bear without the support of the column. But as the column divided the space spanned by the girder into two parts, each 27 feet 6 inches long, the weight distributed upon each half of the girder thus divided would be 100 tons, a load which it would be able to carry.

The column was of metal, 1¼ inch thick; and was equal to the work it had to do. Although displaced and forced through the stone base, some portion of which was found wedged up the centre of the column, and through one side of pier of brickwork, and embedded at least seven feet in the ground, it was found nearly uninjured when dug out.

The pier, of brickwork, was built in mortar, and was wholly below the level of the ground; and although the mortar had not set, Mr. Edmeston did not see reason to think that any defect in the pier occasioned the disaster; and therefore, as neither the column nor the girder was in fault, the investigation narrowed itself to the state of the stone base upon which the column was placed, and there is ample proof that this stone was in a very defective state. It was found to be broken and split into a number of pieces. Some of these injuries occurred, no doubt, at the time of the accident, but it is certain there were two rents in the stone, crossing each other, and dividing it into four unequal parts, which had occurred before the fall; for they had been grouted up with Portland cement, and a portion of the underpart, or bed of the stone, was found to be hollow, and had been filled with Portland cement to a thickness varying from ½ in. to 1¼ in.

The stone itself had been set in mortar, which still adhered to it all round the sides of the bed, and in these places there was mortar only on the stone, and no cement.

It appeared, from these premises, clear that the stone, instead of being in one solid piece, spreading the weight over the brick pier beneath it, had become split into four unequal pieces, the fractions of which were not even or perpendicular. The utmost width of the base of the column was 1 ft. 8 in. by 1 ft. 8 in., and it is very probable that the separate pieces into which the base stone was divided were pressed upon unequally, until at last, by the accumulation of the pressure, by vibration, or in some other way, they no longer remained tolerably compact beneath the base, held together by the pressure; but one or more of them was suddenly displaced, and the column, with a weight of 200 tons upon it, in an instant fell to the level of the brick pier, and with great force, was crushed through one side of it into the earth in the manner before mentioned. The long centre girder, having lost the support of the column, was quite unequal to the weight thrown upon it, and simultaneously fell to the ground, letting down all the rest of the structure which depended upon it.

As to quality: the stone was, in its interior, found to be coarse-grained, and with much more than the usual proportion of sandy ferruginous veins. These veins were not all of them parallel with the bed, and it is possible that the stone yielded sooner than it would have done in consequence of these internal defects. Two other blocks of the same stone, split open in the presence of the witness, by his desire, contrasted very favourably with the stone in question, being of much more homogeneous character, and the particles evenly united, and with very few traces indeed of the friable veins above named.

Other evidence, the effect of which was corroborative of the professional opinion we have reported, was given by Thomas Brown, a carpenter's labourer, who said: 'I was at work near the column that fell on Friday, February 26. I was going to shore it up, and just as we got the length of the first prop up, the column came down. We had noticed that the stone upon which the column rested was cracked. About a week before this happened, the stone was cracked down the side.' When witness first saw it there was only one crack, but on Friday morning, the day of the accident, he noticed there were two. They were both down one side, and that was the side nearest to the street. All the unfortunate men were acquainted with the crack. When the second crack was detected on Friday morning, every diligence was used to get the struts up, but before they could be fixed the whole fabric fell.

Thomas Aked, mason, had bedded the stone. It was 4 feet square, 1 foot 9 inches thick, and was Bramley Fall stone, which was considered good stone. The brickwork was flush—even, level. The column was let into the base of the stone. It was usual to run in cement when a stone was bedded, to fill up crevices. On this occasion it was delayed for the convenience of the men fixing the columns. The first cement was not run in because there was any crack; there was no crack then. His attention was afterwards called to the fact that there was a crack in the stone by the inspector of the railway company—Finchman. That was on February 2. Had examined the stone, and that was the first time he knew there was a crack in it. The crack was on the four sides—on each side; it was the widest at the base on each side; the widest part was as much as half an inch. Brickwork was raised up to the top of the stone, and the whole 'grouted' in with cement.

Several other men engaged on the work were examined as witnesses, but failed to add any material fact to the statements already given, and the jury returned a verdict in accordance with the evidence.

## REVIEWS.

THE RAILWAYS OF INDIA. E. & F. Spon, 48 Charing Cross. London: 1868.

Under the above title a work has recently been published by Captain Edward Davidson, R.E., who lately held the office in Calcutta of Deputy Consulting Engineer for Railways to the Government of Bengal.

Before entering into an account of the various lines of railway at present in existence, Captain Davidson hastily reviews the position of the Empire before their introduction into India, and the native characteristics of the people. Amongst the greatest achievements consequent upon an increase in the facilities of intercommunication brought about by the steam engine have been an overturning of prejudices, an uprooting of habits, and a changing of customs previously as tenaciously held and dearly loved almost as life itself; whilst at the same time it has greatly strengthened the hands of Government, brought different races more into communication with each other, and given a wonderful impetus to commerce throughout the whole Empire. We will not follow the author in his account of the physical peculiarities of Hindostan, interesting though they be; after which he enters into an examination of the several lines along which railways should first have been taken, and the reasons which led to the adoption of those already sanctioned or completed.

The idea of constructing railways in India was first discussed about the year 1841-42, but there appears to be some uncertainty as to the projector to whom that country is indebted for the first conception of her railway system. The name of Sir Macdonald Stephenson is generally associated with the earliest history of Indian railways, and he asserted before the Committee of the House of Commons that the project of a railway in India first occurred to him in 1841: in any how it is tolerably certain that the credit of being first concerned in a tangible and practicable line of railway for India belongs to that gentleman.

On account of the many difficulties peculiar to India, it was thought advisable, before commencing upon any particular line, to depute an engineer, acquainted with the working of railroads in England, to examine the subject of the practicability of their construction in India, and of their suitability to an Indian climate and requirements. Mr. Simms, C.E., the engineer selected for this duty, reached India in September 1845, and submitted his report on the subject in February 1846.

There appears to have been but little difference of opinion regarding the agency by which railways in India should be constructed, yet the Board of Control, whilst agreeing with the general principles proposed by the Court of Directors of the East India Company, objected to many of the details of the proposed measure, under which the work was to be entrusted to the agency of a company, and they positively objected to the very idea of a guarantee being given, concurring with the Government of India in thinking that, land being granted, it ought to be unnecessary. This, however, was subsequently overcome, and a 5 per cent. guarantee was sanctioned on the necessary capital for an experimental line in Bengal, on July 15, 1847. In September following the Board of Control agreed to the construction of an experimental line in the Western Presidency, from Bombay to Callian, 35 miles in length. Considerable delays still occurred in the completion of final and detailed arrangements for carrying out these two experimental railways, and it was not until August 17, 1849 that legal agreements were signed by the East India, and Great India Peninsula Railway, Companies.

Although Lord Dalhousie did not take his seat as Governor General until January 12, 1848, he undoubtedly did more for the promotion of railways in India than any other person, and his celebrated Minute of April 20, 1853, is justly considered the foundation of the Indian Railway system.

The contract for the first experimental line, from Calcutta to the coal fields at Raneegunge, a distance of 121 miles, was signed in August, 1849, and the first section of land was made over to the East India Railway Company in January, 1851. The greatest possible error in judgment was however committed at the outset in fixing the terminus at Howrah, instead of taking the line across the river at some convenient spot and bringing it directly into Calcutta. The gauge of railways for India was fixed at 5 feet 6 inches; and with the exception of what are termed light railways, all the arterial lines are made with the same gauge. All lines in India are at first constructed with only a single line of railway, but the earthwork and bridges are made sufficiently wide to admit of a second line being laid down so soon as the exigencies of the service shall demand it.

Space will not admit of our following out the early histories of the several railway companies in India; suffice it here to state that with only two exceptions they have all been started under the same system of guarantee. The Indian Branch Railway Company, better known now as the Oude and Rohilcund Railway Company, and the Indian Tramway Company, whose field of operations lies in the Madras Presidency, were started with the view of carrying out their works without a guarantee; but after constructing their first short lengths of railway they were unable to raise capital for the further prosecution of their undertakings, and they have since been admitted to share the privileges of the other companies. With regard to the financial prospects of the several lines, it appears that the East Indian, the Great India Peninsula, and the Eastern Bengal Railways are by far the most profitable concerns, and all promise to more than repay the five per cent. interest guaranteed upon their capital. Next comes the Eastern Bengal Railway, which, though a diminutive undertaking when compared with its gigantic contemporaries above-named, has from the first proved itself to be a line likely to become highly remunerative. After these, but at a long interval, follow the Madras, the Scinde, Punjab, and the Bombay and Barodah Railways; all of which are distinguished by the promising feature of a continually increasing business, though their earnings have, up to the present, fallen far short of a sum that would yield five per cent. on the capital expended in their construction. The only line which must be pronounced a failure is that called the Calcutta and South-Eastern, running from Calcutta to the river Mutlah, a distance of only 29 miles, which has hitherto been always worked at a heavy loss.

The following table will give some further interesting particulars concerning the different railways which can more easily be put in a tabular form than otherwise. The total length of railways at present sanctioned in India is 5,609 miles:—

Railway.	Total length as at present sanctioned.	Average cost per mile when finished, with a certain extent of double line.	Amount of gross receipts per mile per week required to produce 5 per cent., 50 per cent. being calculated for working and maintenance.	Average weekly receipts during 1865-66.
East Indian:—	Miles.	£	£ s.	£ s.
Main line . . . . .	1,274½	22,000	42 6	39 0
Jubbulpore line . . . . .	225			
Great India Peninsula . . . . .	1,266½	14,510*	27 18	55 5
Madras:—				
South-West line, including Bangalore Branch . . . . .	492	12,000	23 0	14 0
North-West line . . . . .	333			
Bombay, Barodah, and Central India	312½	24,000	46 8	13 8
Scinde . . . . .	109	20,000	38 9	19 8
Punjab . . . . .	246	10,000	19 5	8 6
" Delhi . . . . .	320			
Eastern Bengal . . . . .	159	17,000	32 13	28 7
Great Southern of India . . . . .	168	10,000	19 5	8 10
Calcutta and South-Eastern . . . . .	29	21,000	40 7	9 0
Indian Branch . . . . .	672			

\* It is certain, Captain Davidson states in a foot note, that this rate will be much exceeded, and that a cost of 20,000l. per mile will probably be nearer the truth.

The effects produced upon India by her railways are thus summed up by the author of the work under notice:—'British rule has been strengthened, the members of the vast but rather disjointed fabric have been knit together with a network of iron sinew, and consolidated. The Empire is now in a far better position than it has hitherto ever been to resist invasion from without, or insurrection from within. If war be the fate of British India, she has now a power of concentration, and an unity of vigour and energy, which will give her a force unknown before. If peace be her lot, she bids fair soon to take that place in the commonwealth of nations to which her magnitude and her fertility entitle her.' In the meanwhile, an extension of the present system of railways is under consideration, the Government of India having recently been requested by the Secretary of State for India to advise him on the subject, with a desire that attention may be directed to two classes of railways: first, those required mainly for political or military considerations, the advancement of a backward district, or the welfare of a neglected race, though not ignoring commercial opportunities or requirements; and, second, those principally needed to further the interests of trade.



## THE GREAT PYRAMID.

To the Editor of 'THE ARCHITECT.'

SIR,—In the article on Egyptology in your issue of February 6, your contributor has the following passage:—

'It is a matter of humiliation to those who have some better acquaintance with what is known, and with what has yet to be known, of Egypt, to witness two of the recent English lucubrations on the subject.' In one, 'a man of science, starting with an hypothesis as useless as it is incapable of verification, has come to the conclusion that a rude sarcophagus, the contents of which can only be admeasured approximately, and that by a most complicated process, was a standard measure of capacity. The learned Professor has given us a measure of his judgment in the fact that, while measuring with the utmost accuracy the widths of courses of masonry in which no one but himself takes any great interest, he was content to determine a matter of real geodesic importance, the length of the base of the Great Pyramid, by the reliable aid of—A TAPE.'

Will you permit me, Sir, to express regret that such a sample of the flippant criticism which is the vice of modern journalism should have received your imprimatur? It would be difficult to compress into an equal number of words a wider comprehension of three distinct breaches of critical truthfulness—to wit,

1. A misapprehension of facts which are sufficiently plain.
2. A palpable self-contradiction.
3. A gross libel on the scientific character of a man known to be a patient, accurate, and intelligent investigator.

It is clear that the writer of the article does not comprehend the bearing of the questions at issue with reference to the Great Pyramid; that he is ignorant of the deep interest with which many men devoted to practical science are now studying those questions; and that it is impossible that he can have read Professor Piazzi Smyth's 'Life and Work at the Great Pyramid' with the ordinary attention due to such a work from any intelligent man—how much more from one professing to be an Egyptologist of the first water!

As for the facts which are sufficiently plain,—The theory propounded, so far from being 'useless,' is of supreme value in two directions. Because, if it be established, we have—1st. A perfect check and correction of modern calculations (confessedly only approximative) of the chief elements of Kosmic measures; and, 2nd. A complete demolition, by substantive facts, of the fundamental position of the advanced scepticism of the present day. If the theory of the pyramid be true, the doctrine of 'progressive development' of the human race, as at present defined, must be false.



To assert that the theory is 'incapable of verification' is to beg the whole question, because that is the very issue in contention. All the presumptions, so far, are affirmative of the theory. Only one important link is needed to complete the proof—viz., the true measures of the base of the pyramid.

The application of the phrase 'rude sarcophagus' to the coffer of the King's Chamber indicates complete ignorance of patent facts, and recalls the vagaries on this subject of a certain Northern obstetrician and dabbler in archaeology. The term 'sarcophagus' itself, precedent and authority notwithstanding, is utterly out of place in Egyptology. The expletive 'rude' is equally inapplicable to a coffer which is wrought in the hardest known stone; of whose original surface sufficient remains to show that it was perfectly finished and reduced to exquisite polish, and whose palpable mathematical properties are most remarkable. It is sufficient to indicate two of these—the most salient. 1st. The cube content of the mass composing the coffer is exactly equal to the cube hollow space it contains. 2nd. It is proven by the investigations of St. John V. Day that, referring to the well-ascertained dimensions of the coffer—

$$\frac{\text{max. length} + \text{max. breadth}}{\text{max. height}} = \pi \text{ (within 0.0011)}$$

and that only by the (presumed) irregularity in the dimensions of the coffer was it possible to fulfil two diverse conditions—viz., 1st. That the coffer should give  $\pi$  (which is indisputably the basic element of the pyramid) by correlation of the dimensions corresponding to those which contain it in the pyramid; and, 2nd. That, coincident with this, it should contain that precise standard of capacity which is indicated by the theory of the pyramid. This of course means, to those who have had patience and honesty to study the whole matter, that the more closely the coffer is examined, the more thoroughly does the coincidence of its elements with the fundamental elements of the Great Pyramid itself (and that pyramid only) become established.

It is not true to affirm that the contents of the coffer 'can only be admeasured approximately.' A reference to the details of admeasurement given in 'Life and Work' distinctly shows that the limits of error are practically nil.

It is not true to affirm that the admeasurement can only be made 'by a most complicated process.' A reference to the same invaluable book distinctly shows that sufficient of the original surface remains to permit of measurement by the ordinary means that any practical man would adopt to determine the size of any object infinitely more complicated. Has your contributor ever perchance 'taken out quantities' of irregular castings?

Next, as to the self-contradiction. After accusing the Astronomer Royal in Scotland of 'starting with an hypothesis as useless as it is incapable of verification,' your contributor affirms that 'the length of the base of the Great Pyramid is a matter of real geodesic importance.' Has this gentleman, who is so much 'better acquainted' (than whom?) 'with what is known, and with what has yet to be known, of Egypt,' yet to learn that the main purpose of all that Piazzi Smyth has written (volume after volume), of all the thorough, patient work through which he has waded, of the months of difficulty and hardship he endured in the tombs at Gizeh (which would doubtless have knocked up a carpet-knight in a week), was precisely to wake the scientific world to the fact that the 'length of base of the pyramid is a matter of real geodesic importance'?

And yet Piazzi Smyth was content!—to determine this supreme matter by the aid of—A TAPE! This is so cruelly, so unpardonably untrue, in the face of paragraph on paragraph, chapter on chapter, of the 1st vol. of 'Life and Work,' that it is amazing how a sincere Egyptologist could be guilty of so unjust an accusation. The only apology which is tolerable is that for which I have given your contributor credit, viz., that he has not read the book referred to, except as people pretend to read books now-a-days. It is the fact that Professor Smyth never attempted to determine the pyramid-base at all, either by a tape or any other absurd method. It is the fact that page after page of his book is filled with lamentations that any such attempt, in view of the enormous mass of rubbish to be removed from the base, was physically and financially impossible for him! But it did so happen that on the eve of his departure from the pyramid, when his 'traps were packed,' that he was present at some such attempt by a person in no way connected with him.

These simple facts I knew from 'Life and Work'; but to make assurance doubly sure, I wrote to the worthy Professor (after reading the article referred to), and put him to question categorically. He replies, 'Modifying your first question thus—"Did you, yourself (apart from Inglis), attempt a measurement of the length of a side of the pyramid's base, from socket to socket (these being the only recognisable accurate terminations of such a base line)?"—my answer to this is, briefly, No!'

I would fain ask you to give the whole of the Professor's letter, which was written without any knowledge of the article in your Journal, and which shows how wide of the truth the writer of that article was in making an attack so gratuitous; but have already too far trespassed on your space, London, March 9, 1869.  $\pi$ .

NOTE.—The expression 'flippant criticism' is more applicable to the above letter than to the article to which it refers. The writer only confirms the remark that Professor Smyth did spend months on the site of the Great Pyramid making numerous minor measurements, and yet that the measurement of the size of the pyramid to which he gave 'the place of honour' was made by a tape. With the reasons for this we have little concern; the proceeding is an inversion of any true scientific method.

As to 'self-contradiction,' we recommend our correspondent to read Professor Smyth's earlier work, published under the extraordinary title of 'Our Inheritance in the Great Pyramid.' In that book certain statements are made on certain assumptions, which the visit to the spot, detailed in the more bulky volumes, proved to be erroneous. But the hypotheses are adhered to notwithstanding. In the first book a certain archaic sarcophagus was assumed to be something else, because it had no ledge for a lid. The ledge, however, is found to exist, but the 'coffer' is a coffer all the same.

The specific gravity of the earth, which is made to perform a function entirely incredible to any ordinary mind, is differently stated in the two works, the only ascertainable reason being that the estimate given in the first will not work in with the fresh calculations given in the second.

A line or two of quotation is sufficient to explain the merciful silence of the critical press on what Professor Smyth euphuistically calls a theory:—

'If we reduce that cube quantity of 125,000 inches to a sphere of the diameter of 50 inches, we get 5 places of numbers, but they are figures too small to represent the coffer. And if, on the other hand, we multiply 125,000 by 5.672 as the best modern determination of the density of the earth, we get the right sizes of figures, but one place of numbers too much. Take, therefore, the 5 places of numbers as due to the spherical shape of the earth, but put therein the actual figures so far as given by the cube of the linear standard of the pyramid when multiplied by the earth's mean density.' So far 'Our Inheritance'; but 'Life and Work' says:—'A tenth part of such space = 12,500 cubic inches, agreeably with the Coptic interpretation of the term Pyramid—is thus to be filled with matter of the mean density or specific gravity of the earth as a whole,' which is now taken at 5.7 instead of 5.672.

Laughter is not what such lucubrations should excite, but a sense of profound sadness. But to assume the occurrence of a Divine Revelation from the results of vagaries such as these, is a proceeding which the religious man of science, and the intelligent man of piety, will alike and most unhesitatingly condemn.

#### ARCHITECTURAL EDUCATION.

SIR,—I quite agree with your correspondent 'X. Y. Z.' in his belief that the present English system of pupilage is the best means by which the architectural student can obtain a proper knowledge of his profession. But I think, nevertheless, it is very desirable that before a pupil enters the office, he should go through, as has been proposed, a preliminary course (for a year, I suppose, would be sufficient) of freehand drawing, perspective, and the elements of geometrical drawing. By this means he would enter upon his five years' term of articles with his eyes in some degree opened, and would certainly take more interest in, and understand better, his work than if he had commenced without any previous preparation. Your correspondent 'X. Y. Z.' has very aptly touched upon some of the useful and practical information which a pupil can only acquire in his principal's office. I would add that he also may derive advantage from seeing his master's clients when he is absent: the pupil thus has a little responsibility put upon his shoulders in answering questions (that is to say, if he can, by which means he often discovers points in which he is deficient), explaining drawings and observing the various criticisms. There are numerous facilities at the present time for the architectural student to supplement his office-work by attending the various professional lectures, and by joining the educational classes of the Architectural Association.

It appears to me to be a capital plan to take notes while reading architectural works or specifications, and invariably to jot down any technical terms not understood, and then, as soon as possible, to thoroughly find out their meaning. By this course the student is led to read more attentively than he would otherwise do, and moreover is accumulating a useful nucleus for future reference. It is also well to note down day by day any information obtained about materials, construction,\* or any practical points, and afterwards to classify and index them, as memory, especially with regard to figures, often proves treacherous. In conclusion, I would strongly recommend students to read Mr. T. Roger Smith's paper (read some six years or so since, before the Architectural Association) on this subject of education. It was afterwards published, I believe, in the *Builder*.

March 16, 1869.

Your obedient servant,

'A STUDENT.'

#### ST. PAUL'S CATHEDRAL.

Can you, Sir, or any of your correspondents inform me when the new railings are to be put up round St. Paul's, which were promised, I believe, some eighteen months ago?

Lyndale, South Penge Park, S.E.

Yours, &c.,

A. S.

#### NEW BUILDINGS AND RESTORATIONS.

Proposed New Town Hall for Warrington.—We hear that Mr. Walker, who has given a donation of 1,000*l.* to the Corporation to be devoted to any public purpose they may deem expedient, has a strong desire that it should lead to the erection of a Town Hall worthy the position of Warrington as an ancient, loyal, and thriving borough. It has been suggested in several quarters that as Colonel Wilson-Patten is erecting a new mansion at Winmarleigh, and is generally supposed to be thoroughly tired of inhaling Warrington smoke—although as strongly as ever attached to Warrington people—Bank Hall might be purchased upon reasonable terms. In that case it could be readily converted into a Town Hall, and its gardens into a public park. We give publicity to the suggestion at this opportune moment, seeing that it is not too late to stop the contemplated expenditure in connection with the enlargement of the present shabby building which has so long been mis-named a Town Hall. There is probably sufficient room at Bank Hall for all Corporate purposes and for the free museum and library as well, so that the people of Warrington may have grouped together those institutions which are supported by the rates, and in which all are more or less interested. The building has long been regarded as a great public want.—*Warrington Guardian*.

\* In illustration I would mention that it is very common for men who have been years in an office to ask such questions as, 'What should be the angle of inclination of a church seat?' 'What height should a lectern be?' 'What are the proper dimensions of an altar?'

Some time back it was thought that the Prince Consort Memorial in Hyde Park would be finished and solemnly inaugurated by Her Majesty on May 1 next, but this is now found to be impossible. The cost of this great national record has not been restricted to any particular amount; the Government voted a sum of 180,000*l.*, but this is quite inadequate to cover the entire expense, and the deficit, as was the case with the cost of the Mausoleum at Frogmore, will be met from out of the private purse of the Queen.

Arrangements are now in progress for building a south aisle to St. Peter's Church, Monkwearmouth, which will include a further portion of the ground formerly covered by the Benedictine monastery which existed previous to the Reformation.

Mr. William M'Arthur, M.P. for Lambeth, on Friday, March 12, in the presence of a large assemblage of persons, laid the memorial stone of a new and commodious Wesleyan day school, at Tonbridge. The building is to be erected in the Early Gothic style of architecture, from the designs of Mr. Baker, of London, and the contractor is Mr. T. Dove. The cost of the building will exceed 1,000*l.*, which has nearly all been subscribed in the neighbourhood, and it is intended to accommodate between 200 and 300 children. Attached to it are two large class-rooms.

The New Public Hall, Exeter.—Twenty designs were sent in for the erection of the new edifice in Queen Street: the first premium was awarded to that of Mr. C. J. Phipps, F.S.A., and the work has been entrusted to him. The second premium, 15*l.*, was won by Mr. Harbottle, architect, Topsham. The hall will be 69 feet wide by 131 feet long, internally, and will be covered by a large circular roof of one span. At one end there will be a gallery capable of accommodating 300 persons, and at the other an orchestra, with semi-circular back, and retiring rooms at the sides and beneath, rendering it suitable for amateur performances and concerts. The style of the Queen Street front will be Venetian Gothic, and the building will seat altogether about 2,000 persons.

New Schools, East Rainton.—New schools at East Rainton, in the county of Durham, have just been opened. They comprise school and class-room, porches and out-offices. The buildings are of stone, in the style of the thirteenth century. The architect is Mr. C. Hodgson Fowler, of Durham.

Restoration of Barnard Castle Church.—The ancient church of Barnard Castle was, till lately, one of the most dilapidated in the county of Durham, but the work of restoration has just been commenced under the direction of Mr. F. R. N. Haswell, architect, of North Shields. The church is extremely interesting, and much of it is of very early thirteenth century work. We shall recur to the subject when the work is more advanced.

The sums received by the 'Kölner Dom-bau Verein,' or Society for the Completion of the Cathedral at Cologne, amounted during the year 1868 to 186,000 Prussian dollars, or 27,900*l.*

St. Swithin's Church, Cannon Street, was re-opened on Sunday. The church has been entirely re-modelled; seven Gothic windows have been put in, and the inside has undergone an entire restoration, the large pews being removed, and open seats being put in their stead. The large stained glass window on the south side is very fine.

The foundation-stone of a new Wesleyan Chapel has been laid at Yeovil, by Sir Francis Lycett. The style is to be Gothic, and the total cost of the edifice, including site, will be 3,000*l.*

College of St. Stanislaus, Tullabeg, King's County, Ireland.—The church is to be enlarged, and an Italian campanile added at the south-west angle. There are in course of erection a spacious refectory 69 feet 6 inches by 30 feet, with minor offices; students' chapel, 83 feet 6 inches by 31 feet, and 26 feet high; lavatories; and grand stairs uniting the new building to the eastern wing. The building will be constructed of limestone from the quarries on the property, having the quoins and all ornamental features executed in the same materials. When complete the entire block will exhibit a southern façade of 193 feet, and eastern flank of 220 feet, three storeys in height, of simple and effective character. Mr. Charles Geoghegan is the architect.

All Saints Church, Hastings.—The Church of All Saints, Hastings, is to be restored, and a sum of money has been already raised towards meeting the expense. This church, which, from its picturesque outline and position, is well known to all visitors to Hastings, has suffered cruelly from neglect and alterations. The work is entrusted to Mr. Butterfield; and while we congratulate the committee on their choice of so competent an architect, we cannot forbear expressing our earnest hope that coloured decorations, such as destroy the effect of Mr. Butterfield's otherwise excellent restoration of the Church of St. Cross at Winchester, are not to be introduced at Hastings. Let the restoration be thorough, but not more than a restoration.

## THE METROPOLITAN ASYLUMS DISTRICT.

THE Returns asked for by Mr. Torrens, M.P., with respect to the asylums which are to be built, have just been issued, under the authority of the Metropolitan Poor Act, 1867. It will be remembered that the Act named gives great power to the Poor Law Board, and enables the authorities at Gwydir House to compel the action of the guardians of the poor in the Metropolitan district in various ways. The work done hitherto under the Act has been the appointment of a Metropolitan Asylums Board, the preparation of plans and estimates for the building of several asylums, and the formation of unions and parishes into what are called 'asylum districts.' The returns asked for by Mr. Torrens relate to the asylums which are in course of building under the 5th, 6th, and 7th sections of the Metropolitan Poor Act, 1867, and of those which it has been directed should be built, with the estimated cost of site and

structure in each case; of the unions, districts, or parishes having dispensaries, and of those which have complied with the provisions for establishing dispensaries and appointing dispensers for the relief of the outdoor sick poor, and the estimated cost of the same in each case. On May 15, 1867, the Poor Law Board issued an order forming the 'Metropolitan Asylums District,' which was to consist of the several unions and parishes in the metropolis, and within which asylums were to be built for insane paupers, and for paupers suffering from fever and from small-pox. It was arranged that two asylums for insane paupers should be built, one a Leavesden and the other at Caterham, each asylum to be fitted for the reception of 1,500 patients. These two asylums are now being built. The estimated cost of the site of one was 7,600*l.*, and of the other 6,000*l.*; whilst the estimated cost of structure of the two asylums, exclusive of 36,000*l.* for furnishing, bedding, and clothing, was 221,000*l.* For the projected asylums for cases of fever and small-pox sites were obtained at Stockwell, at Homerton, and at Hampstead, at an estimated cost of 44,000*l.* The Stockwell and Homerton Asylums were to be fitted for the reception of 344 fever patients and 204 small-pox patients. The original estimate for the asylum at Stockwell was 56,000*l.*, but material alterations in the plans have since been agreed upon by the Poor Law Board and the managers of the Metropolitan Asylums District, and the estimate will have to be reduced. It is also under consideration to make important alterations in the plan for the asylum at Homerton; and very probably the cost, the original estimate for which was 44,000*l.*, will be subjected to reduction. The managers of the Metropolitan Asylums District, at the suggestion of the Poor Law Board, have determined to defer the erection of an asylum at Hampstead until it is ascertained how far the accommodation which will be afforded at Stockwell and Homerton will meet the requirements of the district.

Besides the asylums for the whole district, and in which only the insane and fever and small-pox patients will be treated, other asylums have been directed to be built for the reception of the 'acute sick.' The Metropolitan Poor Act of 1867 gave the Poor-Law Board power to join unions and parishes into a district or districts, in order to classify the indoor paupers in the unions and parishes so united. Under the authority so given, six districts have already been formed as follows:—1. Newington district, comprising St. Saviour's, St. Mary, Newington, and St. George the Martyr, Southwark. 2. Kensington district, containing St. Mary Abbott's, Kensington, St. Margaret and St. John, Westminster. 3. Rotherhithe district, comprising St. Olave's, St. Mary, Rotherhithe, and St. Mary Magdalen, Bermondsey. 4. Poplar and Stepney, containing the unions so named. 5. Central Union, comprising the Strand, Westminster, and St. Giles-in-the-Fields and St. George, Bloomsbury; and 6. Finsbury district, in which are comprised Holborn, St. James, Clerkenwell, and St. Luke, Middlesex. So far as the two districts named last are concerned, no asylums have as yet been directed to be built. The managers of the Central London district have submitted to the Poor Law Board a proposal to take the Cleveland Street Workhouse of the Strand Union, and to adapt it as a hospital for chronic sick and bedridden cases. They have not yet obtained a site for an asylum for the acute sick. Asylums have been ordered to be built in the Newington, Kensington, Rotherhithe, and Poplar and Stepney districts, and sites have been obtained at an estimated cost, for the four asylums, of 35,570*l.* No plans have yet been submitted to the Poor Law Board for the Newington asylum; the estimate for the plans sent in for Kensington was 47,800*l.*, but that estimate has not yet been sanctioned by the Poor Law Board. For the Rotherhithe asylum the original estimate was 30,000*l.*, exclusive of fence and engineering works, but material alterations in the plans are under consideration. Material alterations in the plans for the Poplar and Stepney asylum are also under consideration.

The second return asked for by Mr. Torrens shows that the salaries paid to all persons employed under 'The Metropolitan Poor Act, 1867,' amount, so far, to 1,320*l.*, exclusive of 700*l.*, the salary of a Receiver of the Metropolitan Common Poor Fund appointed under the Act. This motion relates only to those officers who have been appointed by managers of districts under Mr. Gathorne Hardy's Act. The third return shows that twelve of the metropolitan unions and parishes have dispensaries, but that the provisions of the Act with regard to dispensaries and dispensary committees have not yet been acted upon in any union or parish. The guardians of St. Margaret and St. John, Westminster, St. Pancras, and Poplar have established dispensaries since the passing of the Metropolitan Poor Act, but have not yet placed them under a dispensary committee.

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

The Opera arrangements for the forthcoming season have been the subject of a good deal of negotiation, but it appears now definitely settled that the troupes of the two rival houses will be combined, and will occupy Covent Garden under the leadership of Signor Arditi, the management being shared, we believe, between Mr. Gye and Mr. Mapleson. The season is announced to commence on Tuesday, March 30, and as the leading stars from both companies are engaged, the programme is one of the most attractive that has been seen for many years. One familiar name we miss. The Italian Opera without M. Costa appears like the play of Hamlet with the part of Hamlet left out: to no one does the London musical public owe such a debt of gratitude as to him, and his retirement will be extensively regretted.

The Designs for the proposed New Schools at Ashford, Middlesex, for the Kensington School district, have been exhibited for some weeks past in the Council Chamber of the Royal Horticultural Society, South Kensington. The designs of Mr. Saxon Snell, the architect of the new buildings now being erected at St. Marylebone Workhouse, have been selected. The estimated cost of the new schools is 27,250*l.*, and accommodation is provided for 850 children.

### The New Opera House of Paris.

Amongst the subjects of debate coming forward in the Corps Legislatif and which are expected to give rise to lively comments, is the cost of the new Opera House, the estimates for which amounted to sixteen millions of francs; the report now current is that nearly twice that sum has already been expended, and that the work cannot be completed under forty or fifty millions, say about two millions sterling! We cannot credit such an astounding report, and wait for the official statements which the debate must bring out.

### Curious Archæological Discovery at Bayeux.

A few days since some fragments of ancient sculpture were dug up close to the Cathedral of Bayeux; and, on inspection, they were supposed to have formed part of a Roman triumphal arch or grand doorway of the third century. Amongst the pieces was the capital of a column, much damaged, on which was a figure which the *savans* took for one of the genii of the Roman Pantheon. Further examination has led to a different and more interesting conclusion—namely, that the little figure represents the god *Mên*, an Asiatic divinity of Phenician origin, adored in very remote times in Phrygia and throughout Asia Minor. The principal evidence in support of this opinion seems to be the presence of a double crescent, which was the attribute of that divinity; but it is not the only one: in the left hand of the god, in the Assyrian fashion, a pine-cone, the symbol of Esculapius, the virtues of which were considered in the East to be infallible against sorcery and disease. If these guesses be true—and they can scarcely be regarded as more than guesses—we have a new proof of the diffusion of Eastern religious ideas in Europe previous to the definite triumph of Christianity. If the figure be that of *Mên*, this is the first evidence that has appeared of his having been worshipped in ancient Gaul, or of his adoption amongst Roman divinities.

### Berlin Cathedral.

The jury appointed to decide as to the various merits of the 52 designs submitted in compliance with the invitation of the Prussian Government began their labours on the 8th instant. The jury was to have been an 'international' one, as also the competition, but only two architects not German were named, of whom one declined to act, and now we hear that the other, M. Duban, has also withdrawn his name, so that the jury is now composed of Germans only. It is a matter of surprise at Berlin that so fine an opportunity to compete for the execution of a building of such importance as a Protestant Metropolitan Cathedral should have been neglected by English architects; and we are reminded of German impartiality in the matter of the Church of St. Nicholas and the Townhall at Hamburg; for both of which Mr. G. G. Scott obtained the first prize, as also the execution of the former. But the cause is to be attributed partly to the fact that the competition was scarcely known in this country, partly also to the vast projects at home which occupied some of the architectural minds of this country at that time, namely, the designs for the Law Courts and the National Gallery.

### Railway Terminus at Berlin.

A new railway terminus is in course of erection at Berlin for the Great Eastern Railway. It has a length of 600 feet by a width of 120 feet, and the walls carrying the roof, which is of iron and glass, are 39 feet high. The upper surface of the arched roof has a pitch of 2½ feet in the centre, so that the total middle height rises to 63½ feet. The construction is the usual one of lattice girders of iron and tension rods, the principals being placed 24 feet apart, but the foot of each principal rests upon a stout wheel which runs upon a piece of metal fixed to a projecting corbel, thus allowing for expansion and contraction—this being, as far as we are aware, a new arrangement. The roof altogether contains about 400 tons of metal, besides 52,000 square feet of glass and 1,200 feet cube of wood, which gives 12·8 lbs. to the foot super of covered area. The iron for the construction of this roof was sent, ready to put up, from Cologne, where it was prepared by the 'Maschinenbau Action Gesellschaft.'

### A New School at Washington.

A brief description of a school recently erected at Washington, by Messrs. Kluss & Kammerhuber, the City architects, may not be uninteresting to our readers, as showing the arrangement peculiar to this class of buildings in the United States. This school is built for the reception of six hundred scholars, boys and girls, divided into ten classes, and its total dimensions are ninety-two feet by seventy-five feet, of two (partly of three) storeys each fifteen feet high in the clear. The basement contains the dwelling of the porter, the heating apparatus, and stowage for fuel, the rest being devoted to a play-hall in wet weather. The ground floor consists of four large school-rooms, each thirty feet by twenty-five feet, and each lighted on one long and one narrow side; between these rooms are the entrance halls and passages, the entrances for boys and girls being distinct, as are also those of the masters. The first floor contains six large rooms, the two central ones, over the entrances, carrying the third storey which consists of one large room only. There is no master's residence. The hat and coat rooms are fitted up with pegs, each peg being numbered. The walls of the schoolrooms are lined with large slabs of slate let into wooden frames, and these slates are used for diagrams, &c. The older classes are provided with desks, for two children, each 3 ft. 10 in. by 2 ft. 9 in.; the younger pupils have separate desks, 2 ft. by 1 ft. 6 in.; the desks and seats, which are of cherry-wood, on cast iron stands, being in each case screwed to the floor. The style of the building is Gothic, with projecting buttresses, and executed in brickwork faced with red pressed bricks, whilst the columns, cills, and caps are of cast iron. The total cost of this school was only 35,400 dollars, including 3,000 dollars for internal fittings.

### South Kensington Museum.

Few of the ancient Greek or Roman busts are better known than the one in the British Museum which has been named Clytie. The delicate features and singularly affectionate expression of the face render it a general favourite, and in the paintings of one artist (now deceased) the influence of

this bust, which always stood near his easel, was as clearly traceable in all his female heads as, according to connoisseurs, is that of the Belvedere torso in the giant nudities of the Sistine 'Last Judgment.' But beyond the sunflower cup in which the bust rests there is no evidence to connect the marble with the legend of the enamoured maiden, who has indeed been supposed to be a portrait of some Roman lady of Imperial times. In this respect a bust by Watts, now to be seen in a corridor of the South Kensington Museum, contrasts singularly with the antique bust. The reverted neck, the upward turn of the head, the half-closed eyes, all express most powerfully the hopeless love of the jealous sister of Leucothœe. The features are worn with disappointment, the fresh outlines of youth have disappeared, and a vivid illustration, as it seems to us, has been given of Ovid's line—

Tabuit ex illo demeter amoribus usa.

Is, then, the bust beautiful? To this question we cannot but give a negative answer. Perhaps beauty is incompatible with a faithful rendering of the subject, and to this we must ascribe the preponderance of thought and power over grace and loveliness.

Curiously opposed in treatment to Mr. Watts's Clytie is a bust in immediate proximity to it. The casual observer may, indeed, be tempted to wonder why a time-stained bust by Mino da Fiesole, or some of his Italian contemporaries, should be located among the productions of the current century. The fact is that the Lucrezia Donati—such is the name inscribed on the bust—is nothing more than an extremely perfect imitation of mediæval sculpture. We abstain from using the word 'forgery,' inasmuch as there is no evidence that Bastianini, the author of this clever *scherzo*, ever used his talent for a dishonourable purpose. That others have made unjust profits out of what he sold at a fairly remunerative price will be clear to those who have gone into the controversy respecting the bust of Girolamo Benivieni, sold at a high figure to the Museum of the Louvre, and figuring there as an unquestionable contemporary portrait of the poet, but which (*pace* Count Nieuwerkerke) seems to us clearly proved to be the work of the lately deceased Florentine. Another of Bastianini's imitations, a terra-cotta coloured bust of Dante, is to be seen in the South Court of the Museum, lent, as the label informs us, by Mr. Gibson Craig.

### Sculpture and Painting in New Churches of Paris.

The new church of *La Trinité*, in the *place* which now terminates with great effect the vista of the *Chaussée d'Antin*, formerly shut in by houses, is one of the most elegant ecclesiastical structures that has been erected of late years in Paris, rather wanting in purity of design, and overloaded with ornament exteriorly, but still an effective building.

The façade is decorated with four groups, subjects—Justice, Power, Prudence, and Temperance—by M.M. Cavelier, of the Institute of France, Maillet, Crauk, and Carpeaux, all sculptors of great merit; there are four figures of saints by M. Guillaume, member of the Institute, two others by M. Maniglier, and six by five other sculptors.

At the base of the clock tower are four other saints by four different artists, and within the church are, a Virgin Mary, in marble, by M. Paul Dubois, two beautiful marble basins for holy water, sculptured by M. Gumery, and twelve figures of saints by as many sculptors.

A daring innovation has been made in connection with this church, namely, its combination with a small public square, or garden; the porch of the church projects over a carriage way to the edge of the garden, and from beneath is a fountain, the waters of which fall into basins below; on the margin of these basins stand marble figures of Faith, Hope, and Charity, admirably executed by the sculptor Duret. Our friends in Paris dared many years since to place the statue of Voltaire over a common street fountain, but this is the first time that a church and a pleasure ground have been connected together.

In addition to this long list of works in marble and stone, there are several other decorations. M. Paul Balze has painted the tympan beneath the porch in enamelled lava. Subjects:—*Accipite spiritum sanctum; Ipsum audite; and Pater judicium dedit Filio.* M. Jobléc Duval has filled the five tympan of the nave with figures of the fathers of the Church, surmounted by symbols. Above the principal entrance are four compositions, by the same artist—the Paschal Lamb, the Annunciation, Saint Michel and the Archangel, and Saint Peter and Saint Paul. The other five tympan are decorated in the same manner as the preceding, by M. Barrias, who has also painted, at the west end of the church, a composition representing Angels laying at the feet of the Holy Trinity the good works of Christians. The Lady Chapel contains an Assumption, with figures of the prophets Isaiah and Ezekiel, painted by M. Delaunay; and a Presentation in the Temple, and figures of Daniel and David, by M. Emile Lévy: the windows are painted by M.M. Oudinot and Nicod. Making in all thirty-seven commissions to artists, some of them of the first rank, and others young rising men. Assuredly no Government could do more for modern native art, or distribute its favours of this class with more judgment. All the productions of art in this church are certainly not of equal merit, but there is no glaring violation of harmony, and some of the works exhibit much talent. No artist visiting Paris should fail to pay a visit to *La Trinité*.

### Destruction of the Durham Theatre by Fire.

Early on the morning of the 11th instant the Durham theatre was entirely destroyed by fire. The building, erected in 1791, was of no architectural interest, but was interesting from its associations, Komble having been one of its earliest managers, and the well-known actors and actresses, Komble, Mrs. Siddons, Edmund Kean, Miss Foote, Miss Buxton, Charles Mathews, and many more, having acted on its boards. Latterly the theatre had become merely a music hall, and smoking being allowed, it is probable that the fire originated by some carelessness with matches in the gallery, and the woodwork being extremely dry and old, the flames soon obtained a complete mastery.

### Architectural Record Missing.

The Fifth Register of the Conferences of the Royal Academy of Architecture, Paris, has been missing for several years from the archives of the Institute of France. The following official description of the volume has just been issued:—It is in folio, and in manuscript, bound in white



parchment, gilt on the edge, and with gold lines; on the side are the royal arms surrounded by the collar of the Order of the *Saint Esprit*, with the following MS. title, '*Académie d'Architecture, registre 1711 à 1723. V.*' A general appeal is made to all librarians for the discovery of the lost volume.

#### Steel Works, Landore, Swansea, S. Wales.

On Thursday last an interesting and important event took place at these works.

A 70 ton cast-iron block being required for a steam hammer, and being undertaken with other works by Mr. Wm. Williams, iron founder, St. Helen's Works, Swansea, was successfully cast by him on that day. Two cupolas were specially erected at a suitable distance, to enable the metal to run directly into the mould.

Operations commenced at an early hour, and by a quarter to ten A.M., the first set of charges were ready and tapped.

Successive charges followed each other at regular intervals of three quarters of an hour up to nine P.M., at which time the block containing the full of 70 tons of solid iron was finished, thus successfully completing the largest casting ever made in Wales. The dimensions are 11 feet 6 inches by 9 feet 6 inches at base, and 7 feet 6 inches high, and it will occupy from two to three weeks to cool sufficiently to allow it to be reversed, it having been cast base uppermost. Trunnions forming part of the casting are so placed that it will simply be turned upon its own axis.

## General.

The altered regulations of the Royal Academy relative to water-colour drawings, which will not now be received with mounts, have caused some uneasiness among architectural exhibitors, who have feared lest the same regulations might extend to their drawings. We are authorised to state that architectural drawings, although tinted in water colours, will still be received as before, i.e. mounts will not cause their exclusion.

The Tower Subway, when completed, will supply the means of rapid communication under the Thames between the Middlesex and Surrey sides of the river. By the purchase of a projecting piece of land on the Surrey bank of the river, the length of the tunnel, as originally proposed, will be shortened by upwards of 200 feet. The works have been commenced, and it appears that, in the operations now in progress for sinking the shaft on Tower Hill, between 200 and 300 coins have been discovered about 14 feet from the surface, dating from the reign of Henry III.

Relics of Ancient London are fast disappearing, through the destruction of property consequent both on the ordinary process of rebuilding, which constantly goes on as decayed tenements fall into disrepair, and upon the remarkable clearances that have been, and still will be, effected for public improvements. It deserves to be generally known that the authorities of the South Kensington Museum are anxious to preserve from destruction where possible, or at any rate from total oblivion, such objects as possess artistic merit, or are associated with remarkable men and historical events. With this view they are desirous to take drawings and photographs of such works, and in cases where objects of real excellence are portable, as wrought-iron screens, balusters, or panels, chimney-pieces, carved brackets, and the like, they are understood to be willing to treat for the purchase of them, or to receive them on loan. Architects, builders, and others may do good service to Art by giving timely notice to the South Kensington authorities of the existence of such buildings, or fragments and accessories of buildings (whether immediately threatened with destruction or not), as deserve to be perpetuated.

The picking out of the foundation for the new lighthouse at Land's End will commence at once, the Trinity Board having resolved to supersede the Longships Lighthouse for a new structure on the adjoining rock. The contract for the granite work has been taken by a French firm, and all the granite will be imported from France.

The High Chimney at the Gas Works, Warrington, which was built about three years ago, having commenced to crack in several places, in consequence of the great heat to which it was exposed, repairs were rendered necessary. As this was a work of some danger and difficulty, John Burns, steeple Jack to Her Majesty's works, of Openshaw, Manchester, was employed, and he has just completed his hazardous task. He has put seven large iron bands on the chimney, in addition to pointing the cracks. The work has been done to the entire satisfaction of Mr. Paterson, the manager for the Gas Company.

A large addition is being made to the Roman Catholic Church, Roscommon, from plans by Messrs. Goldie & Child, London. The cost, including sundry internal improvements, will be about 1,000*l.*

A Monument to Humboldt.—It is contemplated by the friends and admirers of the philosopher, Alexander von Humboldt, to celebrate the centennial anniversary of his birth, September 14 next, by erecting a suitable monument of marble in Central Park. Mr. William Aufermann, of No. 66, Exchange Place, a member of the committee, having the matter in charge, has written to the North German Minister at Washington on the subject, and has received in reply the following letter:—'To your inquiry as to whether you might add my name to those of the committee, I beg to reply that I shall be proud and always willing to sign my name in glorification of the memory of our great countryman, and to contribute my share towards the erection of the monument.—Yours, &c., FR. VON GEROLT.' The Park Commissioners have given their assent to the project, and the work of raising funds, therefore, will be commenced at once.—*New York Times*.

Her Majesty has visited the studios of Messrs. Philip, Bell, and J. Boehm. At Mr. Philip's studio Her Majesty inspected the memorial to be placed in the Cathedral at Calcutta to the memory of the late Lord Elgin; and at Mr. Bell's studio the group of statues representing America, one of the four groups for the base of the Memorial to the Prince Consort.

The corner-stone of the Sheffield Master Cutlers' Almshouses has been recently laid by Lord Shaftesbury. The building will comprise thirty-five houses, designed for the accommodation of twelve married, and thirty-six single persons, all of whom will be provided with comfortable pensions. The cost will be 26,000*l.*, the whole of which has been defrayed by Mr. Mark Firth, the well-known Master Cutler.

Builders' Contracts.—The defendant in the case of the Corporation of the City of London v. Southgate had agreed to pull down a certain house of the plaintiffs and to build a new one to the satisfaction of the plaintiffs' architect, and to accept a lease, which the plaintiffs agreed to grant, of such new house at a certain rent. It was held by Vice-Chancellor Malins that the Court might decree specific performance of part of the agreement and give damages for breach of the remainder.

A warehouse has just been completed in Great Victoria Street, Belfast, nearly opposite the Ulster Railway Station. It is very substantially built, having a piled foundation, faced with white brick; mansard roof, with ornamental cresting; fine entrance door of cut stone, with a quantity of carving. The cost was nearly 3,000*l.* Messrs. Boyd & Batt, of Belfast, architects; Mr. James M'Cracken, builder.

A villa in the Italian style, at a cost of 2,600*l.*, has just been completed in Fortwilliam Park, near Belfast. It is built of brick, having a large quantity of cut stone as dressings, quoins, cornices, string courses, &c.

The Charterhouse Playground, nearly two acres in extent, has been let on a building lease.

Baron Lionel de Rothschild, M.P., laid the foundation stone of a new synagogue in Great Portland Street on Thursday last.

The General Post Office, Bombay, has been totally destroyed by fire.

The Art Society of Nancy has determined to raise a statue in honour of the celebrated Jacques Callot, who was a native of that place.

Busts in marble of Queen Victoria and the late Prince Consort, the Emperor of Russia, the King of Prussia, the King and Queen of the Belgians, the King of Bavaria, and the Sultan, all of whom have visited the fine old building of Henry IV. since 1854, have recently been placed in the galleries of the Hôtel de Ville.

It is intended to build a new school-house at Belton, in Lincolnshire, at an estimated cost of 900*l.*

A New Presbyterian Church is to be erected at Shrewsbury at a cost of 3,000*l.* A site has been secured near the Castle gate, and earnest efforts are being made to raise the necessary funds.

Fifteen estimates of builders for the new Church of St. Philip, Battersea, varied from 14,587*l.* down to 10,910*l.* For erecting a board-room and offices for the Board of Works at Poplar, we have a still more startling difference between twenty-one builders: the highest, 15,997*l.*; the lowest, 7,330*l.*

At St. Servan, in France, a part of the new quay has been carried away by the violence of the waves, and the casino, but recently constructed, has been almost totally destroyed. In the Bay of Cancale, the neighbourhood of Le Vivier was inundated by the sea, and the dykes carried away.

The gas chandelier, which has for very many years lighted the chancel of St. Lawrence's Church, Southampton, fell about eight o'clock on Sunday morning; it was to have been removed on the next day. It is exceedingly fortunate that it did not fall a few hours later, when the congregation would have been assembled, and that the long iron pipe fell across the pews, for had it gone in another direction it might have gone through one of the fine stained-glass windows or struck the organ, and thus have caused a deal of mischief. It is supposed that the pipe was worn out and broke off. Another old chandelier has been removed, and the church will be lighted at the sides.

Mr. George Cruikshank's great picture of 'The Worship of Bacchus,' which is valued at 3,000*l.*, has been presented to the nation by a number of his temperance friends. It is to be exhibited at the South Kensington Museum.

A parsonage house, with suitable offices, has just been completed at St. Saviour's, near Portadown, Ireland. It is built with black stone, having freestone dressings, projecting roof with ornamental verge boards and hip-knobs. The cost is over 1,000*l.* Messrs. Boyd & Batt, of Belfast, architects; Mr. John Collen, builder, Portadown.

A huge granite rock, extensively known as 'the Tolmen,' in the parish of Constantine, Cornwall, has been destroyed. The famous block was oval in shape, and weighed about 800 tons; it was 33 feet long, 14 feet high, and 19 feet in breadth. It rested on the point of two detached rocks, and underneath it was a free passage. During the past week one of the supporting rocks was blown down, and the Tolmen fell into a quarry, a distance of 40 feet.

A singular discovery of diamonds and jewellery has been made at Newton Abbot, Devonshire. Denbury House, belonging to a gentleman at Torquay, has lately been undergoing repairs. The house is a very ancient one. In one of the rooms a painter discovered a cupboard which apparently had not been opened for centuries. The cupboard was locked, but the painter was curious to see what was inside, and, having obtained permission to open it, was surprised to find a quantity of diamonds, jewellery, &c. No one had the slightest knowledge of the cupboard, and it is the general belief that the articles had been secreted there for generations. The owner of the property, of course, took possession of the find, which is estimated to be worth several hundred pounds.

The 'Italia' of Naples announces that at Pompeii there have just been discovered two marble busts—one of Pompey and the other of Brutus. They are both of fine execution, and have been placed in the National Museum.

# The Architect.

## DOVER CASTLE.

(BY ALBERT HARTSHORNE.)

'Therfor a castel has the king made at his devys,  
That that never drede assaut of any enemys.'  
GROESTIESTE'S *Chastelans d'Amour*.



THE very imposing appearance presented by Dover Castle naturally leads the observer to speculate upon the ages and uses to which its numerous walls and towers are appropriated. All conjecture, however, on the subject will receive but unsatisfactory solution, for the buildings being occupied either by troops, or used as storehouses, converted into magazines or prisons, or else rendered serviceable for modern defensive operations, it will be immediately understood that any detailed account of them in their present condition would be like difficult and impolitic. Indeed, without the assistance of numerous plans and illustrations, it would be impossible to make the various changes that this fortress has undergone, through a long course of centuries, in any way intelligible; and again, it is more than doubtful whether the information afforded would be commensurate with the trouble of its perusal. Under these circumstances it will be our endeavour in reviewing the architecture of Dover Castle to confine our remarks more especially to its early history, and by the help of authentic documents and architectural evidences to throw more light upon those ancient towers and buildings which we observe at the present day. A few general remarks will be sufficient to note the subsequent changes the Castle has undergone, the injuries it has sustained from prisoners, and the havoc and mutilation it has suffered at the hands of the various architects who in their turns have been permitted to disfigure this noble fortress.

### THE PHAROS AND CHURCH.

There can be no doubt that the Romans held a favourable position on the eminence where the present Castle stands. Their camp was oval in form and mainly adapted to the nature of the ground; within the entrenchments were the buildings they usually erected, with the uncommon addition in the present instance of a pharos or beacon. This was, in all probability, the very first building raised in England by the Roman conquerors. In constructing the pharos they followed their usual method of laying a certain number of courses of ashlar alternated with two courses of Roman bonding tiles. Finding the Kentish rag too small and shapeless, and no other materials being within easy distance, they laid their foundations upon blocks of calcareous tufa brought from Normandy, to the depth of 7 feet 4 inches; below this they placed a single course of tile, and a stratum of conglomerate, a foot-and-a-half thick, resting upon yellow clay mixed with flints. The rules laid down by Vitruvius were accurately followed, and an analysis of the mortar proves that his precepts in that respect were as carefully adhered to. This building, in its original condition, is said to have resembled the curious lighthouse at Boulogne, attributed to Caligula, and which was destroyed in 1644. The old facing of the walls is almost entirely gone, but on the south side some of the Roman bricks still remain, with grooves and projections to dovetail into each other. One of the original entrances still exists, with the voussoirs of the arch formed alternately with pieces of travertine and double tiles: it bears a strong resemblance to arches of an aqueduct near Luynes, at Lillebonne, Pompeii, and other places. The Pharos is octagonal without and square within, and the walls are 10 feet thick; in its present state it is 40 feet high, but has had a much later portion imposed upon it, though at the present day this addition may be considered ancient. This was probably the work of Richard de Grey, Constable of the Castle in the beginning of the fourteenth century, whose arms appear upon a small square stone; but it was again altered at a later time by William de Clinton, Earl of Huntingdon, and constable. The Pharos is called the tower of Julius Cæsar in documents of 15 Edward I. (1287), and appears at that time to have been used as a bell-tower; and in the following reign repairs of the great bell 'in turri Cæsar' are mentioned. In the beginning of the last century 'a pleasing peal of bells' was removed from hence to Portsmouth, since which time it has been suffered to go to ruins.

Whatever other buildings there were of the Roman age exist no longer, but in their stead we find a church of the late Saxon period, cruciform in plan, with a central tower, and built irregularly, like Brixworth, in great part of Roman brick, or as Leland calls them, 'great Briton brykes,' and in imitation of Roman architecture. The brickwork is mixed with flints and Kentish rag, and this gives the building an air of antiquity that is very likely to mislead superficial inquirers, who generally suppose the Pharos and church to be of the same age; the fact is, that at Dover as well as at Brixworth, in the

absence of better materials, the builders availed themselves of those they found on the spot. St. Mary's Church has the distinctive Saxon features of doorways with straight jambs, windows played equally inside and out, and arches with the narrow brick pilasters carried round them. It may, however, be questioned whether the transepts are not of considerably later date than the body of the church; the Pharos is united to the nave at the west end.

The church was much altered towards the end of the twelfth century, and the character of the Early English work then introduced is extremely good; it bears so marked a resemblance in its details to the work in the chapel of the keep, that they are doubtless both from the same hand, and it is the opinion of a high authority that both are the work of William the Englishman, the second architect of the choir of Canterbury Cathedral. There are also Early English remains of about thirty years later in date, consisting chiefly of a sedilia and piscina in the south-east angle of the nave; and there is an entry on the Clause Rolls in 1223, in which Henry III. orders the church to be repaired at the same time as the castle. These repairs may be distinguished from the Early English of the first period by being worked with the claw-tool instead of the plain chisel. The same difference of tooling may be observed, though in a stronger degree and of an earlier time, at the junction of the old and new work of the choir of Canterbury.

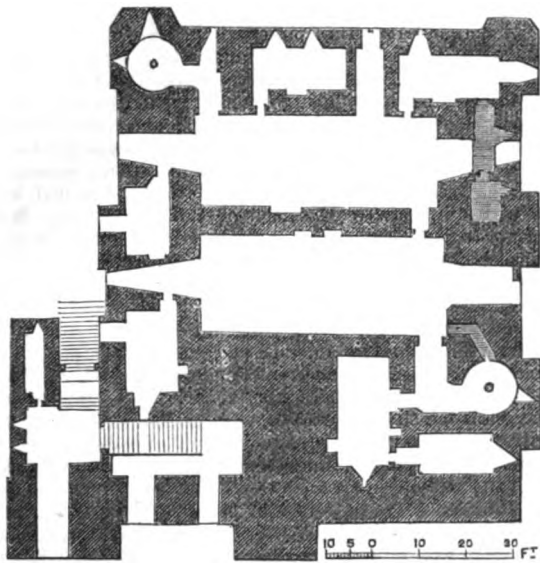
An inventory of the contents of the church was taken in 1343, when it contained the following effects:—A silver cup, a thurible, and divers vestments, two missals, one pontiforium, one antiphonal, one book of the legends of the saints, one gradual with a troper, two psalters, two tropers (or collections of versicles to be sung at festivals), one processional, a silver feretory covered with relics, a copper candlestick, gilt, three iron candelabra, an iron pole for supporting the wax lights, one copper crucifix on a staff, silver spoons and fiols, and a picture of the Holy Trinity. To these may be added, from an inventory of 1361, an ivory bust of our Saviour, and a large quantity of costly vestments of all kinds. St. Mary's church appears to have been dismantled early in the last century, and has since been turned into a coal dépôt for the use of the castle. In 1860 it was entrusted by the Government to Mr. Scott for restoration, and the difficult task of restoring a church reduced almost to ruin has been well performed. The excavations inside revealed two ancient floor levels, the Early English, and below it the original Saxon. This latter, under the central tower, consisted of blocks of chalk of about six inches thick, laid upon concrete. Among the many architectural fragments discovered during the repairs were several of the Early English vaulting ribs, which were found to be portions of Saxon balusters, one side of which retained their original form at the back of the Early English mouldings.

### THE CASTLE.

In considering the protection of Dover Castle at the Saxon period, we have now nothing definite left to guide us beyond the earthworks which marked the defence of the fortress at that time. The Castle appears to have been comprised within the oval of the Roman earthworks in the vicinity of the Pharos and church, and the buildings probably extended towards the west. At the present day, however, there exist no traces of any Roman or Saxon architecture in connection with those earthworks, and it will therefore be irrelevant to speculate much upon them; in all probability they were not very extensive architecturally, or some fragments at least would have remained to the present day incorporated into later work. But it is evident that there was a stronghold of some kind here when the Conqueror marched against the place immediately after his first battle, for it is recorded that it was burnt by his followers. It may fairly be assumed that William availed himself of this important position, and that either he or his immediate successors re-erected some sort of fortress, for we have mention, on the Great Roll of the Pipe in 1160, of the Castle being victualled with corn, salt, bacon, and cheese, besides notices of repairs and additions to other buildings then in existence.

A great architectural movement took place throughout the whole of England during the reigns of Stephen and Henry II. The number of castles erected from the time of the Conqueror to before the death of Stephen is said to have amounted to eleven hundred and fifteen; but their increasing power gradually made them distasteful to the sovereign, many of the later erections were razed before Stephen's death, and on the accession of Henry II. in 1154 many more were destroyed. It was during this period that all the most important Norman keeps were erected. Their type was first introduced by the building of the White Tower by the Conqueror, and this appears, naturally enough, to have been derived in its turn from buildings of a similar kind in Normandy. The castles of Falaise, Chauvigny, Loches, Domfront, and many others not only preceded the construction of our principal English fortresses, but are all built after the same model. The keep at Dover, both from its size (which is 123 feet x 108 feet square), as well as from its imposing situation, may be compared with that at Bamborough, which is the largest in England. Dover keep differs but slightly from the usual plan. It will be seen from the woodcut that, like nearly all Norman keeps, it is quadrangular. It is divided by a wall, and has a staircase entered from a separate tower which reaches to the second storey. The walls are of great thickness, and are pierced with passages, galleries, and chambers on every floor. There is a well, built in the thickness of the

wall, and said to have been 400 feet deep; it terminates in a small chamber on the second floor. There are no architectural decorations in the loops on the two lowest floors, and only just enough in the upper ones to show that they were lighter chambers appropriated to the possessors of the castle. The point in which Dover more particularly differs from other early keeps is in having a highly decorated chapel in the entrance tower. This is a peculiarly valuable example of florid Norman, and we are enabled from it to date, within a year or two, the various ornaments and mouldings peculiar to the style.



The Castle may be generally described as consisting of a central keep within an inner ward or bailey, in which were erected the buildings commonly met with in a large Norman fortress, such as the hall, kitchen, brewhouse, and various offices. These are encircled by a *cingulum*, or wall of enceinte, strengthened by 'mural towers' projecting inwards, and 'buttress towers' projecting outwards, and gateways; these are further defended by a broad and deep ditch; beyond this is the outer bailey, or base court, of great extent, and comprising the church within its walls; these are again protected by an imposing array of rectangular and circular towers, and by a broad ditch going entirely round them.

We have already shown, from the 'Great Roll of the Pipe,' that the Castle was provisioned and repaired in 1160; payments were subsequently made to a large number of soldiers in the garrison, and minor repairs carried on until 1180, when such extensive works were commenced and continued for seven years that it is evident that nearly the whole of the castle was within this precise period rebuilt. Referring to that venerable series of records which were annually delivered into the Exchequer, we find that in the year 1180 a charge of 165*l.* 13*s.* 4*d.* was allowed for works upon the walls. In 1183, upon various works, 129*l.* 16*s.* 11*d.* In the following year the expenses for the keep amounted to 131*l.* 8*s.* 10*d.*; in 1185 the continued expenses upon the 'turris' alone were 290*l.* 2*s.* 1*d.*; and in the same year Mauricius the engineer (engeniator), who had probably studied at the works at Canterbury Cathedral, received 7*l.* 19*s.* In 1186 207*l.* 9*s.* were expended upon the keep and *cingulum* under Mauricius; in 1187, 151*l.* 15*s.* 4*d.* was paid for work on the keep and Castle, at which time it must have been very nearly completed, the building of the keep and walls of enceinte having cost 1,085*l.* 5*s.* 6*d.*, exclusive of the payment made to Mauricius for his plans and supervision. These expenses may be compared with those of the Castle of Orford, built in 1163 at an outlay of 323*l.*, and that of Bogis, 1172-1183, at a cost of 397*l.* 15*s.* 6*d.*, and some idea may thus be formed of the magnitude of the works carried out at Dover in the short space of seven years.

In the first year of Richard an additional outlay of 50*l.* was made upon the works; certain flooring was done in 1190, and in 1198 the walls were further strengthened at a cost of 76*l.* 3*s.*

The Clause Rolls give a few particulars of the works carried on during the reign of John and the provisioning of the castle in 1213 and 1214. These preparations are important, as Philip II. of France was then menacing England with an invasion. It is true that nothing was effected by him at that time, but at the close of the reign the 'Dauphin' captured a great many places in England, and even besieged the castle of Dover. He fruitlessly assaulted it for fifteen weeks, when, owing to the vigorous resistance of Hubert de Burgh, he was forced to raise the siege and leave the kingdom. This will explain why so much was done to further protect this extreme fortress of the English coast during the long reign of Henry III.

On the accession of this monarch in 1216, Hubert de Burgh was ordered to provision the castle; in 1218 he was allowed all the proceeds arising from farms, tallages, scutages, and pleas in the counties of Kent, Norfolk, and Suffolk; these amounted in 1221 to 1,056*l.* 10*s.* 10*d.* and were employed in strengthening and fortifying the castle, Hubert receiving 1,000*l.* a year as constable. From 1223 to 1230 we learn

from the Clause and Liberate Rolls that no less than 2,922*l.* 13*s.* 10*d.* were spent upon works. From the same authentic sources we find that during the reign of Henry III. 750 oaks were brought to the castle chiefly from the forest of Kingswood in Essex, besides joists and rafters and a large quantity of oak trees not enumerated. The names of Hugh de Alberinorte and Nicholas de Andely occur as carpenters; there are also considerable entries for lead and casks of Bordeaux.

Briefly reviewing the architecture of the Castle at this time, it may be said that the keep, with its wall of enceinte, was the work of Henry II. between 1180 and 1187, and that the towers and boundary wall of the outer bailey were erected in the time of Henry III., between 1216 and 1230. Very little was done during the reign of Edward I.: a windmill was built within the precincts in 1295, at a cost of 39*l.* 6*s.* 11*d.*, but no vestige of it now remains, though the full accounts of its weekly cost are still preserved. In the time of Edward III. much was done in the way of repairs, but no special buildings were erected. Among the miscellaneous entries on the Records during the reign of Henry III. the following may be mentioned:—Making the great gate at the going out of the great barbican in 1232; sending 40,000 quarrels and thirty-five balistars to the Castle in 1236; repairing the King's apartments and chapel, damaged by tempests, and putting in new glass windows in 1239; building a new kitchen in 1242; building a house in which the King's engines may be kept; providing pipes for the bellows in the forge, and a cow-hide to mend them; wages of a coppersmith mending the honey casks, and bran for cleaning the King's arms.

The Castle possessed one large engine, which lay, in the time of Edward I., under the wall of the washer-woman's house. It took six men a whole day to remove it from this place into the grange; at the same time another engine was placed there that used to be kept in the church. A new springald (for projecting garroks) was constructed in 1297, and two more engines brought from London. There are charges for masons working eighty round stones for the use of these machines, and for a barrel of grease and pitch and tar purchased for the large engine.

In 1342 there were 900 calketraps in the Castle, and in 1361 in the armoury twelve helmets, three visored bascinets, twelve light helmets, thirty haketons, nineteen chapelles de fer, thirteen plain bascinets, several boxes and barrels of quarrels, gauntlets, breastplates, &c. The wages of soldiers and archers varied from 1*s.* to 3*d.* a day in the time of Henry III., and Adam le Fevre received 4*d.* a day for making cross-bows. The nails used in the works are variously called 'shingelprig,' 'leadneyl,' 'dorneil,' 'hussem,' and 'prig.'

An account of Dover Castle, by William Darell, chaplain to Queen Elizabeth, was published in 1797. It assigns the erection of various towers to particular knights, and further states that they were obliged to defend and repair them, as they held their lands in Kent by virtue of this service. Compressing these assertions into a brief form, we find that John de Fienes granted certain manors to eight knights who were obliged to provide for the defence of the Castle. There is in this account an entire absence of reference to any kind of document, and these military services produced relating to Dover were unknown at the time of the Conqueror, the period to which they are ascribed. We can therefore scarcely accept them as reliable statements: at the same time there is exhibited in Darell's account and Lyons's History a certain amount of circumstantiality which tends to show that they derived their information from some accredited source; but it must bear the same amount of credit that an unauthenticated statement has with reference to an original document. It is only in the instances of the tower called at different times Avranches and Mansellin's that the names upon the records agree with those given by these writers. However, none of the towers now existing were the work of the period when John de Fienes and his 'confederate knights' are said to have flourished, for like themselves, their buildings have passed away.

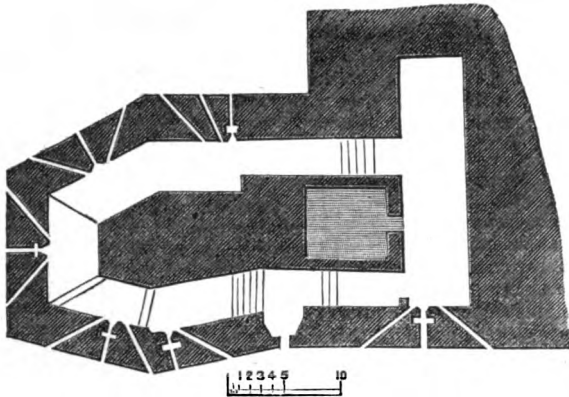
The most valuable part of Darell's account is the description he gives of the towers and the names they bore in his time. Though many of them are now gone, it would not be impossible at the present day to define their respective sites amidst all the changes and destruction that have taken place.

Among the most remarkable features of the Castle is a spacious and lofty vault, entered by a long flight of steps. It appears, from an entry on the Pipe Rolls, that this was built, in 1220, at a cost of 100*l.*, 'in una volta facienda ad exeundum de castro versus campum.' It was probably used as a large store room in case the castle was besieged. This entry enables us to estimate the date of the contiguous buildings on the north side, including the singular Avranches Tower, to the east, and the remarkably placed tower of St. John, in the middle of the ditch, to the west. The series of souterreins connected with the latter tower renders this the most curious and intricate part of the Castle.

The following are the names of the towers at present in existence:—beginning at the southern extremity of the wall of the outer bailey, we find Rokesley's Tower, Fulbert de Dover's Tower (for some time used as a debtors' prison), Hirst's Tower, Arsic's or Saye's Tower, Gatton's Tower, Peverell, Beauchamp, or Marshal's Tower, an extremely picturesque building, having the gateway set between a square and a circular tower. Passing by Post's, Gostlings or Mary's Tower, we next come to the principal entrance to the Castle, Newgate, Constable's, or Fienes' Tower. This is a very fine and impos-



ing structure, consisting of two circular and embattled Norman towers, with a gateway between them. To those succeed Clopton's, Godsfre's, and the round Crevecoeur towers, with St. John's Tower in the ditch in front. On the east side are Magminot's and Fitzwilliam's towers, and two others beyond them bring us to the angle at which occurs the Avranches or Albrincis Tower. It will be seen from the engraving that this is very picturesque in its outline, and the plan of it deserves study from the curious disposition of the loop holes. They are exceedingly well arranged to meet the requirement necessitated



by the exposed situation of the tower. This is flanked on the east by the Pincer or Veville Tower. Colton's, Chilham's, or Chaldercot's Tower, said to have been rebuilt about 1259, stands between the Pharos and the castle. The names on the accompanying plan will indicate the principal and postern entrances, and the names and positions of the buildings within the inner bailey, as far as they can now be ascertained.

From the time of Edward III. little appears to have been done in the way of additions to the previous buildings. Edward IV. laid out 10,000*l.* on the defences; Henry VIII. also expended money upon fortifications, and Elizabeth and Charles I. upon furniture and repairs, rather than on additions to the fortress. At the end of the sixteenth century frequent applications were made to arrest its further decay and place it in a proper state of defence. In 1642 the Parliamentarians seized the castle and successfully resisted the Royalists, and in 1701 Defoe speaks of it as 'neglected and in decay, and its materials at the mercy of those whose appointments gave them power over it.' The present condition of the castle sufficiently indicates the treatment it has undergone from that time to the present day. The annexed general views—the one taken in 1735 and the other a few years ago—show its bold and imposing position, while the drawing of the inner bailey and keep gives an idea of the simple and massive style of the architecture. It will be unnecessary in the present pages to enumerate the frequent visits Dover Castle has received from royalty and the many important events which have been concluded within its walls. It will ever be associated with the most stirring period of English history, and cannot fail to arrest the contemplation as one of the noblest of England's ancient bulwarks.

For the hitherto unpublished extracts from Records, the author is indebted to notes left by the late Reverend C. H. Hartshorne.

### OUR RAMBLER AT THE REVIEW.

OF the many thousand inhabitants of London and the other southern cities and towns whom the shrill notes of the bugle, or the authoritative tap of the drum, will awaken from their morning slumbers on the day of the great Volunteer Review, there are few indeed who will not feel a glow of pride as they recognise the notes of a citizen band. Let any rosy-cheeked maiden or buxom matron, who may give way to a momentary feeling of annoyance at having her morning slumber broken by this unaccustomed *reveil*, take comfort from the reflection that, but for the patriotic movement, which thus gives signs of its vitality, she would ere this have been scared by far rougher accents. The 'Rambler' has sauntered through other Courts and camps besides those of St. James's and of Aldershot. He has listened to far louder thunders of war than those which will this week wake the echoes of Shakespeare's Cliff, for the reports of cannon loaded with that cruel shell have an angry roar, very different from the courteous sound of a salute. And he is as convinced as it is possible for a moderate man to be with reference to any negative proposition, that the volunteer movement alone has saved England from foul insult. He has seen the sardonic grin with which the great establishment of our independent riflemen was greeted by the captains of our Imperial neighbours. He has heard twelve or fourteen years' since, the programme which was sketched for the erection of a second story on the *Arc de Triomphe* of the *Barrière de L'Étoile*. The obliteration of the Waterloo Banquet, and the blowing up of Waterloo Bridge, by the French army of occupation of London, were looked forward to with much confidence by the Croats of the Second Empire. And, what is more, whatever our English pluck might have effected by way of

vengeance or redress, we could not, so far back as 1850, have prevented the French generals from walking into London, if they had chosen to risk their chance of getting out again.

This is no exaggerated statement. It was a man to whom fear, in the pure sense of the word, was a stranger, who first sounded the alarm. It was the first chief and Captain of the country and of the age who told us that we were, in a military sense, entirely undefended. When, some little time previous to the ridiculous collapse of the Brummagem dynasty, which, if we may believe French evidence, carried the art of electoral corruption to its highest pitch, a difficulty arose as to a certain Pritchard, a danger was incurred which was a question of hours. Our neighbours were seriously angry. We were by no means aware of the real state of their feelings towards us. Councils were held at Paris, the upshot of which was, that, according to all military calculation, the French flag might fly from the dome of St. Paul's within a week of the word being given. And other councils were held in England. Of the first the 'Rambler' can speak only on that authority which forms the common material of contemporary history. Of the second we can speak from personal knowledge. The men responsible for the defence of Great Britain found, to their most disagreeable surprise, that defence was for the time impossible, if a real attack were made. Men were wanting, but that was the least formidable deficiency. If our want of guns had been distinctly known at the Tuileries, even an Orleans prince would have plucked up courage to snatch such easy laurels.

At this moment, thanks to God, to the Duke of Wellington, and to the Volunteers, we have a *matériel* for war of which we have no cause to be ashamed, and we have a wholly or partially trained force of at least 300,000 men, ready to employ that *matériel*. Our shores are safe. Therefore, in expressing the gratitude due to those men who form so valuable a portion of our defensive garrison, we wish to say a word as to the service which the civil art of the builder, the mechanist, and the engineer is able to render to those who profess the art of war, and the benefits which that art may in turn hope to receive.

In the fabrication of that defensive armour which the increased power of our modern guns has rendered more appropriate than granite or than brick for the defence of stationary forts, our manufactures hold a foremost place. The competition for extreme cheapness, and the grasping avarice of many commercial men, was rapidly degrading the character of English iron, which, from being the best, was becoming the worst in the world. The terrible blows struck by the bolts of Whitworth, and by the shells of Armstrong, led us to look for some stronger shield than cheap iron, and the solid steel planking which Messrs. Brown and others now produce is a marvel of mechanical skill. But other nations are at least as ready as our economical ministers to avail themselves of English steel. The Russian Government has lately had the wisdom to pay, to an English engineer, the highest fee ever yet offered in the world. It gives twenty thousand guineas a year to secure the counsel of a man who will tell them how to make the best use of their own national resources,—a man so able, that a Russian Grand Duke thus addressed him:—'We spoke of architecture, and you appeared to be an architect. We spoke of metallurgy, and you showed that you were a chemist—may I ask what you are?'

'Please Your Imperial Highness,' replied the sturdy Englishman, 'I am a blacksmith.'

The Architecture of forts, which is, as we write, undergoing an entire revolution, and the metallic defence of land batteries, have less importance, at this moment, in our eyes, from the consideration that the introduction of the Moncrief gun, and of similar methods of utilizing the hitherto wasted power of recoil, will infallibly complete that revolution. For the frowning and impregnable keep of the Middle Ages will be substituted, before the close of the present century, the very opposite mode of defence. We shall lay safe behind our invisible citadels.

But if trenches below the level of the ground or low mounds of earth replace our modern solid and sullen-looking forts of masonry and brickwork just as these have supplanted the lofty keeps and picturesque battlemented tower of which Dover presents such fine specimens, there is in this no loss to the civil architect or engineer. The more solid yet simple our safeguards, the more freely are civil buildings undertaken—the fewer bricks and stones we mass together in our forts, the more we have remaining to use in our churches and mansions, our viaducts and our stations. The arts of peace flourish best when the fear of war is remote, and on this account, if on no other, we who build owe a deep debt of gratitude to the Volunteer force.

But we wish to look at the subject from another point of view, to which the visit to Dover gives peculiar appropriateness. Here we are in the presence of works venerable for their antiquity, but some of them remarkable also for that peculiar picturesqueness of outline and simple beauty of detail which our modern efforts so seldom approach. If Dover is historic ground it is also artistic, and few can gaze upon its ancient Castle and Church, or visit the fine fragment of extremely early build which now stands as the nave (once the choir) of St. Mary's Church, without feeling that it is not merely the age of these structures to which they owe their charm. It was the hearty, intelligent, earnest feeling with which the work was done which gave it at once the solidity to stand so long and the grace which still clings to it in decay. The early builders wrought more in the spirit of the *Volunteer* than of the *Mercenary*,

and now that the nation has shaken off her inert reliance on the power of gold lavishly squandered to buy sufficient military service for her most pressing needs; now that we are beginning to feel that if we would have our country defended we must arm ourselves, and if we would dwell in safety we must protect our own homes, it is not too much to say that the temper of mind from which this movement has sprung, and by which it is kept up, will ennoble all our work—our buildings among the rest, nay, is in fact doing so. Genuine painstaking work, patient care, skill, art, and taste are no longer absent from our structures, as they were in the days when Napoleon affixed a stigma upon us, merited perhaps in his day, but hardly so now, that we were nothing better than 'a nation of shopkeepers.' The Volunteer force has often been to Brighton, and has beheld in the renowned Pavilion the acme of shopkeeping architecture. It has been once, and is now going again, to Dover, and will see there, in one noble work and many fragments, what the architecture of our forefathers was. There can be no doubt as to which of the two buildings—the Castle or the Pavilion—raises a thrill of honest pride in the beholder, and as to which impresses him with a sense of the dignity, beauty, and power inherent in an architectural work. And we feel some gratification in adding, there can be as little doubt which of the two buildings is most nearly allied to those habits of care and order, that love for genuine construction and solid material, and that desire to clothe our works with the graces of architectural form and treatment, which are yearly gaining ground among us.

We hail, then, with pleasure the opportunity of revisiting Dover, and once more reviving her historical associations and revisiting her monuments of ancient art. These have always rendered the recollection of our first visit to Dover peculiarly vivid and distinct among the crowd of pleasant memories which belong to volunteering. Such memories are indeed many. Who does not, for example, recollect his early days?—the drilling in Westminster Hall, when the picturesque beauty of that busy scene was new and unaccustomed; his first visit to the butts; his first inspection, the first prizes he shot for and won; or who can forget that has attended them the successive meetings at Wimbledon, with the luxurious wildness of camp life, and the keen interest of the rifle competitions? But among all these the series of Great Reviews, each having some peculiar character of its own, seems to stand out conspicuously vivid and real in the memory.

The first Review by the Queen in Hyde Park was a scene which can as little be forgotten as it could be repeated. The wonderful universality of the thing—the long march amidst crowds innumerable of excited spectators—the vast masses of men in the Park—the gallant bearing of the corps that had come from so far to join in the work of the day—the imposing salute—these were all striking. But more than all these the march past dwells in the memory. Endless seemed the lines of people that we passed in our gradual approach to the saluting-point; then as we grew nearer came a perceptible settling down and bracing up of the regiment into an indescribable and anxious kind of tension, then the sudden striking up of our own well-known air, to the beat of which we seem to fall into an easier, truer step—a glimpse felt rather than seen of a glittering staff and the noblest lady of the land, standing in her carriage, her commanding air of queenly bearing caught, one can hardly tell how, so indistinct and rapid was that stolen glance. And then for a moment or two a sensation as if the whole company was one man, a consciousness that we have gone past like a wall; and then at last a waking up to hear the swelling and falling cheers and clapping of the spectators following us along the whole course of our further march. Simple as the movements of that day were, the display of the volunteer force in the face of the Queen and country was, perhaps, the most imposing scene we ever took part in.

Brighton has recollections of a quite different stamp—a bright morning, an early railway trip, an indescribable holiday crowd, all the shops shut, most of the houses decked with flags and many with fair faces. The movements amid the open downs, spacious and bright and breezy with keen sea air. Then a dusty march back, and a rattling sleepy railway journey home, or, perhaps, if we remain behind, a walk in the densest and most motley crowd that can well come together, and a general air of keeping open-house.

Guildford we recall, not without some uneasy memories of delay and discomfort, but with a more vivid impression of wildly beautiful scenery, rustic spectators, and an unusual sense of remoteness and country life.

Portsmouth, on the other hand, was all town and harbour; bright, busy, and military. Long as the day was to those who went and returned with their regiments, it was yet a great success. No sight could be finer than the Portsmouth review as we saw it, when, moved up to the high ground, we were able to glance back over the whole harbour, with its creeks and waterways, glittering in the sun, covered with active gunboats shooting out puffs of white smoke in regular, constant succession, while the shores were lined by masses of troops, some actively engaged, some held in reserve, and vast crowds of eager spectators crowned every spot that commanded a view of the scene.

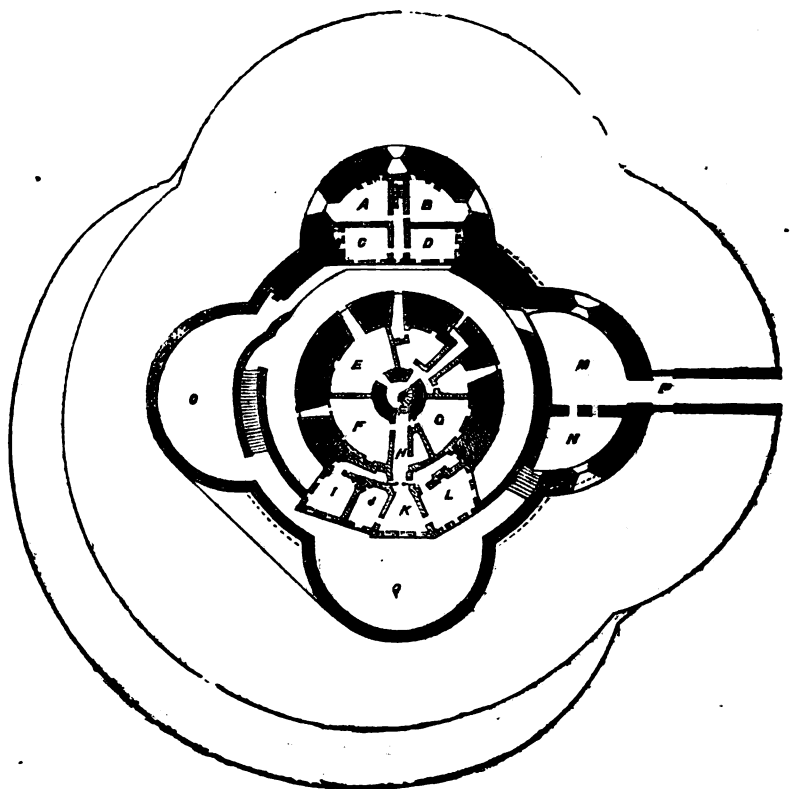
Of Windsor we speak less willingly. It is not the beauty of the fine old park, or the brilliancy of the Royal cortège and staff, or the few and apparently unmeaning movements which followed the march past, that dwell in the memory. It is our long, weary waiting by the side of the dark, silent river, after we had become aware that the railway had hopelessly broken down. There we remained quite through the dewy hours of a summer's night, tedious and all too long, notwithstanding that it was the shortest of the whole year. That time we shall none of us, methinks, forget; nor the solitary house, and its hospitable inmates, heaven reward them! who toiled so willingly and so long in supplying water to slake what appeared the unquenchable thirst of hundreds of weary men. But if there was little to enjoy, there was much to admire, in the unflinching steadiness of the men, and the gallant constancy of our chief, who stuck to us through the whole, and came up to town with us in that tardy train which, starting soon after dawn had begun to break into clear day, landed us at Waterloo in the bright blaze of the early hours of a summer Sunday morning.

A better means of effacing the unpleasant memories which this review must have left in many minds could hardly have been hit upon than taking us again to Dover. There is an interest about Dover that none of the other spots have had. Gay Brighton, wild Guildford, nautical Portsmouth, each in turn has been a pleasant place to visit, a cheerful holiday sojourn for a day or two to those who have had the time; but at Dover there was something besides all that belongs to the review itself, and in addition to the co-operation of the fleet, the volunteer artillery in the Castle, the strong military force, and the noble space on the heights among which the review was held;—something that seemed to make the place more striking to those who simply came and returned, more interesting to those who stayed a day or two than any other locality.

For in truth Dover is a place that brings us face to face with our English history, from the day when Cæsar landed downwards. The ruins of several ancient buildings; the well-preserved or restored walls of others, here appeal to the eye as well as to the imagination; and if the reader feel himself struck by the beauty or stirred by the dignity of aught that he sees there, let the Rambler remind him, as he takes leave of a brother-volunteer, that these works were done at the time when every man was more or less a soldier as well as a citizen, and that it is incumbent on all citizen soldiers of the present day to emulate in the structures they raise now those noble qualities which we cannot fail to admire in the works of the past.

### BLOCK HOUSES.

IN the same manner that the name of 'Pele Towers' has been applied in the north to those towers of defence erected against the sudden incursions of the Scots, so we find the term 'Block House' used in the south of England to describe the small castles or forts built for protection against any surprise in these quarters. But while the Pele Towers in Tynedale belong principally to the Edwardian period, the Block Houses, to which we shall briefly call attention, are exclusively of a much later age; they were in fact for the most part built during the reign of Henry VIII. It appears that they were mainly for the purpose of protecting the Cinque Ports, or



those towns or 'members' attached to them. It is well known that the Cinque Ports originally consisted of Dover, Sandwich, Romney, Hythe, and Hastings; to these Rye and Winchelsea were added by Henry III., and each of these ports had its subordinate towns or 'members.'

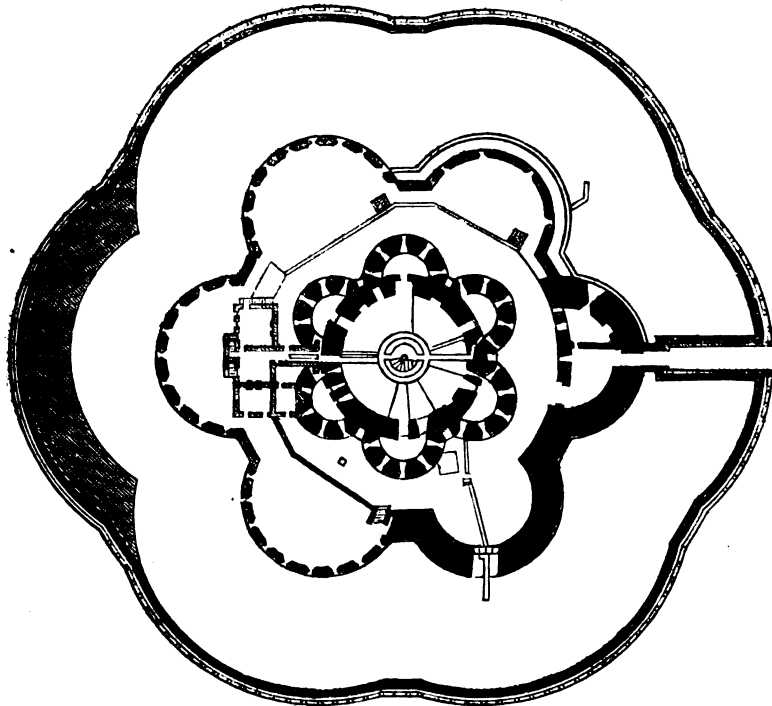
Walmer Castle, a member of Sandwich, was built by Henry VIII. in 1539. The place is rendered interesting by the landing of Julius Cæsar in 55 B.C., and the castle as the scene of the death of the Duke of Wellington in 1852. The fort in its original condition consisted of a central round tower, with walls eighteen feet thick, and flanked with four bastions pierced with loop-holes. It will be seen from the plan that it has been much altered in modern times, the ancient system of defence having also been superseded by guns mounted 'en barbette.'

Deal was also a member of Sandwich. The Block House was built by

close to the sea that the waves almost wash its bases at the spring tides, and its situation opposite the Goodwin Sands is singularly wild and desolate. Colonel Hutchinson died here in 1664.

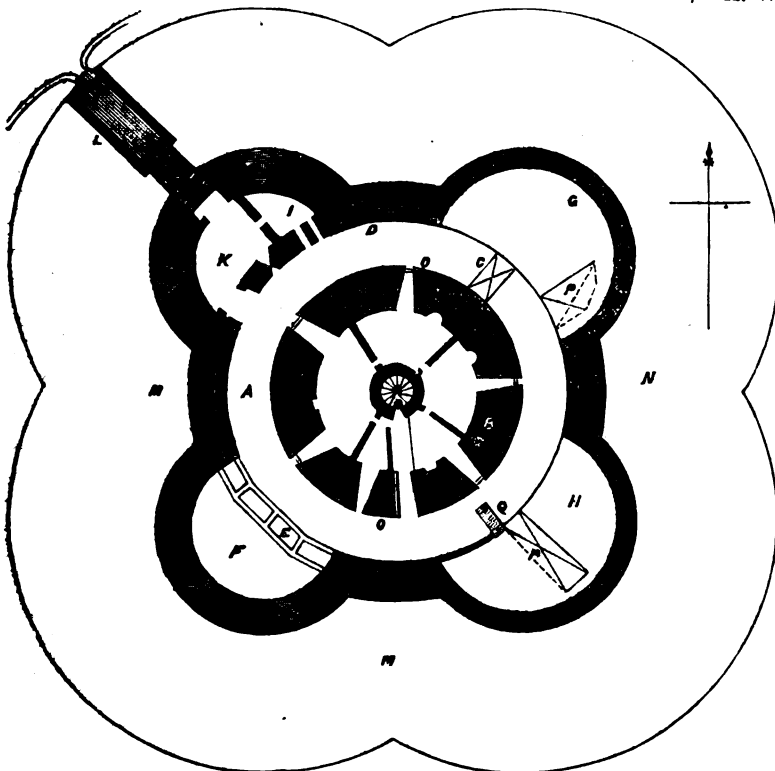
Other Block Houses were built by Henry VIII., at West Cowes, Camber, Fowey Castle, Hurst, Motes-Bulwark, and South Sea, and there are two towers at Hull which partake of precisely the same character as those on the south coast; they are probably of the same period.

The travellers who a few years ago crossed the Channel and visited Havre, cannot fail to have been struck with the remarkable 'Tour de Francois I<sup>er</sup>,' which stood at the entrance of the harbour, and the similarity between this fort and the English Block Houses. The resemblance was probably owing to its having been erected at the same period and applied to like purposes of defence. It was demolished a few years ago.



Henry VIII. It served as a prison for the Roundhead Colonel, Hutchinson, and in 1648 withstood an attack by the Cavaliers. This fort consists of a central round tower, comprised within six semicircular bastions, each pierced with four loop-holes, and beyond these is a wall of enceinte.

Like those of Deal, Walmer, and Sangate, the Block House of Sandown consists of a central tower surrounded by four bastions, but, unlike its prototypes, remains in nearly its original condition. The fort stands so



PICTURES IN PROGRESS FOR THE ROYAL ACADEMY.

THE time is fast approaching when our painters will have to finish the works which they destine for the forthcoming Exhibition; and the public are curious to learn what is likely to be the character of that Exhibition. From all that we have seen, and all that we have heard, we have no hesitation in saying that it is likely to be up to the usual average, although, from a variety of causes, some of our popular favourites may not be as well represented as could be wished; nor will there be any of those large highly-wrought works which usually attract so great an amount of public observation.

Mr. Millais, owing to his recent severe illness, may possibly not be represented at all; he has been engaged on a subject from Romeo and Juliet, and several portrait pictures, and we hope at least to see some of the latter on the walls of the Academy. Mr. Frith, another great favourite, has confined himself this year to pictures of a smaller size than usual. His two principal works are, a subject from Don Quixote, and 'Nell Gwynn selling Oranges in the Theatre.' All who are acquainted with Mr. Frith's powers of expression and technical ability will be curious to see how he has rendered the features of the fair, frail, but good-natured mistress of the second Charles, and of his witty, handsome, unprincipled courtiers.

Mr. Calderon has painted two pictures, the figures in which are of a larger size than is usual with him. One represents two mediæval lovers seated in a boat, which quietly glides by the shady banks of some still river, the lover (some young poet, we should say) 'sighing out his soul into his lady's eyes.' Mr. Calderon's second picture depicts 'The Vengeance of the Guises,' Madame de Montpensier instigating Jacques Clement to the murder of Henri III., and contains some of this artist's best painting. Mr. Leighton will exhibit several works, to our thinking better than anything he has yet done. His subjects, as in previous years, are classical, and taken from the stories of Icarus, Electra, Phœbus, &c. Mr. E. M. Ward has two works, one of which, 'Martin Luther Studying the Bible,' is life-size, whilst Mrs. Ward, faithful to the domain of history, has selected this year an incident in the life of the Pretender. Mr. Yeames has taken for his principal subject, a Jacobite about to conceal himself in one of those curious hiding-places which still exist in the capacious chimneys of some of our old country mansions. The young gentleman is surrounded by his agitated sisters and mother, and the room in which the scene is laid is specially noticeable for its fidelity to the character of our ancient baronial halls. Mr. G. D. Leslie will be represented by two pictures, 'Cupid's Curse,'

'For this is Cupid's curse,  
That they who change old love for new,  
Let's hope they change for worse.'

and 'Cœlia's Arbour;' the latter the most charming work that this very charming artist has yet produced. Mr. Armitage will contribute three works: 'Hero, with her Beacon,' life-size; a small picture of Christ calling the sons of Zebedee; and a study of an Eastern woman holding a chameleon, in a background of oleanders. Mr. Pettie has chosen for his theme 'The Fall of Wolsey,' as described by Shakespeare. This is the most important effort which Mr. Pettie has yet made; indeed, the rendering of surfaces and textures has been carried by him in this work to such an extent as to make the picture a very miracle of finish. Mr. Orchardson (the other Dromio) has chosen for illustration a very good subject—'The King's Antechamber.' Of course the period is supposed to be mediæval, and we have poet and parasite, sculptor and savant, priest and bravo, the worthy and unworthy, waiting for the royal favour to shine upon them. Mr. Wells, in addition to several first-rate portraits, sends a picture representing his own children, and which is likely to fascinate all the fathers and mothers who see it.



The two new Associates, Messrs. Poynter and Mason, will both be represented; the former by a portrait, a small picture of Andromeda, and a larger work, the return of the Prodigal, all characterised by that surprising technical excellence, remarkable in any English artist, and especially in one so young; Mr. Mason by two works, the subjects taken from that quiet rural life which this artist loves so much and paints so well. In this latter class of subjects we hope to see exhibited a picture by Mr. F. Walker, but as there is some doubt about it being finished we shall defer describing it. Another of our popular younger artists, Mr. H. S. Marks, has not this year been able to finish an important work, but makes up for the want of size in the picture which he sends by superior excellence; indeed, so great is the technical advance which he has made, that one can hardly recognise it as Mr. Marks's handiwork at all: this picture, which represents some mediæval musicians being shown into the gallery where they are to perform, is especially characterised by some charming colour and painting. Mr. J. E. Hodgson has lately visited the north of Africa, and his principal picture for the year shows us an Arab storyteller enchanting his Moorish audience with one of those thrilling tales with which the 'Arabian Nights' has made us familiar. Considering the interest which has been lately shown in these countries and their inhabitants, Mr. Hodgson's work is likely to attract the attention of the public. Mr. Storey, whose 'Shy Pupil' was one of the hits of last year, sends a picture in the same vein of genteel comedy. A beggar—an old soldier—is seen wheedling a shilling out of a pretty young lady by some artful but not undeserved compliment, the picture being in that light, pleasant key to which Mr. Storey is addicted. Mr. Wynfield's principal effort is of a semi-historic character—'The Rich Widow,' 'young,' 'beautiful and a great fortune,' one of those prizes so much sought after by the noble but somewhat scantily endowed courtiers of the Stuart kings. Mr. Prinsep will exhibit several works, of which 'Bacchus and Ariadne' is the principal, and Mr. Marcus Stone will have an important picture, 'The Princess Elizabeth forced to attend the Mass by her sister Mary.' Without alluding to the efforts of other artists—and indeed we have not as yet seen the works of those gentlemen who reside in the country—we have said enough to show that the forthcoming Exhibition will not be deficient in the interest which has attached to most of its predecessors.

### MR. SHIELDS' REPORT ON THE NEW LAW COURTS SITE.

THE publication of a 'Report on the New Law Courts and their Approaches, by F. W. Shields, C.E.,' as a parliamentary paper printed by Order of the House of Commons, is in many respects the most startling incident which has yet occurred in the discussion of this question. Mr. Shields is known in Westminster as an engineer whose *specialité* is metal work, and is the author of a small treatise on 'Iron Girders.' With every possible respect for such occupations, we confess it is very hard indeed to discover how they can constitute any qualification for his selection by Government authority to 'report' on a project which is mainly an architectural one. Mr. Shields himself admits it is so, by the very division of his subject. These are the heads of his Report:—1. Architectural effect afforded by the site. 2. Uniformity of level of its surface. 3. Economy of its acquisition. 4. Its accessibility; or, the convenience of its approaches.

It may well be asked whether the whole of these heads do not lie more naturally within the province of the architect than of the engineer, dealing as they all do with the streets and buildings of a city like London. The choice of a civil engineer to report on such a question points to some 'Theory of Selection' which would puzzle Dr. Darwin himself. It is true, however, that the matter is somewhat cleared up by Mr. Shields in the preface to his Report:—'The Chancellor of the Exchequer, understanding that I have given considerable attention to the question of the New Courts of Justice, and their approaches, will feel much obliged if I will favour him,' &c.

The Chancellor of the Exchequer, as everybody knows, is Mr. Lowe, though everybody may not be equally aware of the circumstance that while he was as yet *only* Mr. Lowe, and had not the power of Government patronage in his hands, he bestowed during last session of Parliament the most amiable efforts to procure a Select Committee of the House to decide on the question of amount and compensation due to Mr. Shields as the unrecognised author of the Thames Embankment scheme! There is no reason whatever why Mr. Lowe should not have the most implicit faith in Mr. Shields' capacity for any conceivable work. We should be sorry to cast a doubt as to the propriety of his selection on anything like personal grounds, and, indeed, should not have alluded to the matter at all, if the 'Report' which is now issued to the public with the full prestige of a parliamentary document were really worthy of the notoriety which has been given to it.

Anxious to procure any information or argument on a subject in which we have proved our interest by the space we have given to it lately, we procured Mr. Shields' Report and carefully read it. It is not too much to say that every opinion expressed is, by this time, sufficiently old. Indeed, we need not scruple to observe that the greater part of it which the author devotes to his two first heads—architectural effect and levels—is nothing more than a *réchauffé* of matter which has appeared in these columns during the last month or two. As to 'architectural effect,' it is only natural that an engineer should look outside himself for his opinion; and as to 'levels of sites' there is information of a perfectly reliable kind to be had by anyone who cares to invest a shilling in the Ordnance map.

We must, however, do Mr. Shields justice by noting that his Report *does* contain one original and novel feature which has not yet taken a prominent place in discussions on the subject of the Law Courts' site. The suggestion we refer to is one which might probably be expected in the natural order of

things from one who attaches C.E. to his name. Mr. Shields' 'Report' culminates in a project for a *new railway*; and we are really driven to the conclusion, from a careful study of the document, that there is really nothing besides this which Mr. Shields can safely recommend. Whether the Embankment site is the best on the whole is left for public inference merely: the same may be said of the Carey Street site. Only one thing is certain—a railway from South Kensington to the Mansion House is the kernel of the nut which we call the Law Courts' site. A project for a railway from Hampstead Heath to the Crystal Palace would have been quite as pertinent to the real question at issue, as affecting the site whereon the New Law Courts should be erected. It may, however, be some comfort to those who advocate the selection of the Thames Embankment site to find that the engineer who thus reports his view of the two sites to the Government, considers that the adoption of the Carey Street-site will involve a scheme for a new metropolitan railway which, on the lowest calculation, must require a greater expenditure than the Law Courts themselves. The Embankment site, of course, cannot incur this disadvantage, since it has the Strand thoroughfare on its northern side, and the direct route of the Metropolitan Railway on its southern face, with the superadded conveniences of river and road communication.

We observe that the latest contribution to the question of the two sites is supplied in a statement published by the 'Metropolitan and Provincial Law Association.' This document indulges in an amusing insinuation against the advocates of the Embankment site. The Committee of this Association 'fully believe that there are private and venter influences largely at work in this agitation, and that art has less to do with it than is pretended.' It is due to Mr. Shields to state that he has written his Report without any attempt at such inuendoes. The Society which has resorted to them only proves how poor a case they possess on the merits, while the value of the insinuation will be duly appreciated by the public who know thoroughly well by whom and in what quarter the Embankment site was first suggested.

So far the question between the Carey Street and Embankment sites remains exactly where it was before the Report of Mr. Shields or the statement of the Law Association appeared. We shall be glad to note the opinions and arguments of others—and there are many—who have also 'given considerable attention' to the subject, even though their views may not be printed 'by order of the House of Commons.'

### ILLUSTRATIONS.

#### DOVER CASTLE.

THE illustrations which we give this week all refer to Dover and its Castle, and are alluded to in our first article. The illustrations giving the present aspect of THE CONSTABLE'S GATE and THE GENERAL VIEW OF THE CASTLE are from recent photographs. THE VIEW OF THE CASTLE AS IT APPEARED A CENTURY AGO is from an old print. THE INNER BAILEY AND KEEP and THE AVRANCHES TOWER are given from drawings by the late Rev. T. C. Hartshorne. We also give a careful PLAN OF THE CASTLE AND ITS SURROUNDINGS, upon which the different works can be very readily identified.

#### MR. RUSKIN.

THE limpid and sparkling play of Mr. Ruskin's eloquence never charmed a crowded audience more completely than in his lecture at University College.\* The large theatre was full to the very doors, and, although the student element was perceptibly prevalent on the benches, a pin might have been heard to drop, by any one who was thinking of pins, during almost the whole course of the lecture. The speech of our great non-rythmal poet glowed with the many coloured hues of his ever-changing fancy, like the pillared spray of some mountain cataract, overarched by a dancing rainbow; as fresh, as graceful, and as unsubstantial. As a glorious instance of word-painting, it would have been impossible to have a richer intellectual treat.

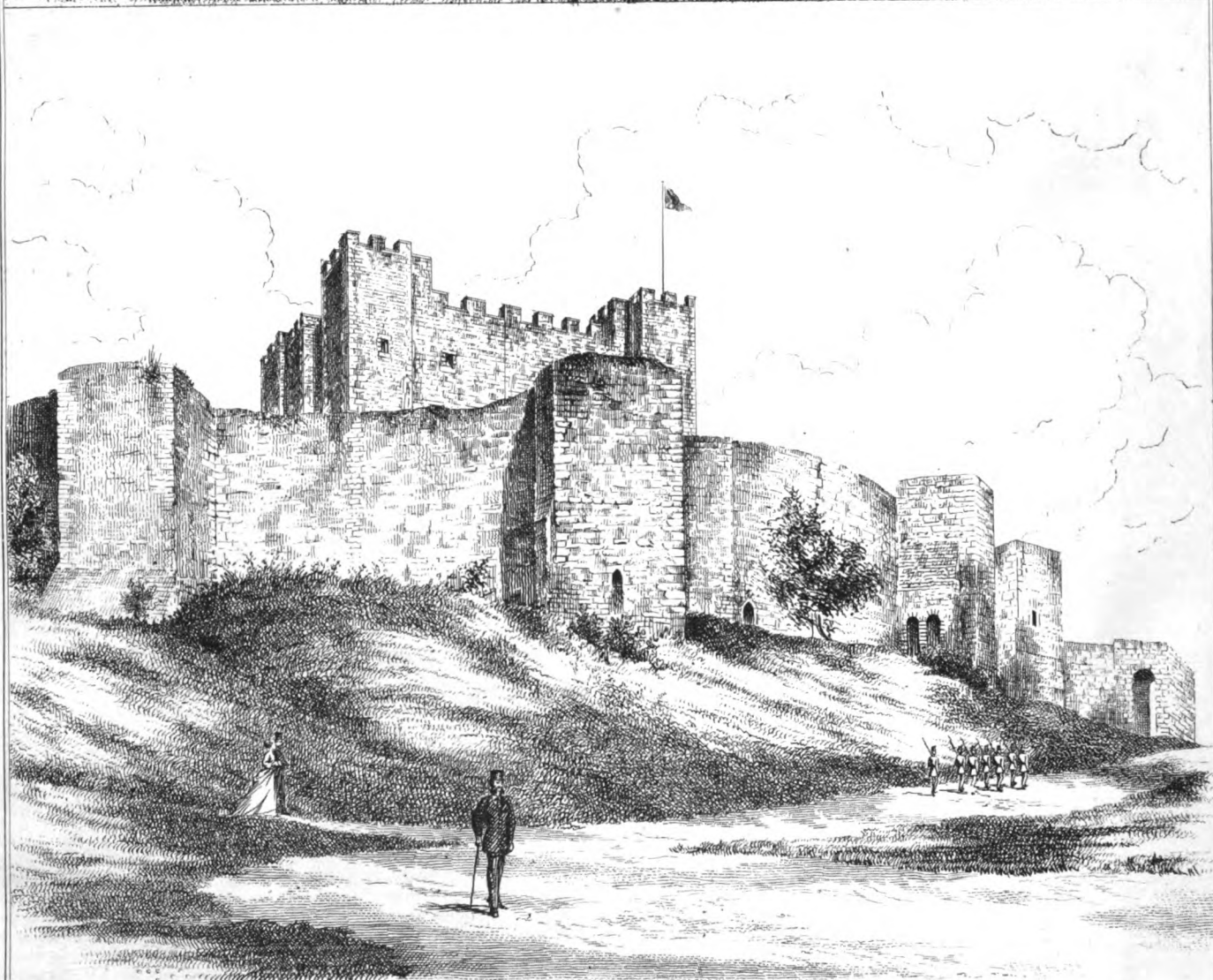
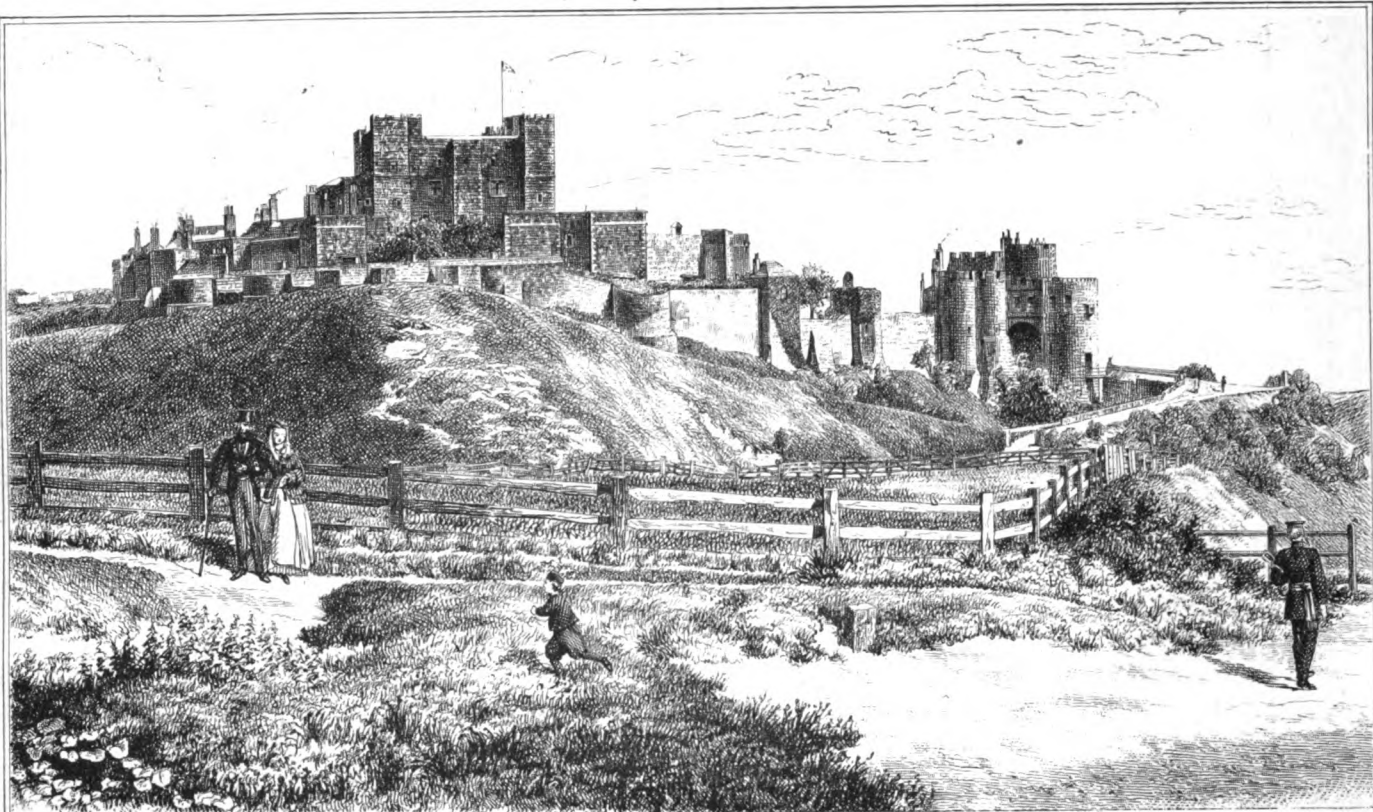
We may pay this tribute to the power of the orator, without forgetting the disappointment which he expressed, and in which many of his audience must have sympathized, that the illustrations with which he had proposed to elucidate his lecture on Greek Legend were absent. None but the most perfect illustrations, as Mr. Ruskin justly felt, would have been worthy of the occasion, and such effects of art he had not had time to procure, nor would he, in the eighty minutes during which his lecture lasted, have had time to display.

Indeed, in the unnecessary apology with which Mr. Ruskin so habitually commences his addresses, is to be noted one of his few defects as a rhetorician. Time, which can be but ill afforded, is wasted in the conventional introduction, and the impression of insincerity, than which nothing can be further from the speaker, is almost unavoidably produced by a long self-deprecatory preface. And, while on the subject, one other main rhetorical aspect of this great word-painter may be referred to, namely, that he 'doth protest too much.' As a rule he so far abuses the artifice by which the speaker represents that which he thinks, to be that which *is*, as to weaken the effect of his great descriptive force. In inference and allusion, indeed, his prodigality is unbounded; but if he more often intimated that some inexplicable paradox were merely the momentary phase of his ever shifting opinion, such solid residuum as remains, when the sparkle of the language has evaporated, would be more perceptible and more precious.

In listening to the eloquent voice, and in watching the beaming and unaffected smile that broke over the face of the speaker as he rendered, in his own felicitous English, some immortal lines of ancient epic, the scene, and the audience, and the hideous dress of the day, seemed thoroughly inappropriate. Looking only at the eye of the orator, and discerning how

\* For a 'condensed report of this Lecture see THE ARCHITECT for March 20.

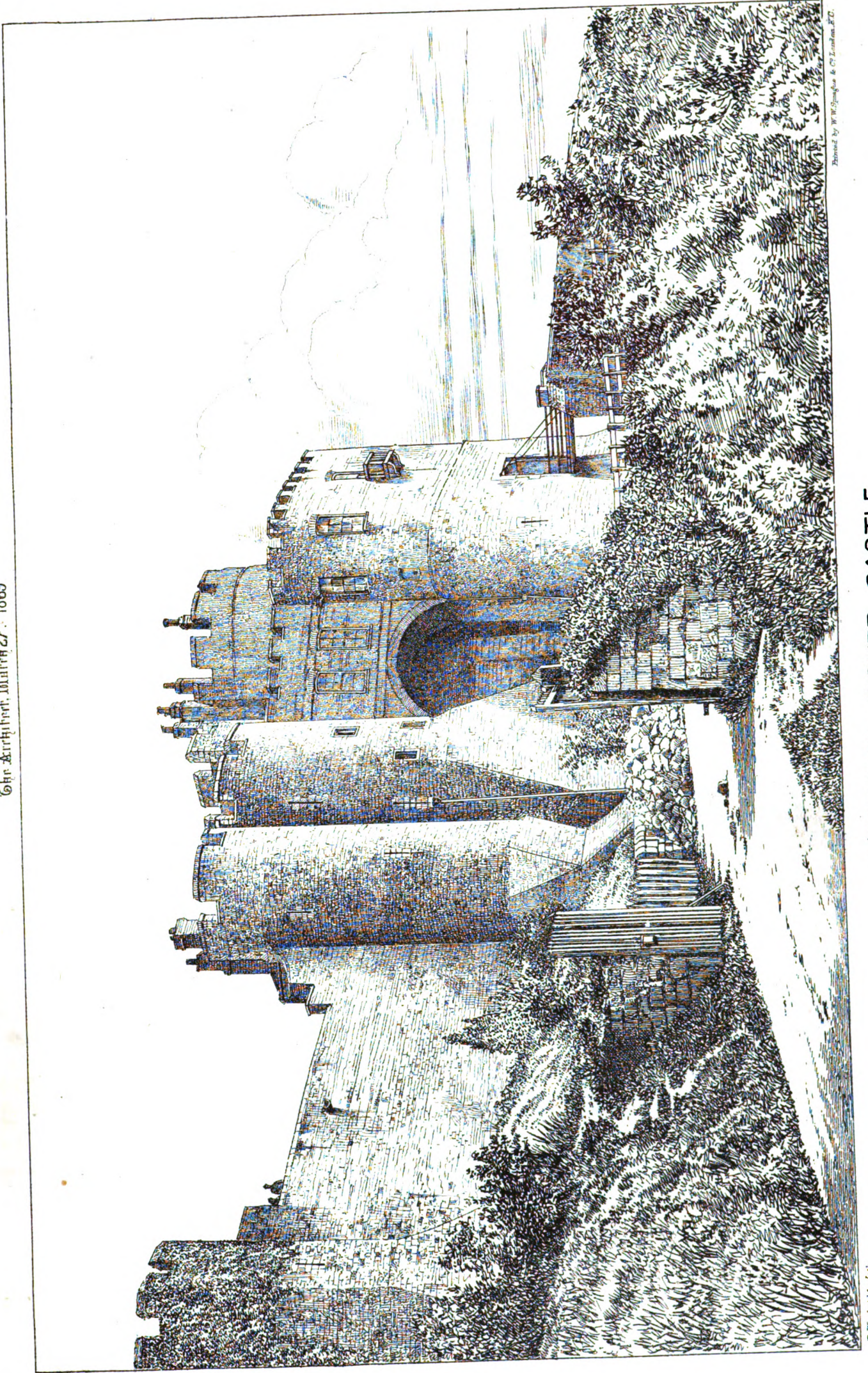
UNIV. OF  
CALIFORNIA



DOVER CASTLE FROM THE NORTH WEST.  
VIEW OF THE INNER BAILEY AND THE KEEP,  
*from a drawing by the late Rev. C.H. Hartshorne.*



Fort Arras, March 27<sup>th</sup> 1869



Engraved by W. W. Simpson & Co. London, E.C.

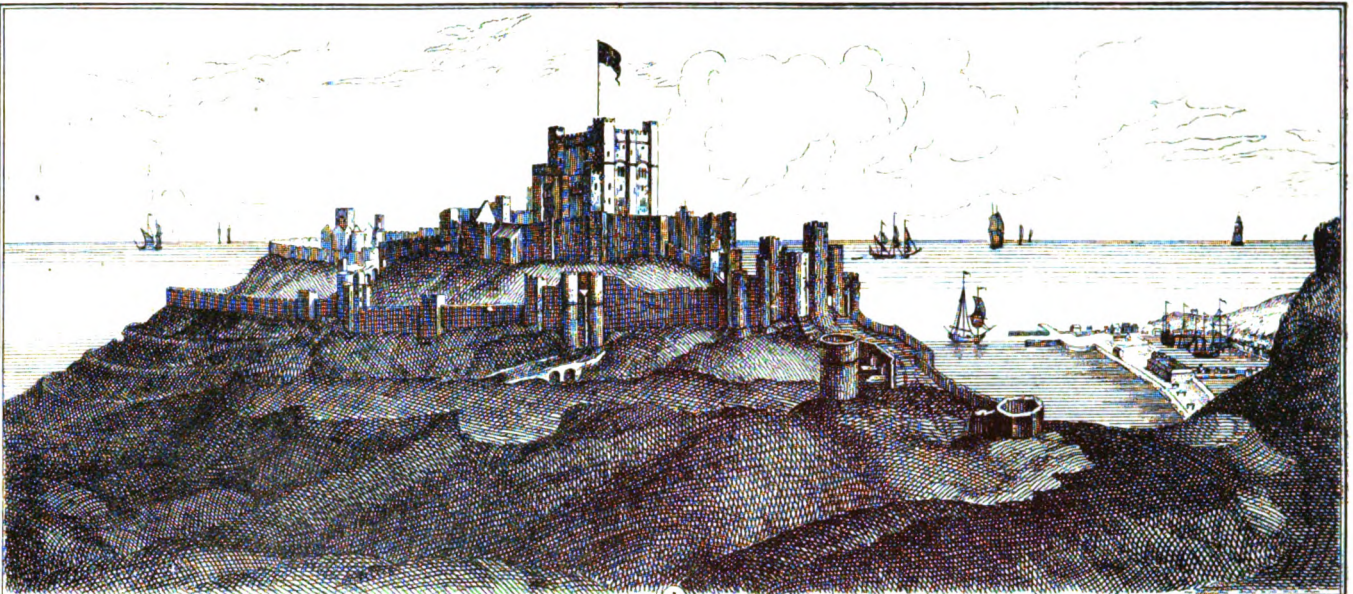
E. W. Simpson & Co. Lith.

GATEWAY - DOVER CASTLE.

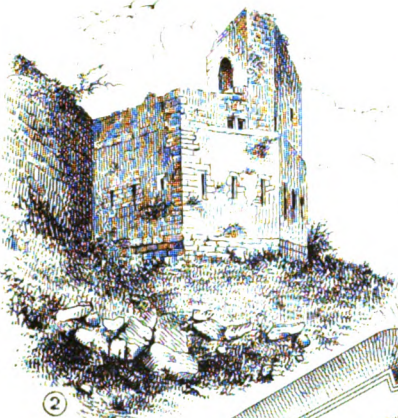


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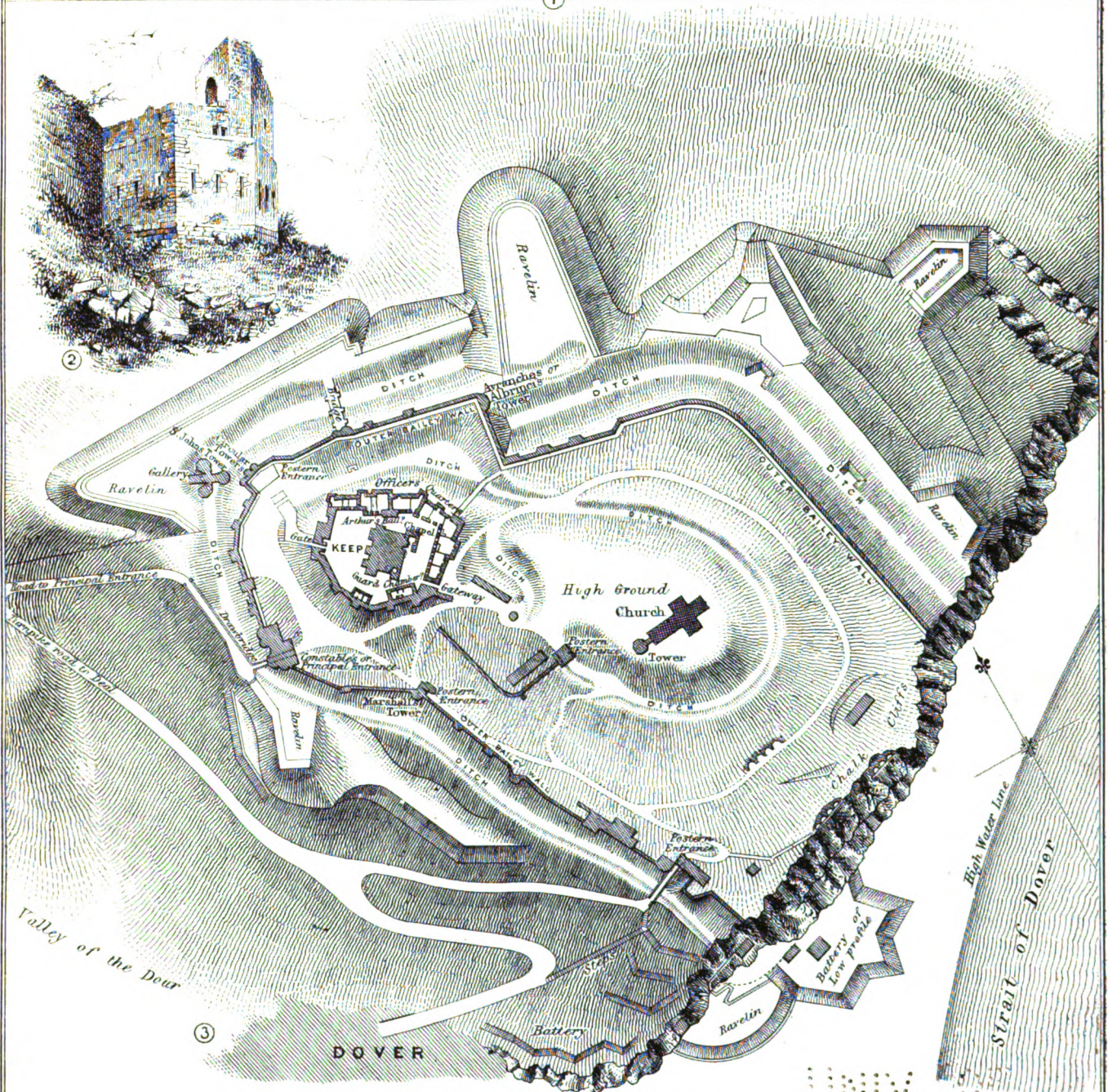




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1. DOVER CASTLE FROM THE NORTH,  
as it appeared in 1735: from an old print by S & N. Buck.

2. AVRANCHES TOWER,  
drawn by the late Rev. C. H. Haslegrave.

3. PLAN OF DOVER CASTLE.



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much more he longed to say than he dared to say—how much of the written pages before him he left unread—the anxious zeal of a kindred spirit, whose name, but not whose function, is unrecorded, came strongly to the mind. Mr. Ruskin is eminently distinguished for his mode of expressing a classic sentiment in the language of Scripture. He cannot be displeased at the description of his own address which is given in the following words:—‘Then the Priest of Jupiter, which was before their city, brought wine and garlands unto the gates, and would have done sacrifice to the people.’ Like the hierophant of Lystra, moreover, the orator showed a grateful honour to a deity who might be thought especially to favour him: ‘Mercurius, because he was the chief speaker.’

Into that apology for the ancient writings which formed the nucleus of Mr. Ruskin's lecture, it is not for a writer in these pages to enter. With much of paradox it contained, doubtless, much of truth. And those who are familiar with the grimy cloud with which the uncleanly habits sanctified by the influence of the mendicant orders have obscured the fairest scenes in Italy, will find a chord of sympathy in their breasts, that vibrates very sensibly in unison with the orator's key-note. No Italian priest now forbids a suppliant to approach the Divine presence with unwashed hands—as in the instance of that famous sacrifice which was held to inaugurate the supremacy of Rome. But we must enter a protest against the mode in which, not in the commencement but in the course of his lecture, Mr. Ruskin attempted to explain away much of the significance of Grecian legend, and thus tended, far from wittingly, to depreciate the significance and the grandeur of Grecian art.

Nothing could be more lucid than the just definition of what Mr. Ruskin called a myth, but what we prefer to call a fable, parallel, or allegory. The description of an event is given, not as a history, but as the means of conveying to the mind a distinct lesson by the use of imagery, and the introduction of one or more impossible details is made use of by the fabulist, to show that he is not recording, but hinting, truth. Such was the method of one of the greatest and most immortal teachers of antiquity—Esop. Such was the method of a greater Teacher, to whom alone the word immortal is strictly appropriate.

But, after this announcement, Mr. Ruskin glided insensibly into the very discrepant German theory of the myth. He spoke of legends ‘crystallising into form,’ ‘throwing off the caterpillar state, and assuming the wings of Psyche.’ In short he threw the weight of his brilliant genius into the scale of that philosophy which would break down history, in order to develop it out of the internal consciousness of individual professors. And what concerns us, such an explosion of the theory of history tends to bury beneath the fragments caused by the concussion, the chief sources of our reverence for the relics and traditions of ancient art.

As to the twofold source from which ancient legend has sprung, we agree to a considerable extent with Mr. Ruskin. But he takes only a part of his theory, and he omits precisely the part which has most value to the artist. He draws far too much, we are convinced, on the theories of writers like Dupuytren (his *L'Origine des Cultes*). That some of the heroes and demigods of antiquity were ancient kings and chiefs, seen as they loomed through the golden haze of that poetry which is the native language of the childhood of peoples, no less than of individuals, cannot be denied. That physical phenomena or powers were denoted by other mythologic personages, such as Eolus, and Iris, and Thetis, and the swart smith who forged his thunderbolts in the volcanic glow of Etna, in the long period when Vesuvius had quenched his fire, we freely admit. But it is to a third source that we must attribute the origin of those forms which have chiefly occupied the chisels of the Grecian sculptors—those forms which yet, when unearthed from an entombment of two thousand years, beneath the ruins of ancient Rome, or the volcanic shroud that enwraps Herculaneum, all but breathe in marble and in bronze. The powers, and passions, and frailties of the human mind, were the gods and genii embodied by the artists, and hymned by the poets of Greece.

To represent the lofty virgin daughter of Jupiter, springing from the brain of the king of gods, as the ruler or spirit of the air, at once to ignore the existence of the cloud-compelling wielder of the thunderbolt, and of his sister wife, Héré—the very name is significant—and to render unmeaning the attributes of Minerva!

But we have no space to dwell on the charming subject, or to break another lance with so illustrious an opponent. We appeal from Mr. Ruskin to himself. At the commencement of his lecture, as of his writings, he is wont to assume all the precision of science. He indicates the path on which he bids us to follow him as if with the wand of Ithuriel. The way lies through pleasant valleys and meadows enamelled with flowers, but it leads straight to the temple of Truth. Woe to those who linger on the way! For all false guides is reserved that righteous anger which Mr. Ruskin is so fond of describing as the cardinal virtue of ‘Justice’—so much so indeed as to have varied a very venerable quotation into ‘He was clad with anger as with a cloke.’ We follow in awe and in delight. But our guide stoops to pluck a flower, then he turns for a second, then he leaps into the air and brings down a spray laden with blossom. He stops to load his followers with his many-leaved and fragrant spoil, and then he starts full speed after a glorious and erratic butterfly. We watch the elfin form fading in the distance at a pace we are unable to follow, and we sigh for the loss of the tender and loving guide who has, in his admiration of the last form of beauty that caught his appreciative eye, forgotten his self-imposed task to guide us to the Temple.

## PARLIAMENTARY PROCEEDINGS.

### Palace-Yard Station.

On Monday, March 22, Mr. LAYARD, First Commissioner of Works, in answer to a question by Mr. Herbert, who asked when the passage leading from Palace Yard to the station of the Metropolitan Railway was to be opened, stated that there had been unfortunately some delay with respect to certain works under the Yard, but he expected that the passage would

be commenced at once, and the architect would endeavour to complete it with as little delay as possible. It would be open in about four months.

### District Asylums.

Mr. GOSCHEN, in answer to enquiries by Mr. W. H. Smith, said that the amounts of 56,000*l.* and 44,000*l.*, respectively specified in the returns relating to asylums (Metropolis) as the estimated cost of the structures of the Fever and Small-pox asylums at Stockwell and Homerton, did not include the amounts for furniture or fittings. The original estimate of the Stockwell Asylum had been reduced by 5,600*l.* But, on the other hand, the estimates for furniture and fixtures must, as yet, be regarded as simply provisional. They amounted to about 16,000*l.*, besides a sum of 6,700*l.*, which represented 10 per cent. for possible contingencies. These figures applied to the Stockwell Asylum, and not to the Homerton, of which he had not yet received any estimates beyond the cost of structure given in the return. In reply to a second question, with regard to the number of beds originally proposed, they were as follows, and he might observe that the estimates for the number of beds were those of the managers of the asylums, and not of the Poor Law Board, though the inspector had conferred with the managers. The number of beds at Newington was about 600, at Kensington 700, at Rotherhithe 500, at Poplar 570, and in Central London about 600. These were entirely provisional estimates, with regard to which no decision had at all been taken.

### The Cadastral Survey.

On Tuesday, March 23, Mr. Cardwell, in reply to a question by Sir L. Palk, said the Cadastral Survey of the mining districts had been going on in Denbighshire and other counties, but at present it was not decided when that of Devon and Cornwall would be commenced.

### Consolidation of the Sanitary Acts.

Mr. BAUCE, in reply to a question by Lord Eustace Cecil, said it was not his intention to introduce during the present session a bill to consolidate the various sanitary Acts, or to reconcile the conflicting clauses in some of them, although he admitted that the subject was well worthy the attention of the Government. He hoped to be able to introduce a short bill to facilitate the union of draining districts.

## THE SITE FOR THE LAW COURTS.

ON Monday last a meeting was held in the Rooms of the Society of Arts to discuss the question of the site for the new Law Courts, the Earl of Harrowby in the chair. Among those present were Sir C. Trevelyan, K.C.B., Mr. Street, A.R.A., Mr. J. Young, and many gentlemen who have been associated with the subject. Mr. Thomas Webster, Q.C. commenced the proceedings by a statement advocating the Carey Street site, chiefly on the ground of its proximity to the legal quarter of the Metropolis. The Carey Street site would, he said, lessen the traffic on our great thoroughfares by rendering necessary the adoption of new streets leading east and west from Carey Street; that to the east, to relieve Ludgate Hill and Fleet Street, while that west would relieve the Strand. He suggested subways from Holborn to the Courts, continued to Serjeants'-Inn and the Temple, which would place all the centres of the law in connection with the Temple of Justice. These subways, he urged, could be so made as not to tempt the general traveller to use them. In conclusion, he dwelt upon the great saving of time to be hoped for by the concentration of the Courts.

Sir Charles Trevelyan contrasted the advantage and disadvantages of both sites in detail. He declared that, not only was the north side to be considered, but the south side of the Thames, for he said the southern side contained the suburban residences of a very large portion of those having connection with the law. He pointed out the various existing means of reaching the Embankment site: there were broad roads, omnibuses, a railway, the river, and other facilities; and showed that the outlay necessary to secure the required space between the Strand and the river would not be excessive.

Turning to the question of the best use to make of the already acquired Carey Street site, he urged that Gray's-Inn, Bedford Row, Hatton Garden, and other places on the Holborn site were dead or dying as dwellings for the lawyers, and suggested that those places should be given up for building sites for working-men's houses, which were much wanted, while the professional men there could take up dwellings on the Carey Street site. He also suggested that, as Old Square, Lincoln's-Inn, ought to come down, the Benchers might adapt a part of Somerset House, from which there would be an exodus of Government officials, and so be on an equality with the Templars in respect to the advantage of proximity to the Courts and offices. He declared that by his scheme the cost of site would be only 1,600,000*l.*, as compared with the expenses of the other, which, with its approaches, is likely to cost over 3,000,000*l.* Mr. J. Young supported the Carey Street site. He protested against the delay which would ensue if the questions were again considered, pointing out that the matter had been in hand for many years, and 800,000*l.* had been already expended. Mr. Street spoke on some of the alleged disadvantages of the Carey Street site, as represented by Sir Charles Trevelyan, which he stated did not exist, and added that the alleged advantages of the Embankment in respect of its expansiveness would be found to be overstated. Eventually the discussion was adjourned after the customary vote of thanks to the chairman.

## THE HANDY-BOOK OF HOUSE-BUILDING.

### CHAPTER I.—LIVING-ROOMS.

(Continued from page 129.)

Once more, to be comfortable, the living-rooms, and indeed every other part of the house, must be free from smells. The smell of cooking is the one most often intrusive; and a most annoying intrusion it is. This annoyance need not be feared if foreseen and sufficiently guarded against by providing proper doors and by care in planning the positions of the

kitchen, corridors, staircases, and above all of the dinner-lift, if there be one. To prevent the danger of noisome smells, it is a good rule that no drain be ever taken under any living-room. No cesspool should be formed within reach of the house. No space under a floor should be left inaccessible, so that if a rat or other animal dies there its carcase cannot be got out. The water used in mixing plaster should not be foul, or the house may smell of it permanently. The greatest and most vigilant care should be taken during the construction of a house that nothing offensive to the smell be left under any floor. The arrangements of the plan should provide, as will be elsewhere shown, for proper ventilation wherever an offensive smell could arise; and, lastly, if gas is introduced, the best workmanship and nothing but iron pipe should be insisted on. A very minute leak of gas (such as injury inflicted by a nail driven into a wall upon lead or zinc pipe may occasion) is not readily recognised by the sense of smell for what it really is, and many a room has been rendered unpleasant and unwholesome for a length of time by a very trifling escape; an unpleasant smell has been noticed, but as it has been very little like the scent of gas in large quantities, it has escaped detection, and consequently has remained unremedied for a long time.

Lastly, to be thoroughly comfortable, rooms, in fact the whole house, must be well appointed. In other words, all the fittings must be good, and such as will not get out of repair.

The bells must all ring; the handles of doors must never come off; the doors themselves must shut close; the shutters and the windows must open and close easily and without noise. If casement windows are used in a country house for access from the living-rooms to the garden, they must be so constructed as perfectly to keep out wind and water at their meeting and at the cill, and they must be so fixed as to remain perfectly steady whether open or closed, when wind is blowing. Blinds must always have a space prepared for them, and be so constructed as to work satisfactorily and easily. The fittings, in short, must all be good, and the joinery of thoroughly well-seasoned materials. This is very simply attained by a little care, a little outlay, and a little common sense to guide both.

The first rule in selecting fittings is to have everything simple. In London or a large town, where skilled help is readily at hand if anything goes wrong, it may be less unsafe to make use of contrivances that are more or less complicated; but in a country situation anything that it is beyond the power of the village blacksmith and the village carpenter to set right, at least temporarily, is out of place—the wisest course being, indeed, to have everything so simple that it hardly can go wrong.

Next to simple fittings, large-sized ones are to be insisted upon—good-sized knobs, shutter bars, window fastenings, taps, pipes, bolts, or locks, most certainly costing more than the smallest sizes, but they are always stronger, and generally better made. It may be a useful hint to all except builders north of the Tweed to add that all descriptions of ironmongery are made of larger sizes and more solid for the Scotch market than for ours: these are consequently the best to obtain.

A more appropriate opportunity for speaking of those fittings unconnected with living-rooms may be found hereafter, but it is right here to note that upon their acting satisfactorily depends much of the comfort of the inmates of those rooms. If we say nothing here of the discomfort felt in the dining-room when the kitchen range is out of order, the smoke jack does not act, or the oven has burnt the pie crust to a cinder; or of the misery in the boudoir when a neighbouring waterpipe has been burst by the frost, or in the drawing-room when the bathoverhead has overflowed and spoilt the newly decorated ceiling (a reason, by the by, for never putting a bath-room over a good living-room if it can be helped), it is not because such accidents ought to be ignored, but because these matters belong to parts of the house which do not come into this chapter. Those appointments and fittings, however, which actually pertain to the living-rooms, i.e. the joinery and ironmongery of their doors and windows; the fire-place, with its grate, register chimney-piece, &c.; the bells; the gas fittings and the ventilators, do properly belong to it, and with regard to them we repeat with emphasis that the comfort of the house greatly depends upon their being simple, of ample size, and well made. Upon no part of a dwelling house is it more desirable to spend liberally than upon these appointments; and after all the difference between the cost of providing them in the best way and the cheapest amounts to a most insignificant fraction per cent. of the outlay upon any dwelling house.



#### BUILT TO SELL.

SIR,—Let me induce you to warn house-buyers to be very careful ere they part with solid sterling gold for new-built airy fabrics which scarce resist a gale of wind—structures which often fall down before completion, but are saddled with long leases, strict repairing covenants, and heavy ground-rents. Since the pulling down of so many City, Westminster, Borough, Clerkenwell, Somers Town, and other ancient buildings, for railway and street improvements, these rotten old materials have been freely used in the suburbs, but are so cleverly concealed by the aid of new facing-bricks, new thin floor-boards, plaster, paint, and showy paper-hangings, as oftentimes to dupe the unwary and incautious purchaser, who, alas! very soon discovers that cracked window-arches, sinking foundations, stopped drains, leaky roofs, shrunk woodwork, shaky floors, falling rotten plaster, rising damp, smoky chimneys, and other minor evils, sadly try his patience and pocket; in short, that in the long run it would be a saving at once to pull down and rebuild properly the vile erection, than to be at a continual expense and worry for unsatisfactory repairs.

I for many years have been almost daily amongst speculative building estates N., S., E., and W., and well know the operations of needy 'duffing builders,' who run up on some of those sites dwellings which, if you view

in carcase the abominable materials combined with the slight, rapid, scamping, and unskilful workmanship, would convince anyone they were meant only 'to let and not to last,' that they were only contract-built edifices by 'slop builders,' certainly not sturdy houses like those which our ancestors were so justly proud of for their weather-tight and durable qualities.

As dilapidations are incessant, no landlord can accept low rents for 'sale houses.' I entreat both tenants and owners to ascertain, with strict care and vigilant enquiry,

1st. That the house is not built on made soil, where the gravel has been dug out and sold.

2nd. That it has deep concrete foundations.

3rd. That all the materials are new, and the bricks sound hard-burnt stocks, well bonded in lime-mortar.

4th. That no iron chimney-bars supporting the arch are absent.

5th. That the drainage is distinct and separate, properly connected with the main sewer.

6th. The strength of joists, quarterings, lintels, rafters, purlins, sills and sill-heads, thickness of doors, floor-boards, shutters, skirtings, shelving, panels—in short, quality and quantity of timber used. It is frightful to see how slightly houses are timbered and scantily nailed.

7th. Whether the grates, locks, ironmongery, blinds, and other fittings are of the very cheapest description, unfit for wear.

8th. That the house has a trap-door fire-escape to roof.

9th. Avoid zinc gutters, cisterns, flats, &c., as zinc is a very temporary affair. Insist upon lead or stone cisterns, &c.

10th. If the parish has not taken the road, have money security for its cost from seller. It may save you 10*l.* to 30*l.*

11th. Find out if it is an estate where any scamping is allowed, to create heavy ground rents and lawyer's leases.

12th. Investigate the title thoroughly. Beware of needy bankrupt or litigious sellers, and improved or increased yearly ground rents.

Lastly. Insist upon a warranty (legally drawn up) with full specifications attached, subject to penalties if false. Have the warranty before deposit or purchase.

In conclusion, let me declare my picture of modern houses might have been presented in much worse colours, as every district surveyor or workman can easily certify, and no doubt many will do so, in reply to this brief epistle on one of the frauds of the day, viz. 'built to sell,' 'to let and not to last' houses.

I am, Sir, your obliged reader,

WM. PERCY TRUMAN.

#### NEW BUILDINGS AND RESTORATIONS.

Investigations have been for some time in progress at the eastern end of the south aisle of the choir of Chester Cathedral, Mr. Scott being of opinion that the aisle originally terminated with an apse, and that the foundations in that case might still be discovered. The necessary excavations have now been made, and the casing of the present walls immediately above has been carefully examined; the result being that the actual basement courses of the apse and distinct traces of a conical tower or buttress above it have just been discovered, of the utmost interest in an ecclesiological point of view. This feature, unique, it is believed, in this country, though not unknown in Normandy and other parts of the Continent, must have been destroyed at the time when the very ugly and now tumble-down chapel at the south-east corner was added to the venerable Lady Chapel, to the great disfigurement and prejudice of that beautiful structure. Mr. Scott will propose to restore this curious apse, and to remove the ruined southern chapel altogether, revealing once again to the eye the beautiful portions of the original Lady Chapel.

The Proposed Harbour and Basin at St. Just.—The provisional order applied for, is thus reported on by the Board of Trade:—The promoters are Messrs. Vivian, Daniell, and others, who apply to be incorporated as 'The St. Just Harbour and Pier Company,' with a capital of 70,000*l.* in 7,000 shares of 10*l.* each, with power to construct a harbour and basin on Pornven beach, near Cape Cornwall with piers in connection therewith; to borrow 17,500*l.* on mortgage and to levy rates. The estimated cost of the work is 48,000*l.* No objection has been made to the scheme, and the Board of Trade propose to proceed with the order.

The parish Church of Wath, near Doncaster, has been re-opened, after having been closed about fifteen months for a thorough restoration. The organ, a fine instrument built some years ago, has been removed from the west end of the church into a new chamber or chapel, built expressly for its reception, and the fine old gothic arch under which it was before situated has thus been opened. The ceiling has been altogether remodelled in the chancel, and the entire flooring of the edifice lowered in order to bring to view the ancient foundations of the pillars. The old pews have been replaced by comfortable oaken seats, which add much to the internal neatness of the place, whilst the ancient pulpit has been replaced by an elegant carved one of the same pattern as the new seats in the chancel and corresponding with the communion rails. The four tablets of Commandments have been removed, and put over the principal arch between the nave and chancel. The stained glass window, erected by Miss Scholfield, and which used to be at that side where the organ is now situated, has, of course, been removed, and put in at the opposite side of the chancel. In addition to these extensive alterations the church has a much better provision for lighting than formerly, the unsightly pipes being now substituted by elegant brass standards. Altogether when finished the alterations will very materially improve not only the appearance of the place, but the means of convenience and comfort to the parishioners. The cost of the restoration has been 1,800*l.* The architects have been Messrs. Hadfield and Son, of Sheffield.

A Christian Church is to be erected at Nazareth. The estimated cost is 2,000*l.*, and towards that amount 1,820*l.* have been received.



**Lowestoft.**—Christ Church, Lowestoft, has been opened for Divine service. The edifice is in the Early English style, and consists of nave, aisles, chancel, organ chapel, tower, and spire, with porch and vestry. The tower is placed at the south-east angle of the nave, terminating in a spire, rising to a height of about 80 feet.

**Lincoln.**—The new church for the combined parishes of St. Peter-in-Eastgate and St. Margaret will, in all probability, be shortly commenced. The cost of the building is estimated at 2,500*l.*, and 2,120*l.* have been already subscribed.

**Warrington.**—A new church at Warrington, dedicated to St. Ann, has been consecrated by the Bishop of Chester. An endowment has been provided by Mr. W. E. A. Beaumont of Orford Hall, who has also given 2,500*l.* of the total cost of 5,200*l.*, the remainder having been contributed by the public.

**Webbheath.**—The plans of the new church have been prepared. The style is Early English. The plan is simply nave and chancel, with a south porch at the western end, a bell gablet at the intersection of nave and chancel, and a vestry, and organ arch between it and the choir.

**Wickham Market.**—Efforts are now being made to restore the church, which dates back to the year 1349, and has of late years been falling into decay. The tower, which is octagonal, is surmounted by a leaden spire, rising to a height of 135 ft., and is a conspicuous landmark for seagoing vessels.

Some months since an east window of great beauty was placed by Mrs. Hogg in the church of St. Mary the Virgin, Collaton, near Paignton, in memory of her husband, the founder of the church. Since then the deep and affectionate reverence entertained for his memory has been testified by the addition of two south chancel windows, and of a reredos in Caen stone; the former being the gift of Mr. Hogg's brothers and sisters, and the latter that of several friends. The windows were designed by Mr. J. F. Bentley and Mr. Westlake, and executed by Messrs. Lavers and Barraud. The 'Resurrection' and 'Christ's Charge to St. Peter' are the subjects of the two windows, which are spoken of in terms of high praise. The subject of the sculpture in the reredos is 'The Last Supper,' in alto-relievo, originally treated, but with a faithfulness to the highest traditions of art, especially in the head of our Blessed Lord, worthy of the great Leonardo. In this work the artists have aimed to preserve the unity of the group while giving diversity to the individual characters. The whole was executed by Mr. Piffers with his well known skill. The architectural portions of the reredos, designed, as well as the group, by Mr. Bentley, executed at the works of Mr. Farp, consist of a groined canopy, with panels of Irish green marble, surmounted by the 'Agnus Dei' and the 'Pelican in her Piety.' The wall-arcades (also of Caen stone) on each side of the altar, and returning north and south of the chancel, spring from plinths of yellow Mansfield stone, and contain large panels of polished red Staffordshire alabaster, between which are canopied angels. A cornice of foliage and fruit, elaborately carved, surmounts the whole design.

#### Rebuilding and Enlargement of Poplar Union Workhouse.

At a special committee meeting of the Poplar Union Board of Guardians, held last Friday morning in the Board-room of the Workhouse, James Barrington, Esq., in the chair, tenders were opened for rebuilding and enlarging Poplar Workhouse. As far back as 1857, Mr. Farnall, Poor Law Inspector of Workhouses, reported this Workhouse to the Poor Law Board as 'inadequate in size, and inefficient in arrangement.' At the present time it is over-crowded by 530 inmates, and for many months the Guardians have been compelled to 'farm out' more than 500 people, who, in addition to the first-mentioned, claimed admission to the House. The greater portion of the old Workhouse is to be demolished and, the Guardians having acquired additional land at the rear, a new House is to be erected capable of accommodating 808 persons. It was originally intended by the Board to provide accommodation for 1,000 able-bodied paupers, and plans were prepared in accordance with this intention, but, upon the drawings being submitted for the Poor Law Board's approval, those gentlemen refused to sanction the carrying of them out; and, suggesting certain modifications which brought the number to be accommodated down to 808, recommended the Poplar Board to prepare fresh drawings, embodying the views of the Poor Law Board. There was considerable dissatisfaction expressed by the Guardians at this, but it was eventually resolved to accept the Upper Board's *dictum*, and the architect, Mr. John W. Morris, of East India Road, Poplar, was instructed to prepare a fresh set of drawings. Having done so, the architect submitted the new plans, and the Poor Law Board immediately approved them. The Local Board then issued invitations to builders to send in tenders for the works. The architect's estimate of the cost of the works, as originally determined upon by the Guardians (*viz.*, for 1,000 paupers) was 47,709*l.*; but the extensive modifications suggested by the Poor Law Board reduced this sum by 12,709*l.*; the estimate, therefore, for the building to accommodate 808 persons stood as 35,000*l.*

There were fifteen tenders for the works sent in, as follow:—

Messrs. Wick, Bangs & Co.	£34,200
Mr. John Kirk	35,996
Mr. Sheffield	33,267
Messrs. Cooper & Callum	34,980
Messrs. Myers & Sons	34,564
Mr. Anscombe	32,300
Messrs. Atherton & Latta	33,855
Mr. Abraham	33,490
Mr. Ennor	34,700
Messrs. Hill, Keddall & Waldron	32,480
Mr. J. F. Watts	36,589
Messrs. Webb & Son	33,263
Mr. Killbey	36,116
Messrs. Scrivener & White	34,854
Mr. Henshaw	34,350

The special meeting having discussed the tenders, and conferred with the

architect in reference thereto, decided to recommend to the Board's consideration the two lowest tenders, namely Mr. Anscombe's and Messrs. Hill, Keddall and Waldron's.

At the ordinary business meeting of the Board, held on Friday afternoon, the Committee's recommendation was read by the Clerk, and a very lengthy and animated discussion ensued. Numerous resolutions, counter-resolutions, and amendments were proposed, some of which were seconded and put to the vote, whilst others could find no supporters and consequently 'fell through.' One proposal advocated the addition of Mr. Sheffield's name to the recommended two on the score that that gentleman was resident in the district and would employ labour from the district; Messrs. Webb's tender was then proposed on the same grounds; a third proposition suggested that the Committee's recommendation should be thrown over, and the fifteen tenders submitted to vote. After more than two hours had thus been spent, Mr. W. Hickson, superintendent of the West India Dock Co., moved, and Mr. J. R. Ravenhill, engineer, seconded, 'That Messrs. Hill, Keddall, and Waldron's tender be accepted, as Mr. Anscombe, whose tender is the lowest, has not complied with the Board's condition in regard to the provision of sureties.' (It appears that Mr. Anscombe had not supplied the addresses of the parties proposed as his sureties.) This resolution was carried by a majority of 6, and Mr. Waldron immediately signed the contract. The Board's seal was then affixed to the contract, and the Guardians proceeded to the general business of the day.

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

### Paris Notes for Connoisseurs.

The first day of the great Delessert sale passed off with all its expected éclat, some of the gems having fetched enormous prices. The first lot consisted of the famous Raphael, the 'Virgin and Child,' of the Orleans Gallery, which was purchased by M. A. André for the Duc d'Aumale, as it was said in the room, for the sum of 150,000 francs (6,000*l.*). Four works by Backhuysen sold for 1,300*l.* Five by N. Berchem for 1,332*l.* Even at these high rates it is said that several works were bought in.

The results of the latter days' sales are more surprising even than those of the first day, and the total proceeds of the whole amount to 1,795,330 francs, over 71,813*l.*, the total number of lots being only 2,180. The second day's sale, consisting of the remainder of the pictures by old masters, brought the largest amount of the four days. The most noticeable cases were the following:—'Sunset,' by Jean Both (called the Italian Both), 720*l.*; 'Two Canalettis,' 540*l.*; 'A Dutch Interior,' by Pierre de Hooze, bought by M. B. Narischkine, for the large sum of 6,000*l.*; 'The Interior Court of a Dutch House,' by the same artist, 1,640*l.*; 'The Dutch Musician,' by A. Van Ostade, bought by M. Say for the sum of 840*l.*; 'Portrait of an Old Woman,' by the same, 880*l.*; 'The Fish Market,' by David Teniers the Younger, fetched more than any other work in the sale, namely, 6,360*l.*; 'An Interior, known as the White Hat,' by the same artist, fetched 444*l.*; two of Gérard Terburg's pictures, 'A Young Woman and a Cavalier,' and 'Tasting,' sold for the comparatively high rates of 1,200*l.* and 1,800*l.* Two landscapes by Wynants, with figures by A. Van de Velde and Lingelbach, sold for 1,340*l.* and 2,040*l.*

The modern pictures sold quite as well in proportion as the ancient; thus, a small and early work by Rosa Bonheur fetched 620*l.*; a fine Bonington, 'François Premier and Marguerite of Navarre,' 1,240*l.*; 'Sainte Cecilia,' by Paul Delaroche, 840*l.*; 'The Old Lacemaker,' by Baron Lays, 720*l.*; Meissonier's 'Chess Players' (1841), 1,080*l.*; and 'The Amateurs' (1843), by the same artist, the large sum of 1,600*l.*; an exquisite flower and fruit piece, by Saint Jean, fetched 660*l.*; a Swiss landscape, by Wickenberg, 480*l.*; Pradier's 'Phryné,' the marble statue which, if our memory does not deceive us, won one of the grand prizes at the Great Exhibition of 1851, sold for 440*l.* The sculptor's fame has waned sadly.

At the sale of the collection of the late M. Breithmeyer, a picture by Prudhon, 'Venus, Cupid, and Hymen,' presented by the painter to his friend Parent, then artist at the Sèvres factory, sold for 180*l.* At the same sale the water-colour drawings and sketches fetched extraordinary prices, the most remarkable items being 'A Sketch of a Turkish Merchant,' by Bida, 19*l.*; 'The Death of Titian,' a pencil sketch by Delaroche, 9*l.*; 'A Sketch of a Scotch Shepherd,' by Gavarni, 9*l.*; 'A Head of St. John,' by Gleyre, 12*l.*; a small water-colour, 'Steps in a Park, with figures of the time of Louis XIII.,' by Isabey, 15*l.*; 'Cromwell's Daughter begging her father to preserve the Portrait of Charles I.,' a sketch by Raffet, 10*l.*; 'The Finding of the Body of Charles the Téméraire, Duke of Burgundy, after the Battle of Nancy,' by the same artist, 13*l.* 10*s.*; and 'The Grand Canal of Venice,' in water colours, by Ziem, 26*l.* 10*s.*

At another sale a sepia sketch by Rosa Bonheur, of 'A Farmer's Horse at the door of an Inn,' sold for the relatively large sum of 27*l.* 10*s.*; at the same sale seven drawings by Ingres, some of them heightened by colour here and there, sold for sums varying from 7*l.* to 15*l.* each; a sketch in red chalk of 'A Young Woman Working,' by Meissonier, for 14*l.* 8*s.*; a drawing by F. Millet, of 'The Interior of a Barn,' 13*l.* 8*s.*; and a Hussar in sepia, by Horace Vernet, for 8*l.*

The rage for ancient *faiences* knows no diminution; there was a sale in Paris on the 8th and 9th instant, at which some Urbino ware fetched remarkable prices. A large dish or plateau attributed to Orazio Fontana with a coat of arms in the centre, surrounded by an arabesque frieze, executed by what is called the process of *bianco sopra bianco*, and having on the broad edge a composition representing the fall of manna in the wilderness, sold for the large sum of 226*l.*; two other dishes fetched over 50*l.* and 60*l.* respectively; a *gourde*, or vase, with two handles, 53*l.*; and a three-lobed fruit stand on pedestal, 18*l.* At the same sale there were several other remarkable objects, as for instance a small Gothic reliquary in carved wood, which sold for 89*l.*; two terra-cotta vases by Clodion,

52l.; a round tazza in Limoges enamel, painted in *grisaille* by Raymond, 1558, sold to M. Stettiner for upwards of 60l.; and another vase in the same style and by the same artist, 1575, sold to the same collector for 68l.; a saltcellar with foot, painted by Pierre Raymond, 35l.; two square enamelled slabs, the painting attributed to Pénicaud, 50l.; and another small square enamel in *grisaille* by Leonard Limousin, 1539, 21l.

The other day a Parisian connoisseur picked up a treasure at a *bric-à-brac* shop in the Rue Eau de Robec at Rouen, an enamel painting in perfect preservation, by Leonard Limousin, which had hung for years on the wall of the staircase of a cooper's house in the town. The work is a portrait on an ultramarine ground, and its archæologic value is greatly increased by the discovery that it represents Michel Nostradamus, the famous, or notorious, doctor and astrologer of Catherine de Medicis and Charles IX. The lucky finder paid 200 francs for the treasure, and immediately sold it to a Paris dealer for 3,000, who is said to have re-sold it for 8,000 francs.

Amateurs of French painting witnessed the dispersion of a very fine collection in Paris on the 22nd instant; the collection includes pictures by many of the first French artists, including Marilhat, Meissonier, Rosa Bonheur, Cabanel, Charlet, Corot, Diaz; five works by Decamps, Prudhon's 'Andromaque,' from the Laperlier collection, four pictures by Diaz, 'Mephistopheles and Faust,' by Eugène Delacroix, three works by Isabey, studies by Ingres and Léopold Robert, three by Giraud, landscape by Th. Rousseau, and two works by Troyens. Also, 'Faust in his Study,' 'Marguerite at her Wheel,' and two other works by Ary Scheffer; with a few pictures by the old masters.

On the 23rd and 24th instant was to be sold the collection of the late well-known dealer M. Moreau-Walsey of Paris, including works of all schools, and some rare productions of the fifteenth century. Amongst the most remarkable are the famous triptych, by Hans Memling, formerly belonging to the Sforza family; a Lucretia, attributed to Albert Dürer; and a very fine Claude. The collection is in all respects a very remarkable one, and includes amongst other works one by Sir Joshua Reynolds; an English brick-field with sunset, described as a vigorous work.

On the last day of the present month is to be sold, also in Paris, the collection of M. Kraetzer, of Mayence, including many works of great importance, principally of the Flemish school. This is the busiest period of the art season, but it will shortly be checked by the dissolution of the Chambers and the coming elections.

#### Notes from Germany.

In a previous Number we noticed an Art Exhibition, to be held at Wittenberg in Germany, this summer. The building for this purpose has been commenced, and is described as of *u* shape, having a frontage of 500 feet, with three receding wings. The sky line of the front elevation is broken up by the dome of a central hall, seventy feet in diameter, in the middle of which there will be a handsome cast-iron fountain. The two spaces formed by the three wings at back will form open covered courts containing machinery in motion, and the various processes of wood carving, ivory cutting, turning, repoussé work, weaving, bookbinding, &c., will be shown here. The entire available space will amount to 156,000 square feet.

The council of the museum at Stuttgart having advertised for designs for a new building, a number of architects responded to the invitation, and the result is just published. The first prize, of 1,200 florins, was awarded to Messrs. Grossheim & Schwarz, of Berlin; and the second prize, of 800 florins, to Professor Wagner, of the Architectural College at Stuttgart. The latter gentleman had chosen for his motto—'Deficiente pecuniâ deficit omne.'

Mr. Wichmann, the Munich sculptor, has just finished his model of Goethe. The statue will be in bronze, and is to be inaugurated on August 28, that being the 120th anniversary of the poet's birthday. Goethe was born at Frankfort, on August 28, 1749.

The Archæological Society of Heidelberg has collected sufficient funds to enable it to make a partial restoration of the fine old castle. The part to be first taken in hand is next the chapel, and immediately over the Great Tun.

An anonymous benefactor has sent to the municipal authorities of Leipzig the sum of 20,000 dollars (3,000*l.*), to be expended in the erection of workmen's dwellings.

The Emperor of Austria has lent to the Museum at Vienna a very fine collection of church furniture, of the time of Henry the Lion (1194). The collection includes specimens of Byzantine and Cologne enamel, gold vessels, reliquaries, portable altars and book covers, chiefly taken from the Cathedral of Brunswick and the Church of St. Michael at Luneburg. The Council of the Museum has published a catalogue with illustrations of the principal and most curious of these objects.

#### The Brandenburg Gate at Berlin.

This gate occupies at Berlin very much the position which the Arc de Triomphe does at Paris, for whilst the latter leads from the Champs Elysées to the Bois, the former leads from the Linden to the Park. Until lately the 'gate' consisted of a double row of six Doric columns, having an entablature over, and surmounted by the Quadriga, which in 1806 was taken to Paris, but was restored to its original position in 1815. From the designs of Professor Strack two wings have now been added, each consisting of four rows of five columns each. These, too, are Doric, but only about half the height, including entablature. The cost of these additions amounted to 35,000 dollars (5,250*l.*)

#### New Hotel-de-Ville for Vienna.

Detailed particulars of the terms of the competition for this great work, which is open to architects of all countries, will be found in a supplement of four pages appended to the *Moniteur des Architectes* for December, 1868. Twelve prizes are offered by the municipality, amounting in the aggregate to 2,800*l.* The designs are to be sent to Vienna so as to reach the Municipal Council of that city not later than September 1, 1869.

#### Improvements at Dresden.

Dresden is following in the wake of larger cities in its efforts towards

improvements, and the densely populated state of some parts of the town and the increasing number of its inhabitants, besides a constantly fluctuating amount of strangers (of whom the police accounts show there were 104,000 last year), seem to call for some effective measures for additional accommodation. With this view Mr. Löhmann, Engineer in Chief, has laid before the Minister of the Interior a project for rectifying the banks of the river on both sides of the Elbe, by means of embankments, similar to those of the Thames, though on a somewhat smaller scale, and for utilising the space thus gained as sites for public and private buildings. The eastern embankment will commence at the Elyseum and continue to the Marien Kirche, whilst the western will run from the Lamb Battery to the Bridge of Augustus.

#### Indian Notes.

*Art.*—Some interesting remains of Greek art have recently been exhumed from the bed of the river Indus, at a village called Rokri, in the Mianwali sub-division of the Banu district. Mr. R. Egerton took the first instalment of these curiosities, in the shape of three beautifully sculptured heads, which are now in the Lahore Central Museum. Mr. Priestly, the Assistant Commissioner of the sub-division, has since exhumed some further remains.

*Architecture.*—The Government of India has agreed to contribute towards the restoration of the Calcutta Medical College Hospital a sum equivalent to any amount, not exceeding three lakhs of rupees, which may be raised by private subscriptions and the municipality. The hospital was opened in 1852, but the building was severely condemned by the Sanitary Commissioner in 1865-66.

The Governor of Madras has published a minute on the conservation of ancient architectural remains. Lord Napier there shows how unworthy it is of our Government, and unjust to the natives of the country, to permit historical monuments to be obliterated. 'We are now constructing,' he says, 'the Strœvaganthum Weir with the materials of two grand pagodas. The Mussulmans pulled down the pagodas to build a fort, and the English are pulling down a fort to make an irrigation work. The gods are going to the river. Art will not suffer, and agriculture will gain. The great Brahminical structures, on the other hand, which are still the seats of pilgrimage and worship, possess, either in land revenues or in the offerings of the faithful, sufficient means of restoration and maintenance.' The restoration of Bejanagur, his lordship thinks, would be as impracticable as the restoration of Palmyra, but still something might be done to arrest its decay. The palace of Tirumala, at Madura, Lord Napier would restore to serve as public offices, and he points to Mr. Chisholm as an architect capable of carrying out the work. His lordship very justly criticises the liberal expenditure of the Supreme Government at Delhi and Agra, which had no reference to such practical purposes as are contemplated in the Madras restorations.

*Engineering.*—The Harbour Committee at Madras have finally closed their proceedings by recommending Colonel Orr's proposal for the straight-line breakwater 6,250 feet long, extending from Messrs. Parry's to the north side of the railway station at Royapooram, and at a parallel distance of 1,200 yards from the shore, in 7½ to 8 fathoms water.

A report is published by the *Madras Times*, that the Government of India has sanctioned thirty lakhs of rupees for the construction of a railway from Rangoon to Prome.

A new company is being formed in Calcutta for the reclamation of the salt-water lake, by means of the town sewage. The necessary capital has been estimated at thirty lakhs of rupees, upon which, it is expected, a Government guarantee will be given.

A Committee has recently been formed in Madras for the purpose of enquiring into the mismanagement of the minor irrigation works in that presidency.

The Egyptian Government, in view of much shipping being attracted towards Port Saïd, on the opening of the Suez Canal, has sanctioned the erection of three lighthouses on the Mediterranean, at Cape Burlos, Damiatta, and Port Saïd. The defences of Alexandria Harbour are being strengthened by iron-clad gun-boats.

#### A Runaway Ship.

During the late severe gales a large vessel, called the 'Belle of Lagos,' got adrift in the Mersey. The force of the wind carried her against the Waterloo Dock wall, by which she was so much injured that her crew, alarmed at the critical state of affairs, jumped ashore. The vessel, now left to herself, was driven with great force against the northern bridge connecting the great landing stage with the Prince's Dock wall. Her bowsprit penetrated the outer casing of the bridge, and the rolling of the vessel seriously injured the wrought-iron cross girders which support the roadway, as well as the planking. One of the enormous chains which support the mooring of the stage was snapped asunder. After considerable difficulty, the vessel was towed away, and taken into dock, though in a terribly battered condition.

#### The Abbey Bells of Bath.

The citizens of Bath are much concerned at an accident which has befallen the fine old tenor bell of the Abbey church (which weighs 38 cwt., and is about five feet in diameter at the base). The bell has long been celebrated for its rich, mellow tones; but soon after the ringers commenced practice on the day of the accident it gave forth an unusual sound, and upon careful examination, a crack, extending seven or eight inches from the bottom, was discovered. The bell in question was originally presented by Lady Hopton in the early part of the 17th century; but was recast in 1700. About seventy years later it was disabled, and to such an extent that it was feared remoulding would be necessary. The crown of the bell was unfortunately broken off, and the bell remained useless for some time. At length Mr. George Clark, a builder of the city, to save expense, undertook to refix the bell. Doubts were entertained as to the efficacy of his plans. Nevertheless, he accomplished his work, and he did it in this way. The crown being severed, holes were bored in the top of the bell, which was then suspended to the beam by iron bands; and so it has worked and remained ever since. There appear to have been originally (namely, in 1622) six bells. But by the assistance of friends and a rate on the city, they amounted to ten in

number in the year 1700. The following quaint inscriptions are on the bells:—

1. Bennet, Esq., Mayor, 1774.
2. Nicholas Beaker, George Clark, Wardens, 1774.
3. When yov Mee ring, I Sweetly sing. A.R. 1770.
4. God prosper the Church of England. A.R. 1770.
5. Prosperity to all our benefactors. A.R. 1770.
6. Pray Ring vs Trv. Wee will praise yov. A.R. 1770.
7. Peace and good neighbourhood. A.R. 1770.
8. James Smith, Samuel Ditcher, Wardens. 1770.
9. Thos. Gibbs, Mayor, Mr. William Clement, Minister, Anno Domini, 1770.
10. All yov of Bathe That Hear Mee Sovnd, Thank Lady Hoptons Hvndred Povnd.

ABRA. Rvdhall Cast vs all. 1700.

We may remark that Abraham Rudhall was a noted bellfounder of Gloucester, who brought the art to great perfection before the year 1684. Some of the most famous peals in the West of England were of the Rudhall make; besides many others in different parts of the kingdom.

#### Mauritius Railways.

The railways in the Mauritius are by no means in a flourishing condition. The sum required to pay the interest on the capital amounts to 60,000*l.*, and the amount to be paid annually as a sinking fund to 18,000*l.*, whilst the total net receipts have only reached 26,000*l.* This leaves an annual sum of 52,000*l.* to be made good by the colony, whose finances at present appear to be in anything but a flourishing condition.

#### Important Discovery.

The Americans believe they have done away with the process of puddling iron. The famous discovery is already in active operation at the Shoemaker Junia Works, at Pittsburg. The method consists in taking the melted pig-iron direct from the blast furnace, running it into a kind of large kettle, which will hold about five tons, from whence it is poured in a stream about a foot wide into a circular trough 12 inches wide and 10 inches deep, revolving on a radius of 7 feet or 14 feet diameter. Here it is mixed with pulverised iron ore (oxide of iron). The ore descends from a hopper into the revolving trough, and covers the melted metal as fast as it is poured in. The continuous revolutions of the trough produce alternate thin layers of melted metal and raw ore. When the trough is full, and before the metal is cool, it is broken up into slabs of suitable size for the heating furnace. This process, which consists in incorporating iron oxide with the melted pig-iron, yields, we are assured, malleable iron equal in quality to puddled bars.—*Scientific Review.*

#### Preparation of Lime.

The use of lime prepared in powder has been for some time extensive in France, and the advantages are considered to be very great. The subject has just been laid before the Paris Academy of Sciences, by M. H. de Villeneuve-Flayosc, and cannot fail to have great interest for the readers of **THE ARCHITECT.**

The success of works executed on the largest scale with this form of lime is regarded as placing the value of the method employed beyond all doubt, and therefore the details were laid before the Academy. The mode of operation was described in the following terms:—1. Slack the lime not by immersion in the minimum dose of water, but, on the contrary, sprinkling upon it all the water it will absorb, and continuing until the powder becomes pasty. 2. Heap up the lime, and let it remain for at least eight days: the longer it is left thus, the more complete will be the disaggregation of the lime. 3. Sift the slacked lime: the recently-formed lumps will be broken up by the sifting, while any old lumps must be broken down by means of exposure to the air, only sprinkling with water.

The powder obtained by this method is thoroughly slacked; it cannot become further disintegrated after being used, but becomes an integral part of the building.

The meshes of the wire sieves used in its preparation should not be more than  $\frac{1}{32}$  inch square; for the finest powder being most readily saturated by water, produces the best paste. 4. In order to preserve the lime in the state of powder, it should be kept in loose heaps under a shed, or elsewhere, completely protected from the rain; when compressed in any way, the carbonic acid in the air causes it to cake together: even in barrels there is danger of this effect being produced.

Lime prepared in the manner above described will keep good for years, as proved by experience.

The economy as regards the raw material, the diminution of trouble in the mixing, and the absence of all the inconveniences attending the ordinary slacking of hydraulic lime, have won for the powdered lime the approbation of the engineers and builders of Paris. This preparation of lime favours in an extraordinary manner the execution of great public works abroad; the contractors for the works of the Isthmus of Suez, and the engineers of the Algerian railways, are now regularly supplied with the powdered lime shipped from Marseilles.

Powdered lime promises to be of great value for agricultural purposes, as it contains no lumps of quicklime to lie in the soil, where it is moistened in an irregular manner, and must produce injurious effects.

#### Ebbw Vale.

It is intended to erect a new school-house at Ebbw Vale, in connection with the English denomination in that town.

#### New Hospital and Dispensary Competition, Rotherham.

About eighty designs have been prepared and submitted by architects in competition for this building, being answers to an advertisement that has appeared frequently in our pages. Some of the designs have come from a great distance and are very carefully got up. The walls of the Mechanics' Hall, the largest room in Rotherham, will be devoted to their exhibition. A sub-committee will meet on Thursday, to decide on what further steps shall be taken towards selecting the three premiated plans. It is to be hoped that they will see the advisability of calling in the aid of a professional adviser.

The proposed site lies to the south-east of the town, and occupies the summit of some rising ground overlooking Doncaster Gate. A more suitable place for the purpose could scarcely have been chosen, as it is near the town, and windward of the smoky district.

The ground from its contour and elevated position is dry and healthy. Considering the population of Rotherham, it is strange that it has remained for so many years without such a useful institution. At present all pauper cases of any importance have to be taken all the way to Sheffield, and this, too, in a place so liable to wholesale accidents amongst its factories and coal mines.

The new hospital, according to the present scheme, will contain only twenty-six beds. We presume that the committee contemplate future extension.

#### Statue of Lord Palmerston.

The statue of Lord Palmerston, in bronze, was cast last week by Messrs. Holbrook & Co., Chelsea. The figure is seven feet high, and weighs about one ton five cwt. It is in one casting, not having a single joint in it. To accomplish this, great care and skill were required in making the mould and running the metal. The late statue of Sir Robert Peel, that was placed for a short time in New Palace Yard, has contributed about ten cwt. of its metal to Lord Palmerston's statue.

It is some time since a vote was passed in the House of Commons for a statue of Lord Palmerston, to be erected in New Palace Yard. Several eminent sculptors were invited to send in designs. The committee appointed to select the best chose that of Mr. Woolner, who has undertaken to supply and erect the figure complete on its site. The casting and erection have been sublet to Messrs. Holbrook & Co., who have undertaken to have the figure finished and in place in May next.

The sculptor has represented Lord Palmerston in the act of addressing the House of Commons. One of the chief difficulties in the reproduction of large figures in metal is the necessity of casting them in one piece. If cast in several separate parts, the metal figure has frequently an appearance of stiffness, and often causes the delicacy and freedom of the artist's model to be lost. Great lifting power was required in handling the mould, which was about ten tons, including the metal in the figure.

#### The Louvre.

Two extra rooms have just been opened in the new Louvre in connection with the Renaissance sculpture galleries; one contains tombs and bas-reliefs of the Roman-Christian period and the other reproductions of the great Bruges chimney-piece, and of the tombs of the Dukes of Burgundy, now in the museum of the old Burgundian palace at Dijon. The Burgundian tombs were found in pieces in cellars and crypts several years since, but they are wonderfully perfect and form not merely interesting examples of Burgundian decorative composition, but specimens of the most magnificent sepulchral monuments in the world.

The whole of the Greek, Roman, Renaissance, and modern sculpture galleries have recently been restored, and the two latter much enlarged. The new rooms are at present only open to the public on Tuesdays and Fridays from 12 to 4 o'clock.

Visitors to the Louvre should also enquire for another special room, only open once a week, which contains a superb collection of drawings by the old masters.

#### Archæological Discoveries in Italy.

The Marquis de Gualterio, the Minister of the King of Italy, and to whom belongs the honour of inducing Victor Emmanuel to undertake the excavations at Herculaneum, has made a most interesting discovery on his own estates in the environs of Orvieto. He has found a number of specimens of Etruscan pottery of various forms, besides Greco-Roman ware—the latter of the same kind as the famous vase of Cannes, belonging to the Campana collection, and which was sold to a Russian for two thousand pounds. This pottery, which will create quite a sensation in the archaeological world, is remarkable for perfection of workmanship, elegance of form, and purity of design. The decorations of the vases are in composition, *stuc*, and in relief, and the subjects are derived from the Labours of Hercules. The chief specimens are two grand vases and a patera. The latter is intact, and shows great taste and beauty; the figures represent the struggle of Hercules with Nemean lion. The vases are not in such good preservation, but the most important parts have not suffered. One represents Jupiter and Alcmena, the other the combat between Hercules and the Queen of the Amazons. Amongst the relics is a fine vase with handles, decorated with well-modelled heads; it is of Greco-Roman origin.

In addition to these is a specimen which is believed to be unique of its kind. M. Gualterio has yet only found half of this specimen, which is decorated with figures of very good effect. There are two *quadrigæ* or chariots, representing, it is supposed, scenes of the Olympic games, called fêtes of Hercules; the other parts of this vase are being sought for with great care.

M. Gualterio has named the sepulchre in which these precious relics were found the Tomb of the Priest of Hercules. The collection has been carried to Florence, where the fortunate discoverer is occupied in classifying, studying, and having them reproduced by photography.

## General.

Mr. G. E. Street, R.A., has just received his diploma as Foreign Member of the Royal Academy of the Fine Arts at Vienna. This recognition of the claims and merits of English architecture in the person of one of our most representative architects, if we may be allowed the term, is a matter for congratulation. Mr. Street is one of the men who have helped to form the character of the art of the present day, and his work, though much of it is no doubt open to criticism, is yet always conscientious, and marked by science, learning, and taste. Its peculiarities must be, we should fancy, very strange in the eyes of a Viennese artistic body, and we are the more glad that its undoubted merits are thus recognised.



**Mission Church, Waterhouses.**—A mission church at Waterhouses, near Durham, has recently been erected from the designs of C. Hodgson Fowler, Esq., architect. The building is a simple parallelogram in plan externally, while internally it is divided into a nave with sanctuary having a vestry on the north side, and a porch for the school children on the south. The whole is under one roof, with the sanctuary marked by a lofty flèche, and buttresses below. The east window is a triplet under an enclosing arch, and the side windows are coupled lancets. The whole building is of fire-brick, with hollow walls, no stone being used except for cills and steps. The accommodation is for 200 in the nave, and the cost 530*l*.

During the morning service on Sunday, at the village church of Herringswell, Suffolk, the edifice was discovered to be on fire. The fire was occasioned by the heat of the iron piping, which ran from a stove through the thatched roof. The church was quite destroyed.

Messrs. Holbrook & Co. are now preparing to cast, in one piece, a colossal statue of Her Majesty the Queen, from the design of Mr. Wood. It will be 12 feet high from base of pedestal to top of crown, and will be cast in Florentine bronze. When completed it will be sent to Canada.

The Royal Academy wishes it to be made known to artists that the regulation requiring water-colour drawings to be 'framed close, without mounts,' has been rescinded, and that artists are at liberty to frame their drawings as they please. The caution against the use of excessively wide frames still holds good.

The Electric Field Telegraph is to be made use of for directing the movements of the troops at the Dover Volunteer Review on Easter Monday. This application of telegraphy to the conduct of warlike operations is of course not new, but it will be the first time that it has been made use of in the field on the occasion of a Volunteer Review.

The Church of St. James of Wardendown at Dover, now under restoration, contains a remarkable feature in the shape of an aisle on the south side of the nave, but of unusually great width, and at a lower level than the floor of the church. In this curious structure anciently sat the Courts of Chancery and Admiralty.

**Tunnelling under the Sea.**—A proposal has been made for uniting Ireland and Scotland by means of a railway tunnel. The entrance to the proposed tunnel on the Irish side is to be from a point about midway between Cusheden and Cushendall on the coast of Antrim, and, on the Scotch side, at Glenstrone, from whence it will run through the head of the Mull of Cantyre. The total length of the tunnel under water would be fourteen miles three furlongs, and it is said that the ground through which it would have to be made is exactly suited for tunnelling operations, and the sandstone for lining it can be had in any quantity on the Irish side. It is proposed to construct the tunnel for a single line only, the extreme depth being twenty-one feet, and the clear width at the level of the rails fifteen feet. It is proposed, however, to lay down three lines of rails to accommodate wide and narrow gauge carriages. The gradient at the entrance to the tunnel on the Irish side would be one in sixty for about five miles; it would then fall to one in eighty-two for about half that distance, and to one in seven hundred and seventy-three for about five miles in the centre of the tunnel under the water, rising from that to one in two hundred and seventy-two, then to one in one hundred and thirteen, then to one in sixty for about the same distance as on the Irish side, which continues to the entrance of the tunnel on the Scotch side. The estimated time that would be occupied in completing the tunnel is, allowing for all contingencies, under six years, and the cost under four and a quarter millions. To pay a dividend of five per cent. the weekly earnings must be forty-two pounds per mile, and an estimate is appended to show that the gross earnings would be largely in excess of this amount, and that the mineral resources of the land in the immediate vicinity of the Irish end of the tunnel would be immensely developed.

**The Thames at Wapping.**—A public meeting was held on Friday evening March 19 at the Turk's Head, Union-stairs, Wapping, to consider the propriety of petitioning Parliament to provide an embankment to prevent the frequent overflowings of the Thames into the property in the district. Mr. W. Creighton, who occupied the chair, in opening the proceedings, said that at present, whenever there was a high tide, the river overflowed, entered the houses, and but a very short time ago the whole of the inhabitants of one street were compelled to remove from their tenements. When the water subsided, the floors and furniture of the inhabitants were coated with mud, which emitted a most disgusting odour. Taking these facts into consideration, he thought it was the duty of the inhabitants of the district to stir in the matter. Mr. Brown, landlord of the Turk's Head, said that he had had his cellar full of water four times in three weeks, and on the last occasion it was full for two days. A boat was then plying for hire along the main street. In Plough Alley, a court directly opposite, the water was 7 ft. deep, and the people living in that court had to sit for about ten hours till it subsided, their beds being saturated, and their furniture floating about in all directions. A number of other statements were then made by sufferers. A Mr. Andrews declared that when the street was last flooded he had to drag a woman in at the first storey of a house in Plough Alley to save her from drowning. Mr. Whitfield, living in the High Street, said he often had three feet of water and mud in his shop. A Mr. Pesman, whose house happens to be slightly below the level, said he had nine feet of water in his house a few weeks ago, and that on this occasion the water was level with the top of the counter of the Dundee Arms, a publichouse on the higher side of the street. A committee having been formed to collect information, the proceedings were adjourned.

**The New Central Branch Synagogue.**—On Thursday, the 18th inst., just forty years after the dedication of a neighbouring structure to the services of the Jewish religion, the first stone of a building henceforth to be known as the Central Branch Synagogue was laid by Baron Lionel de Rothschild. The site is a piece of ground reaching from Great Portland Street westward to Charlotte Street; and this will be occupied by a

Moresque edifice of stately elevation and ample interior space, the ground area measuring 70 by 60 feet, and the galleries, according to the plans, giving a considerable addition of space. The architect is Mr. N. Solomon Joseph. The cost of the building will be 24,000*l*.

**New Window at the Abbey Church, Tewkesbury.**—A fine painted window has been inserted in the west end of the church, and is, we understand, intended as a memorial to the late Mr. John Terrett and his sister, Miss Mary Terrett, whose beneficence to the public charities and institutions of the town is well known. The subject of the painting of the window is 'The Adoration of the Magi,' illustrating the text 'They brought unto him gifts of gold, frankincense, and myrrh.' The window has been executed by Messrs. Heaton and Co., of Garrick Street, London.

**Earthquake-proof Architecture.**—The recent earthquakes on the Pacific coast have necessitated the adoption of some new style of building in that section of the country. Mere brick shells will not stand many heavy land shocks, and the architects of San Francisco are now busy over earthquake-proof plans of architecture. The last severe earthquake in that city cracked a large number of brick walls, which have had to be braced together with iron rods to make them in any way safe. A very little heavier shock would have tumbled them in ruins. The fact that these sensations may come at any time has somewhat shaken the faith of the people in the security of their brick houses. One of the new plans proposed is to build a compact wooden frame structure, and surround it with brick walls. The frame would secure it against falling, and the walls would render it fireproof. A large publishing-house in San Francisco is soon to erect a store upon this plan. Another method proposed is to build thick walls with iron girders inserted in them, and riveted at the angles. There has been considerable discussion among builders on this matter, and a new field is open for the ingenuity of architects. Anybody who will guarantee to put up a house that will stand an ordinary earthquake without damage, whether it be built of wood, stone, iron, paper, or rubber, can make his fortune on the Pacific coast.—*New York Times*.

**The Edinburgh Museum.**—The Lord Provost of Edinburgh has received intimation to the effect that the Government are prepared to insert in the Estimates for the ensuing year a sum of 10,000*l*. towards the extension of the Museum of Science and Art, on the understanding that the ultimate cost will not exceed 53,335*l*. 17*s*. 2*d*., and also under certain conditions regard to properties in the neighbourhood of the building.

On Saturday last (March 20) the foundation stone of a new Church was laid at Cheetham Hill. The Architects are Messrs. Paley and Austin, Lancaster. The cost is estimated at 10,000*l*.

It is proposed to raise a monument to the memory of the late Lord Gough. One proposition is that it shall be placed in St. Patrick's Cathedral, Dublin; but another, and the more popular of the two, is that it shall be placed in one of the principal thoroughfares of that city. A large sum will be easily raised for either purpose.

The estimates of the cost of building the new Opera House at Paris amounted to 16 millions of francs. More than double that sum has been already expended, and it is now confessed that the total come up to 48 millions before the work is completed.

**Rome.**—The Chevalier Ross, Imperial director of the excavations on the Palatine, has discovered some remnants of statues in a corridor leading to a staircase which was filled up with rubbish, probably fallen in or thrown in from a *lucernarium* above. The principal piece is a mutilated figure of a child, in basalt, at first supposed to be an infant Hercules, but which seems to have formed part of a group. The torso is very fine, but part of the head and portions of the arms and legs are wanting. This statue seems to be of the Augustine period. The other pieces are four detached heads of statues of merely decorative style, but of which two have been decidedly identified as portraits of Drusus and Agrippina. Photographs of the subjects, with a report of the mode and locality of their discovery, have been forwarded to the Emperor Napoleon.

**The Tunnel through Mont Cenis.**—Steady progress continues to be made with the works of the great tunnel through Mont Cenis. At the end of last month 9,386 metres had been completed, viz., 5,474 metres at the south end, and 3,912 at the north. The number of metres still to be excavated is 2,835. The opening of the tunnel through its entire length may be expected to take place by the month of July, 1871, or perhaps earlier, owing to the improvements which are constantly taking place in the manner of working.

The Ateliers of mosaic attached to the Vatican at Rome have taken fire, in consequence of the negligence of some of the workmen in leaving rosin and mastic near the stove. The flames soon spread, and destroyed all the beautiful mosaics preparing for St. Paul's and many other churches, which were in an unfinished state. The fire was happily extinguished before reaching the library or museum, but the damage is estimated at 80,000 scudi.

**The Sewage of Kingston.**—Mr. Rawlinson, the Government Inspector, opened an inquiry on Monday last at Kingston, the corporation of that town having petitioned the Home Secretary for power, under the Sewage Utilisation Act, to acquire about 160 acres of land situate at Ham, facing the river by Teddington Lock, on which to distribute by irrigation the sewage of the borough. The strongest possible opposition has been raised to the scheme by the local boards of Ham, Teddington, and Twickenham, as well as by the Orleans family, and other influential residents in the neighbourhood. So many technical objections were advanced upon the mode of procedure adopted, that the Inspector adjourned the inquiry for some days to consider the questions raised.

#### MEETINGS OF LEARNED SOCIETIES.

ARCHITECTURAL ASSOCIATION.—Friday, April 2, at 8 P.M. Members' Soirée.  
SOCIETY OF ARTS.—Wednesday, March 31, at 8 P.M.  
LONDON INSTITUTION.—Thursday, April 1, at 6 P.M. Professor Bentley, on Plan's.

# The Architect.

## ART AND ARCHITECTURE IN PARLIAMENT.



ASTER has come and gone, the brief Parliamentary holiday is over, and our legislature is about to recommence the work of the Session with little further prospect of break or pause till the advent of the shooting season brings its proceedings to a close. And the present seems an appropriate time to ask the question, Will the arts, the public buildings, the public works, and the art-teaching of the country be in any degree touched upon? will they be helped or hindered, aided or neglected? and shall we, at the close of the Session, be in any respect in a better position than at the present moment?

It is not to be denied that a Government professing and actually practising financial reform is not always, perhaps not often, in a position to make large grants of public money for artistic works. But still we must not forget that it was when Mr. Gladstone himself held the purse-strings that the vote for restoring the Chapter House at Westminster was obtained, and that even an economical Chancellor of the Exchequer has, after all, the spending of a good many millions of money in the year; so if works are a necessity, it may be that the funds will be forthcoming.

But there is a function of Government quite different from the finding of money. Undertakings of all sorts have to be, or at least ought to be, directed, controlled, sanctioned, watched, and governed. The actual fact ordinarily being that they come to Parliament for powers to do something or go somewhere; and having submitted to conditions, without which parliamentary consent could not have been obtained, they secure their powers, and exercise them with a very convenient disregard of the conditions annexed; and that, in fact, little or no control could be or is exercised by that department of the Government with which the undertaking is supposed to have to do.

Still, we have departments, and they have some work to do. There is a First Commissioner of Works, and it is a matter for congratulation that this post is filled by a gentleman and a traveller who has given much attention to matters of fine art and architecture. It is also gratifying that Mr. Layard has shown by his recent appointment of Mr. Fergusson that he is not averse to secure for his department the services and the counsels of an eminent architect.

Whatever chance there may be of doing some good with the Government, we are not aware that there is either more or less chance than there has been of useful action being taken by the House of Commons. That body reflects the prejudices and the deficiencies of the English nation pretty faithfully, and the idea that art is not practical, and that no good can come of it, is pretty deeply rooted in the breast of the average Briton. Still, let us hope for the best, knowing that we are not altogether without members who are alive to the claims of art and artists.

Of the subjects that will claim parliamentary notice, the one most pregnant with importance is probably hardly known even to the majority of those interested in its operation. Lord Elcho, as is well known, has procured the nomination of a committee, containing several well-known and trustworthy names, to consider the question of the Villiers Street viaduct, which, our readers will remember, was examined with some care in a recent number of THE ARCHITECT. Since it appeared that through inattention or by surprise a scheme had received parliamentary sanction which ought really never to have obtained it, nothing was more natural than that the terms of the reference to the committee, in addition to the investigation of what has gone wrong this time, should include a few words as to the possibility of preventing the same sort of thing from happening again; and here, if we mistake not, lies the most important part of the duty of this committee.

Lord Elcho, there can be no doubt, was fully aware what his proposal implied, and we believe that the true solution of the question, how best to regulate public works in the Metropolis for the future, will, as was suggested in the House when the committee was agreed to, be found in the appointment of a small permanent board of advice, to which board should be submitted all schemes affecting the

Metropolis coming before parliamentary committees, and all measures of Her Majesty's Board of Works, or the Metropolitan Board which promise to affect London public works. Such a board ought to consist of men thoroughly conversant with Architecture, Art, Science, and Public Works; that is to say, of professional men of standing. Its members ought in all probability to be paid for this work, and its recommendations ought to have the greatest possible weight with the First Commissioner of Works and with committees of the House.

It would in all probability be desirable that the members of the consulting board thus suggested should be nominated by the leading artistic and technical societies. Thus, the Royal Institute of British Architects, the Institution of Civil Engineers, the Society of Arts, and, perhaps, the Royal Academy, might each, with great propriety, be asked to name one of their own body. That rising and influential society, the Institution of Surveyors, might possibly claim to send an additional member; but if so, we hold that one of the purely art societies, such as the Arundel, or the Graphic, might with almost equal propriety make the same claim; and the one might perhaps be set against the other.

The advisers thus recommended might with great advantage meet weekly, and it is very certain that even if there were no express understanding that all proposed Metropolitan works undertaken or sanctioned by Government should be submitted to them, at least the actual result would be that the plans of such works would come under their eye:—no minister having such a council would willingly take the responsibility of neglecting to take its advice. Had such a body of men existed at the time, it would never have been permitted the railways to span the approach to London Bridge with the hideous girder there visible, or to blot out so much of the fine view of St. Paul's from Fleet Street as is cut away by the ornamented but not ornamental viaduct at that point; nor would it have been left to the action of a single member accidentally made aware of what was going on to prevent such a barbarity as the intended demolition of the pedestal of King Charles's statue at Whitehall—a step which was not only contemplated, but actually arranged for under a former administration.

We sincerely trust that Lord Elcho will secure a hearty recognition from his committee of the importance of establishing permanent and known experts as a kind of Committee of Vigilance to keep the Government well advised; and this being so, we trust that no difference of opinion will arise as to the other branch of the reference to them, but that they will unite in recommending the abandonment of that great blundering eyesore, the viaduct.

The large space still unappropriated at this portion of the Thames Embankment invites the notice of the committee, and we believe that a scheme for the suitable occupation of this site by a large public building such as would receive the support of the present Government will not have to be long sought when the time comes.

The next great question connected with public works, which cannot fail to be early discussed, is that all-important one of the site of the Law Courts. Mr. Gregory has given notice of a motion on the subject, to come on during this month; and if the discussion of the subject in this and other journals, and by the Society of Arts' committee, has produced its due effect on the public mind, there will no doubt be a reference of the whole scheme to a parliamentary committee—possibly to that of Lord Elcho—and legislation in accordance with the opinion arrived at in the course of the inquiry may be expected. We hold it to be of great importance that this subject should be fully and dispassionately considered, and we strongly urge all who have influence to promote that consideration by sending in petitions. All the leading professional societies ought to petition for a full, a complete, and a decisive investigation of the whole question. The legal societies, as well as the architectural ones, are interested in the best possible site being chosen; and the very fact that many able and thoroughly disinterested men have taken up the Embankment site ought to convince even those who most strenuously advocate the Carey Street site that an inquiry will not be out of place.

Lord Redesdale, it is understood, will bring forward a measure in the Lords relative to Artistic Copyright. At present there can be no doubt that both law and practice are very unequal, and the right to reap the fruits either of a scientific invention or a literary work is much better defined and secured than the analogous copyright which an artist, especially if he be an architect, is supposed to possess, but hardly does hold in a tangible form. The subject is a very wide and a difficult one, but there can be no doubt that all these classes of inventors—he who creates a work of art as much as he whose creation

is literary or scientific—deserve to stand on the same footing, whatever that footing may be.

The 'Science and Art Department,' with its large and incomplete undertakings, its extensive museum, and its system of art-education, may or may not provoke a little discussion. Probably not: but there can be no doubt that while a useful, and, let us add, liberal, expenditure of public money has been secured for this department, mainly through the indefatigable exertions and the iron will of Mr. Cole, there are under that department branches which languish as well as branches which flourish.

The art-education of the country is not in the condition in which we should like to see it, and is not sufficiently elevated or sufficiently progressive to render to art, and to our manufactures, all the services which might, we think, fairly be required of it; at least, such is the impression we gather from the actual results whenever we have been able to examine them, and such is the opinion of many impartial judges. If the teaching of art-students be not the very best that can be devised alike as to the methods pursued, the objects studied, and the instructors employed, the work of the department must fail of its results, and we believe that in a considerable number of art-schools there is much room for improvement in one or in all of these respects.

The dispersion throughout the country of specimens of art-workmanship and design, in the various loan-collections cannot fail to do good, and this part of the work of the department is being well done. Perhaps the reformed Parliament could not do a greater service than to supplement this practice by the converse, and remove wholesale the most ambitious of the examples of bad art which so constantly meet the eye in travelling through the country and the metropolis. In London, for instance, we should like to advocate a clean sweep of all the public statues and all the drinking fountains. It is quite true there are one or two statues and one or two fountains not quite without merit, and these might possibly be saved, but it would be an immense boon to be spared the others. In the country, we should like to destroy a majority of the cemetery chapels, and if it were not a kind of demi-semi-treason, to annihilate all the Albert memorials. To make of England in these respects a *tabula rasa*, and then start afresh with good taste and good judgment, is unhappily as impossible as to start our whole railway system afresh, with some definite plan to guide us, and some recognised principles as to competing lines; but both ideas are pleasing fictions enough to contemplate. Wren had such a chance after the fire of London; but his was a solitary opportunity, such as, we trust, will never occur again.

Among matters which we should like to hope might be subjects for legislation, is a subject nearly allied to architecture. We allude to the preservation of ancient monuments, ruins, works of art, and historic remains. Within the last few days two cases have come to light of famous and very ancient remains being entirely destroyed for the sake of stone or lime. Every such monument lost is a national loss, and there can be little doubt that a kind of special protection ought to be extended to such remains as are of great value either to history, archaeology, or architecture. Private enterprise, it is true, does much to replace the care bestowed upon such monuments in other countries by their governments; but private enterprise is fitful and uncertain, and we should like to see the invaluable and decaying memorials of past days safe from the caprice, the neglect, and the wilful dilapidations of ignorant or perverse owners or occupiers.

Other matters will no doubt arise, and will be duly chronicled in our columns as the Parliamentary session goes on; but nothing can be likely to occur of more general importance than Lord Elcho's Committee, taking into account its possible scope, and the latent capacity for useful development possessed by the subject it has to investigate. We are sanguine that good will come out of it, and shall anxiously watch for the fulfilment of our expectations.

### OUR RAMBLER

OVER THE HOLBORN VALLEY.

A LITTLE thing will collect a crowd in London—the appearance of two cats on a house top, approaching one another with howls of angry menace, the false step of a cab horse, the mere fact of a person's standing still and looking fixedly in one direction. It was thus, one cold day a week or two since, that a little mob began to agglomerate on the new and sprucely paved island that has recently been thrown up opposite to Hatton Garden.

There was little enough to be seen. Two sturdy navigators, each armed with one of those long narrow pickaxes which are peculiar to the paviers of London, were endeavouring to open an iron door in

the pavement. It was a roughened slab of iron, over which you might have walked a score of times without observing that you trod on anything but the flagging. On inspection, however, you became aware of the presence of a gigantic keyhole. The navvies were unprovided with a key, and when one of them struck the plug intended to guide the pipe of that implement, it vibrated like a harp string. He inserted the end of his pick, and endeavoured to 'prize' up the heavy trap, while his companion stood ready to thrust his own instrument into the aperture as soon as the door began to rise. Then the end of the pick broke short off. The usual variety of spectators halted around. There was the selfish, pushing man, who usually comes to the fore, and makes his way through life chiefly in virtue of his negative qualification—entire absence of delicacy. He is mostly stout and robust, and thrusts himself before his betters, or even tramples on their toes, just because he wants to see what is going on. There was the officious, somewhat anxious man, a lean counterpoise to the other, (who is generally stolidly silent), with his suggestion that a pebble should be put into the crack. There was the satiric, or sneering man, who recommended the unasked counsellor to do the kind office by means of his umbrella. There was the openly jocular person, who improved upon this hint by suggesting the insertion of a finger or a toe. Amid all this friendly counsel, blended with one or two expressions of a rather strong vernacular idiom from the operatives, up came the door. As it was fixed at right angles to the pavement by a convenient catch, it became evident that some one had given a good deal of thoughtful attention even to so simple a subject as a trap door.

For, as the flap rose, a grating took its place. It was not merely a grating under the flap, but there were cams or projections on the hinges, by the movement of which the grating rose to occupy the very space which the solid shutter had previously filled. The matter was simple enough—trivial, indeed, in the original sense of the Latin word—but it deserves notice as an instance of that precaution to which, in a crowded metropolis like London, many a casual passenger may be indebted for safety in limb, if not in life. The fall of two or three inches from the level of the pavement to that which, without this little mechanical arrangement, would have been that of the grating, might have thrown down many a feeble or heedless pedestrian. As it is, the solid door may stand open for purposes of ventilation or of light, and yet no possible inconvenience can be caused to the traffic of the footway.

The door having been raised in this fashion, the grating followed. A man with a lantern descended into the aperture, down a steep, narrow, stone staircase. Two or three persons followed, and our Rambler joined the party.

Reverting for a moment to the group above, who only peeped down when the grating was re-closed over the last who descended, let us recall what else met the eye. We have referred to the commodious 'island,' in the centre of which is a handsome lamp-post. Directly to the north of this point trends the street which runs through the site of the garden of Sir Christopher Hatton, yet commemorated by his name. At an angle of 45 degrees, or thereabouts, dips down towards the New Meat Market, a wide, new, well-paved road, laid out at a regular and practicable gradient of 1 in 45. To the south, Shoe Lane seems to blush, in unwholesome hues, at its naked narrowness. St. Andrew's, Holborn, shows more of its exterior than it has long been accustomed to do, and the demolition of some of the former line of houses shows a building, opposite the church door, that looks as if it must have been erected for a parsonage, in days when green glebe surrounded the churchyard, and when the parson's neat garden was shaded by lofty elms. Such houses are never built in streets, except it be in the picturesque and broken street of a country town.

To the east runs a long, level, open roadway—open as yet, on either side—over which is commanded a noble view of the finest classical building in England, some say in the world; in which, over an interior rather suited for Pagan than for Protestant rite, swells the magic dome of St. Paul's.

In a few years, when the row of stately houses which has already been commenced shall have lined both sides of the level and gently curving thoroughfare, few of those who rattle over its surface will be aware of how much cost and care, and long struggle with all sorts of opposition, has been bestowed on the spot. Probably there is no hill in the world which has been the scene of so much stone-breaking, knee-breaking, and heart-breaking, as Holborn Hill. From the narrow and lofty portal which was adorned by the grim effigy of the Saracen's Head, the Western coaches, half a century ago, used to issue, and after a brief and somewhat perilous descent commence their day's journey by a slow drag up that rise of 1 in 15:—1 in 13 it is said to have been at one part. In no place has the roadmaker been so driven to his wit's end. Pitching of all sorts has been tried there from time to time—small granite sets, fixed so as to give a series of very short steps, like the teeth of an enormous saw, being at one time in favour. Granite, however, soon turned to mud beneath the constant grinding traffic of Holborn Hill, and from twenty to thirty minutes' time was lost by every omnibus that carried its heavy load of passengers from the West-end into the City, or back again, by the slow and painful ascent; albeit the drivers had recourse to the skid, and rattled gaily down to the bottom, arriving in either direction.

What has been designed and is now in course of accomplishment to obviate these evils, is the roadway known as the Holborn Viaduct, and carried on a substructure of brickwork from a point near Hatton



Garden to the top of what was Snow Hill. With this undertaking, which will carry the east and west traffic at a dead level, had necessarily to be combined the means of descending from the level of Holborn to that of Farringdon Street, so as to accommodate the traffic which, coming from the west or east, turns at this point north or south; and though the viaduct is the most conspicuous, and has no doubt been the most important part of the scheme, it could have been of little use apart from the system of new roads, to some of which allusion has already been made.

If you ramble along the narrow footway, which, confined between two board fences, leads along the foot of the nearly completed Viaduct, you become more aware of the magnitude of the work than by walking over the level surface. You see arch rising above arch, as the ground rapidly dips. You see the face of the wrought-iron girder bridge, that spans the roadway of Shoe Lane, but allows for the introduction of a new pair of lasts, or of a roadway double the present 14 feet width. You come upon the broad thoroughfare of Farringdon Street, and admire the noble bridge, of which we have a word or two to say. Ascending towards the corner of Newgate Street, you pass a curiously complicated structure, of iron and of brick, by which the subways and the main roadway of the Viaduct are carried over the burrowing channel occupied by the Metropolitan, or the London, Chatham, and Dover Railway. The grim ashlar quoins of Newgate, and two of Sir Christopher Wren's fairy spires, soaring in the distance, close the prospect to the east.

When our Rambler had forsaken the light of day—for on the occasion of his ramble it was clear daylight in London, purchased at the cost of a keen and sleety north wind—he found himself in a place more resembling the crypt of a cathedral than anything else that suggested itself to his mind. A semicircular vault, of six feet radius, springing at some three feet from the floor, gave admission to radiating or converging arches, of similar dimensions, which cut into one another with sharp and well-defined groins. This vestibule, so to speak, lay under the new pavement about the island above described, and one long line of vaulting, which was illumined by jet after jet of gas, as the lantern-bearer sped down its course, ran under the new street down to the Market and the Railway Station.

The line of this wide and lofty archway gave admission, on either side of the Viaduct, to a subway of a different construction, which—forming as it does one of the main features of this carefully-planned work—will be known to the passengers over the completed road only by the negative evidence that they will never see any part of this 1,000 feet of street broken up, after our usual London fashion, for the gratification of the conflicting authorities who reign over gas-pipes and water-supplies, paving and sewerage.

The subway is a passage or channel, some 7 feet wide, along each face of the Viaduct. The level floor is paved with stout York flagging; and iron stanchions, built into the sides, project so as to afford support to the mains of the New River Water Company, the City Gas Company, and the Great Central Gas Company, and to the wires of the Electric Telegraph. The branch pipes for the supply of each house, of the street lamps, and of the hydrants are all readily accessible in this convenient subway, and any leakage or fault in the mains is capable of immediate detection and repair. Ventilation is ensured both by pipes passing up through the lamp-posts and by flues running through the party walls of the houses, terminating, by independent apertures, in the top of the chimney stacks.

Below the level floor of the main length of subway, the ground level dips rapidly, so that a lower storey of subway becomes more and more lofty as we descend toward the Farringdon Street Bridge. This storey also is flagged, but the flags only occupy one side of the width, like the towing path of a canal; while the open sewer which provides for the drainage of the houses that skirt the Viaduct runs down the sharp pitch. This sewer shares with all the London drains the remarkable quality of periodicity in activity. Day after day throughout the week, precise to a quarter of an hour, every London sewer begins to rise at its own proper period—varying according to the more or less humble character of the locality and the habits of the dwellers. As domestic life becomes brisk, and personal ablutions, cleansing of floors and steps, washing of china, and all other family proceedings that terminate in the sink, go briskly forward, the subterranean tide rises, attains its maximum flood, and then declines, differing from the tidal movement of the Thames itself in being diurnal instead of semi-diurnal, and in being fixed in its daily period instead of following the phases of the moon.

Thus, on one visit to the subway, the Rambler found the open sewer to be all but dry; and when he traced it to the spot where it disappeared in darkness, he heard the rapid, sullen, mysterious rush of the subterranean waters of the Fleet. This was about 2 P.M. On a former visit, about 11 A.M., the little stream was in full activity—a dark brown current, not offensive to the nostrils (it is when sewage is stagnant that it begins to putrefy), running very briskly down its channel, and leaping in its descent to the great Cloaca beneath with a dash that drowned the hoarser murmurs of the imprisoned and polluted stream.

Down pipes from the street gullies into this lateral sewer drain the upper roadway, and a swinging flap allows everything that can enter the orifice at top to fall freely into the sewer. The impetus acquired by a brick-bat, for instance, in its descent, throws open this simple trap, and the obstacle, if not swept away at once by the flow, can be readily removed by the inspector.

Our Rambler dwelt with the more interest upon this portion of the works from the sense of the great care and wise forethought bestowed upon the structure. Expense, and what is worse than expense, constant worry and stoppage of traffic, will be obviated by works which must always remain concealed from the great mass of those who derive daily benefit from the skill which designed them.

The lighting of this subway is due to an American inventor, whose glazed lights Mr. Haywood found in use in the pavements of New York. Hyatt's patent illuminators are iron plates, seven feet by three feet in area, full of small globular lenses or pieces of glass. They form an almost unperceived portion of the pavement, are as durable as the flags themselves, and, placed thirty-five feet apart, give a full illumination to the upper subway.

Thus far the Rambler has endeavoured to give an idea of the general structure of the Viaduct. The three bridges which form a part of it remain to be described. It is also to be borne in mind that between the subways lies a range of commodious vaults, accessible by a central roadway or 'jack arch,' into which carts can enter from the intersecting streets at the level of the original surface of the ground.

The railway is crossed by a substantial brick arch. But as the rise of this structure would interfere with the course of the subway, a wrought iron trunk of an ingenious construction (which it would occupy too much time here to describe) is carried on either side of the central road, and the several mains are laid side by side through this chamber, instead of being vertically disposed as through the remainder of the subway.

The thirty feet span crossed by the wrought iron girders of the Shoe Lane bridge, does not call for any especial notice; but the three-arched bridge, of granite and cast iron, that spans Farringdon Street, will be one of the most notable, and, indeed, one of the finest, engineering works in London.

The central arch of this bridge supports a platform, eighty feet on the square span, or ninety-six feet measured on the skew, the angle at which the upper and the under street cross being such as to allow of the introduction of the hexagonal form for the piers and quoins of the abutments, with great success. Below, the width over-arched is sixty-six feet from centre to centre of the piers, giving a total skew span in these arches of 117 feet.

Twelve piers of polished red granite support the girders of the central arch, and the smaller ones which spring over the footways. The pedestals of these piers are fine hexagonal blocks of grey Cornish granite. On each of them stands a moulded base of black Guernsey granite. The red columns, seven feet six inches high, are sunk with a double curve on each hexagonal face, the effect being to give at once richness of detail and an increased idea of solidity to the piers. A capital of grey granite will be ornamented by a foliation in bronze; and a low blocking piece of the same polished red stone (from the Ross of Mull) as the body of the squat column, completes this beautiful part of the structure. For the foundation of these piers the engineer had to go down about thirty feet to the London clay, sinking a trench long enough to take the whole of the six piers on either side, which was filled in with six feet of Portland cement concrete, on which was brickwork composed of hard paviers. The bricks generally used for fine work are made from the gault, at Barham, and the backing consists of Medway stocks—very rough, but very hard.

The girders which spring from these piers, and which will act as true arches, are unusually sharp and beautiful castings, from Woodside Foundry. The rise of the central arch is about  $\frac{1}{12}$  of the span. The foliated spandrels are cast so as to give strength to the girder, circular apertures being left for the insertion of the merely ornamental work. The City arms, and the pious dragons, which, as if in denial of all their mythical kindred, are ever appealing for celestial guidance in the legend *Domine dirige nos*, have been cast in circular pierced medallions; and the rough and ready expedient of running three saw kerfs through the circular rim of the casting when red hot has allowed of cooling without any fracture or distortion.

A very interesting feature of this bridge is, that each rib consists of a pair of castings. The subject is one which has occupied much thought. It is not altogether a new application of material; for in point of fact, the hollow box girder, which is now rarely used, is somewhat similar in principle. Mr. Fowler has made use of coupled wrought girders in the bridge over the Thames at Battersea, but in the enlargement of that bridge single girders have been employed, and much greater freedom from vibration may be remarked on this part of the bridge, although the headway sacrificed is less than on the older portion. It may be justly objected to Mr. Haywood's plan that the second vertical web is a weight of iron that does not add to structural strength. On the other hand each casting is more manageable, and is likely to be more sound, than one of nearly double the weight, and the pictorial effect promises to be very superior. A complex but well-considered structure of cross girders and corrugated plates supports the roadway over the main arches, and will form a remarkable and entirely novel soffit. Of the 800 tons of iron which compose the bridge, some 600 are now on the ground, and the opening of the Viaduct depends on the completion of this portion of the work.

Four towers, or sheltered staircases, one at each corner of the abutments, give access from the pathway below to that above. The design of these buildings, so novel to London, the decoration of the doorways and windows, the foliated iron work of the gates, all evince

a union of the skill of the engineer with that of the architect, of which the city of London may be justly proud.

On the piers of the parapet, over the granite columns, will be placed statues of London worthies. Fitz Alwyn, the first historic Mayor;—the sturdy Walworth, whose dagger, loyally bestowed upon Wat Tyler, still gleams in the City arms (according to some legends—others make it the sword of St. Paul); the semi-fabulous Whittington, the host of three kings, with a grateful remembrance of the cat that proved to him a veritable puss in boots, and Sir Hugh Middleton, are to look down on the two crossing currents of the mighty traffic that will flow by, but no longer choke, this long-obstructed site—menacing the heedless youth who is on his downward course to sink into the dangerous classes, and encouraging the industrious apprentice with the best lesson of history, the success of the patient toil of the worthies of the past.

It is not the function of the 'Rambler' to pay compliments. It is certainly neither his wish nor his habit to pay indiscriminate or exaggerated compliments. But he has rambled over many fine works, and many noble buildings, since he stood by the side of Robert Stephenson on the footboard of the first locomotive that ever blew its whistle south of Lancashire. In the several qualities of magnitude and imposing proportion, of peril and difficulty overcome, and of architectural excellence and ornament, many works more remarkable than the Holborn Valley Viaduct recur to the memory. The gigantic (and hideous) girders that cross the skew roadway at London Bridge, the large iron bridges at Battersea, the foundations of several of the recent River Bridges, the Thames Tunnel, portions of the Metropolitan Railway, the turrets and pinnacles that pierce the sky at Westminster, each may deserve the place of honour in some particular respect.

But for the painstaking application of the resources of modern skill to augment the permanent comfort of the inhabitants of London, whether the hundreds who will be affected as residents, or the millions who will be served as passengers; for study, of which the results will never be exposed to daylight; and for the happy combination of wise and large structural economy, the function of the engineer, with pictorial beauty and architectural excellence, the Holborn Valley Viaduct ranks second to no work which the Metropolis can boast as the production of the present century.

### MODERN MEDIÆVALISM.

WE saw the other day, in a shop-window, a photograph of some gentleman of the present day, the 'author of' something or other, attired in the precise costume of John Milton. He looked very queer. We could not reconcile him at all to our notion of a person of the latter part of the 19th century. And this set us thinking. If the costume of two centuries back appear so opposed to our modern notions, how can we expect to make the architecture of a still more remote past fit in to anything like a natural place in our system of life? If we may not dress as people did in the middle ages, or print like them, or speak like them, or write or fight like them, why should we build like them? It will be answered, Because their mode of building was better and handsomer than ours. Admitted. But so was the architecture of Egypt and Greece; so was that of India and of the Arab caliphs. If there be an irreconcilable difference between the ways of thought and the whole system of life, as these existed in the middle ages, and as they exist at the present day, how can the architecture of the one age be employed without untruthfulness, without a manifest shock to all our feelings, in the other? Compare with each other groups of things which were made in any one of the whole-hearted art-periods, be they books or pictures, columns or arches, swords or breastplates, doors or windows, and you will find that they all came from the same workshop, and have, so to speak, the same maker's name on them; however different in purpose or in form, there is a secret and indefinable harmony which links them all together and makes them one. They are like objects seen under the same daylight, and which the sun harmonises; while the grouping together of the arts of different ages is as if each object in a picture were seen from a different point of view, had a different intensity of light, and a different angle of shadow.

During a period which has now extended over three hundred years, civilisation has been drifting away from the system of art as it was practised in the middle ages. We have adopted the Roman type in preference to the black letter, the running Italian hand instead of the cramped vertical manuscript of the fifteenth and earlier centuries; our Saxon speech has become ampler and more balanced, largely influenced by Roman models; our furniture and our houses, if not classical, are at least of a modern type which has no affinity for mediæval art. How, then, can we roll back the whole tide of our civilisation, or make one of the arts to flow in a dry bed from which all the others have departed?

We think this question as to whether we should build archaically, in a style which died a natural death, at an advanced age, three or four hundred years ago—but which some amongst us wish to resuscitate, rejuvenate, and make beautiful for ever—is one that, to any rational mind unwarping by the exclusive study and contemplation of models possessing many fascinations, is solved when it is fairly stated. Amongst the many lessons which we may learn from the study of the great works of our forefathers, let us not overlook this one—that all true art is faithful to the feelings, the wants, the knowledge, and the life of its own day.

The Exhibition of Paintings in connection with the Bristol Fine Arts Academy is one of the largest and best they have held. Some of the pictures are of a very high order, and the entire display is calculated to interest and delight.

### ENGLAND IN 1669:

#### A RETROSPECTIVE REVIEW OF THE TRAVELS OF COSMO III

##### PART I.

TWO hundred years ago there was as much unhappiness in the Grand Duke's Palace in Florence as could possibly be found in the humblest house in the City. Cosmo, the eldest son of the Grand Duke (whose marriage also was unhappy), was married, in 1661, to a daughter of the Duke of Orleans, who had grown up with the expectation of one day becoming Queen of France; but when this hope was overthrown by the marriage of Louis XIV., she was compelled to accept the Prince of Florence. 'What is marriage forced but a hell, an age of discord and continual strife?' and of the truth of Shakespeare's observation this case was an illustration. All kinds of charges, from robbery downwards, were made against the princess, who would seem to have been excited to madness; and, although judgment is usually given against her, on the other hand, her husband appears to have had little that was lovable, and she may have been as much sinned against as sinning. The Grand Duke exercised control over his daughter-in-law as well as his son, and, whenever he was about to place new restrictions on her liberty, to save Cosmo from the 'scenes' that followed he usually sent him away from Florence, and thus he was able to travel through a great part of Europe. On one occasion, when a longer absence than usual was thought necessary, it was arranged that the prince should visit Spain, Portugal, England, Holland, &c. There was to be a record kept of all that occurred, and drawings made on the spot of different places. For this purpose a number of *savans* were attached to the suite, amongst whom were an architect and an artist; and the secretary and chronicler was Lorenzo Magalotti, who, to judge from the variety of works he has written, must have been an universal genius, or, as Newton styled him, 'a magazine of good taste.' Scattered through the huge volume that resulted there are several notices of the English buildings of that time, which we have culled, in the hope that some of our readers may be interested in them.

On March 19, 1669, the prince and his suite sailed from Corunna for England in the good ship called the Portland. Owing to the uncertainty of the soundings, the over-zeal of the captain, the inexperience of the pilot, and an ill-regulated timepiece, the British Channel was mistaken for St. George's, and instead of in England, the travellers were landed at Kinsale, in Ireland. At that time the famous Act of Settlement had been lately made law, and the inhabitants of Kinsale, the greater part of whom were English, were settling down after the turmoil of the previous years. Their houses are described as being of mean construction and appearance, with very little decoration, and for the most part low; some built of stone and slated, but others of mud and lime, which did not last long in the climate; glass was used in the windows, and, as was the case in High and Low Germany, there were no shutters. But what kind of houses had the unfortunate native inhabitants, who somehow appear at all times to be out of the reach of Acts of Settlement of any kind? There are few antiquarian questions so easily answered, for, as Moore says, two thousand years have passed in vain over the habitation of the Irish peasant. The prince took the precaution to have them 'reconnoitered' before he went near them, and the hovels he saw must have been as bare and full of wretchedness as those that are to-day found in many parts of the country. The dwellers were living like wild beasts, sleeping on short mats on the ground, treated as slaves, feeding chiefly on fish and cockles, and seldom tasting bread. They were allowed to retain but one-fourth of the produce of the land, the remainder being required by the landlord. The amazing fertility of Munster is described at some length, but the wise political economy of the day is seen in the circumstance, that, however it might abound, no wheat was allowed to be exported without a license. The chief part of the currency was in Spanish pieces. After remaining in Kinsale for two days, they again sailed, but this time they were obliged to put into St. Mary's, one of the Scilly Isles. More wrecks are said to have happened here than in all the other seas of Europe put together, but it is also said that in case none of the crews escaped, the vessels became the property of the governor. The houses in St. Mary's are described as being built of excellent materials, low, and a few slated. Most of them had for covering nothing but a mat spread over the rafters, drawn tightly all round and fixed to the walls, and which lasted only a year. After a couple of days they left St. Mary's, and this time they were fortunate in reaching England, and landed at Plymouth on April 1 (N.S.).

Although Plymouth was, it is said, in the sixteenth century, a mere fishing village, in 1669 it was reckoned amongst the best towns in England, having between twelve and fifteen thousand inhabitants. (In 1861 it had 62,599.) The life of the place was navigation, lead and tin being the principal exports, so that, as the greater part of the men lived at sea, women and boys only were to be seen. 'The buildings are antique, according to the English fashion, lofty and narrow, with pointed roofs, and the fronts may be seen through, owing to the magnitude of the glass windows in the different stories.' The prince remained in Plymouth four days, when he left, accompanied by Colonel Gascoyne and Major Andrews, whom the King sent to make all the arrangements for accommodation along the road to London. After passing through a country partly desert and partly cultivated with wheat and oats, the fields being surrounded with hedges and dry walls, they reached Oakhampton (which is said to be of little account, the houses being built of earth and stone, thatched with straw), and remained there one night. The next day they journeyed to Exeter; the country as they passed having fields surrounded with trees,\* meadows of the most beautiful verdure, gentlemen's seats, and small villages; the houses built of mud mixed up with short straw and chips of slate, and thickly thatched. Exeter is said to be intersected almost in the middle by a very large and straight street, full of rich shops, the houses of the same

\* It is not easy to see why, with such descriptions occurring, Macaulay should say: 'In the drawings of English landscapes made in that age for the Grand Duke Cosmo scarce a hedgerow is to be seen, and numerous tracts, now rich with cultivation, appear as bare as Salisbury Plain.'

form as elsewhere. 'The Cathedral is a very considerable edifice, but it deserves praise from its size, and from having the exterior faced with stone. The façade is ornamented with different figures, in high and low relief, representing saints of the Old and New Testaments, many of them having been injured in Cromwell's time. The church is long, and divided into three naves, the arches low and resting on round pillars; over these are galleries running almost around the whole church. It is lighted by large windows, in which are represented the figures of the saints. Around the church are the tombs and marble monuments of the ancient Catholic bishops, whose statues have been defaced by the Independents.' The beautiful throne of black oak was mistaken by the Italians for a marble tabernacle, which had been converted into a bishop's chair; and they were amused at seeing the bishop's wife and children, 'no less than nine in number,' standing under the tabernacle in a wooden enclosure. Exeter has been long famous for its sacred music, and the fine-eared Italians did not fail to note the exquisite tone of the organ, and the singing, 'in a chant similar to the Gregorian,' and which was so good on account of the high salaries that were paid the choristers. It was only a year or two before they came that any system was attempted towards keeping the roads in repair, so it is not surprising to find that after the travellers left Exeter they were inconvenienced by wet and muddy roads. Their next stage was Axminster, in which they found nothing noteworthy, except that the church bells were well tuned, and that cloth-making occupied the inhabitants, for it was not until 1755 that Thomas Whitty produced the first carpet there. Up to this the prince stopped at public inns (although many houses on the way were hospitably placed at his disposal), as it was his intention to travel incognito, which is to be regretted, as otherwise we should have had more pictures of the English houses of the time; but, after leaving Axminster, he was induced to accept an invitation from Lord Paulet to Hinton St. George. The house is described by them as an ancient irregular building, of a noble appearance, and spacious, the outside being faced with a kind of porous stone. They were keen-eyed enough to observe a difference between the garden here and those usually found in England, for while the latter consisted of grass plots with walks between, made perfectly level by rolling them with 'a stone cylinder, through the axis of which a lever of iron is passed, whose ends being brought forward and united together in form of a triangle serve to move it backwards and forwards,'—Lord Paulet's garden was a meadow divided into several compartments of brickwork, which were filled with flowers. In the parish church (which was 'an ordinary building') the most noteworthy monument was that to Lord Paulet's father, which was in good style, of coloured stone partly gilt, with an urn supported by two satyrs. They stopped next at Dorchester, and, accompanied by many of the townspeople, went to view the Roman remains. The camp they considered to have been originally a hillock, around which the tiers were cut, rather than formed of earth brought there for the purpose. Dorchester, for some reason or other, was thought but little of by them. It is said to be not large, nor surrounded with walls, nor a place of much trade, nor handsome, so that the county deserved a more suitable capital. Cattle abounded so, that in a circuit of three miles, forty thousand oxen and sheep were reckoned. When they left Dorchester for Salisbury, it was thought prudent to have them escorted by a number of the mounted militia, as protection against robbers, from which the district was not free. On their way an invitation to Wilton was received by Cosmo, from Lord Pembroke, which was but in part accepted, as he would only agree to dine there next day, and in the morning his lordship came to conduct him. On their way Stonehenge was visited; this is described as 'a celebrated piece of antiquity, supposed to be a sepulchre or a trophy, consisting of very large stones, some thirty feet or more in height and ten in breadth, placed on one another in three rows, in such a manner that the connection amongst them is not discernible.' The old British legends of its origin are given: that it was erected by Merlin, the famous mathematician, at the desire of Ambrosius Aurelianus, in memory of the defeat which the Britons suffered here through the perfidy of the ancient Saxons and their king Hengist, or by his brother Uther, to give more celebrity to the tomb of the same Ambrosius; and that it was in place of the ancient Sabean, which is more than a mile distant; but strange to say, no notice is taken of Inigo Jones's theory, that it was a Roman work, although it is the one in which the travellers might be thought most interested. From Stonehenge they went to Wilton. As not one of the houses out of London that were visited by the prince possesses more interesting associations, a fuller description than is in the book would be desirable. One would have liked to discover what impression a house so famous, and on which Holbein, Solomon, De Caus, and Inigo Jones were employed, made on foreigners. His Highness walked about the glorious grounds, saw Inigo Jones's bridge over the Nadder,\* the grotto rough-cast with pumice-stone and cockle shells, fountains playing in different ways, the maze park, and the rooms newly built, 'as well for pleasure as for the convenience of a foundry,' and then in the evening returned to Salisbury. Afterwards he visited a house where a number of ladies were assembled, and heard two of them sing an English air, 'very indifferently—the fault either of the music or of the singers.' The houses in Salisbury are said to be like those of the other cities in materials and structure. As for the Cathedral, 'although its architecture is Gothic throughout, yet it is magnificent and sumptuous, and it is rightly considered one of the most beautiful temples in England,' and as far as it goes their description is not incorrect:—'At one end in the stone façade there are three doors (besides others at the sides); these correspond both in situation and proportion with the three aisles within, which are divided from each other by quadrangular stone pillars; these serve as a support to other similar pillars placed against each angle, and made equally of Irish marble, called *Kilkenny marble* (?), not unlike the granite of Spain. These being equidistant from the two sides of the church respectively, leave an open space for the middle aisle (which is 214 paces long), and for the two smaller aisles on each side. Arches rest upon these pillars, supporting a noble gallery, divided by small but numerous pillars of the same Irish marble (?), which running round encircles all the interior of the building; and between it and

the roof, which is very light and airy, are the windows, which give abundant light to the whole edifice. Where the two smaller aisles terminate, and the church is divided by a transept of the same breadth and takes the form of a cross, four large arches are raised upon four lofty pilasters, which not only support the roof (from this place to the altar painted al-fresco with representations of different saints), but serve as a basis to the belfry, which, rising from the roof, continues for half its height in a quadrangular form, and terminates in a spire. In front of the principal aisle, when you have passed where the transepts branch out, the choir occupies a part of the greater aisle, and is separated from the rest of the church by a wall which runs round it as far as where the altar is placed; this yet retains some paintings, in which the name of God is written in Hebrew character.' Nor is the old saying omitted, that the doors correspond in number with the months of the year, the windows with the days, and the pillars with the hours. From Salisbury the prince journeyed to Basingstoke, which is described as a wretched place, the greater part of the buildings being of wood, 'so that the gratification of his curiosity did not compensate for the fatigue of walking even a few paces.' The next stage was to Egham, from which, on the way to Brentford, they visited Sion House, 'the villa of the Earl of Northumberland, and which was formerly a monastery of nuns of St. Bridget.' 'It is now converted into a spacious and commodious palace, having a great many rooms on a floor, after the Italian manner, and numerous galleries. The outside is entirely of flint stone, but yet without any superfluity of ornament. Within the circuit of the exterior walls is enclosed a very large meadow, which serves as a court; parterres and pleasure grounds, after the English manner, are not wanting, and extend as far as the Thames, which has the appearance of a canal running through the gardens. The building is new, and not yet finished; on the roof there is a very fine walk, covered with plates of lead.' At Brentford ('a very large village, through which the Thames formerly ran') a crowd had assembled to see the prince, and many people were permitted to do so in the dining-room of the inn. A number of court officials were sent to meet him, and he was offered as a residence in London Old Somerset House, but he declined it, as he was determined throughout his travels to preserve his incognito. After a few hours' stay in Brentford, they journeyed to London; 'the whole tract of seven miles being truly delicious from the abundance of well-built villas and country houses, which are seen in every direction.' Along the road, crowds were waiting to see him pass, and at about two hours before sunset, on April 15, his Highness arrived at Earl St. Alban's house, which had been prepared for him.\*

#### LIMEHOUSE-BASIN IMPROVEMENTS.

THE development of the coal traffic during the past few years has been so great in the Limehouse Basin of the Regent's Canal Company, that the accommodation was found inadequate for the increasing demand for space; and, consequently, the Company determined to apply to Parliament for powers to acquire the requisite land and make the necessary extensions and alterations, which being granted, the works were commenced in May, 1867, from the designs and under the directions of their engineer, Mr. E. Thomas, the contract being carried out by the Company themselves, with a very extensive plant and staff, under the immediate superintendence of their resident engineer, Mr. J. Blackebourn.

The new works consist of a ship entrance lock 350 feet long and 60 feet wide, divided into two compartments by means of three pairs of wrought-iron gates; enlargement of the existing basin by taking in about 1½ acres of ground near the present barge lock, and building a very massive quay wall; the construction of about 200 feet of quay wall on the river face; and, running at nearly right angles with this, a timber jetty about 45 feet long.

The method of keeping out the water during the construction of the new lock was by means of a coffer-dam, well strutted from behind, and composed of two rows of piles puddled between.

The lock is being built of brickwork in cement, with stone dressings and granite quoins. There are fourteen discharging culverts, placed at an angle of about 45°, and six emptying sluices.

The lock gates are of the ordinary type in wrought iron, with a skin of plate on the inner side and only half way up on the outer side; the lower portion of the gates being made watertight to enable them to be floated at any time when required.

The thoroughfare across the existing lock will be diverted by means of a new road, which will be carried over the ship-entrance lock by a wrought iron swing bridge. This bridge will be raised upon its pivot a few inches to enable it to clear the road, and will be manipulated by hydraulic power, as will also the opening and shutting of the lock gates.

The whole of the ironwork and hydraulic machinery is being provided by Sir W. Armstrong & Co., of Elswick Works.

The three coal drops now working in the basin will be removed, and replaced by fine new coal jetties, fitted with every modern appliance to facilitate the unloading of vessels, and thus enable them to leave the docks by the next tide.

The estimated cost of these works was 200,000*l.*, and it is expected they will be completed in time for opening in May. We may add that the progress of the works is so far advanced that we see no reason why this should not be accomplished.

The whole of the work is being executed with the very best material and workmanship, reflecting great credit upon the engineer in chief, Mr. Thomas, and the resident engineer, Mr. J. Blackebourn.

\* On the road he passed our old friend Samuel Pepys, who went specially to meet him:—'April 5th, 1669, O.S.—So we left other good things that would keep till night, for a collation, and with much content took coach again, and went five or six miles towards Brentford, where the Prince of Tuscany, who comes into England only to spend money and see our country, comes into the town to-day, and is much expected; and we met him, but the coach passing by space, we could not see much of him, but he seems a very jolly and good comely man.' Six days afterwards, Pepys had a better view of him: 'Easter Day, and going out of the chapel (St. James's), I did see the Prince of Tuscany come out, a comely, black, fat man, in a mourning suit, and my wife and I did see him this afternoon through a window in the chapel.' There are a couple of other notices of him in the Diary.

\* How little the English peasantry know of topography! When Carlyle and Emerson visited Wilton, the gardener was unable to tell them the name of this river.



## CONDITIONS OF CONTRACT.

(Concluded from page 132.)

IT must not be forgotten that some contractors—in fact all builders—occasionally act direct for the client without the intervention of an architect, and often to their own pecuniary advantage; and they justify this by the simplicity of the relations thus subsisting between employer and employed, and the frequent desirability of direct communication between them. We understand the fallacy as to the supposed saving of the costs of proper design and superintendence. But there is a recommendation in the mere simplicity which is wanting in the proposed complications if lawyers are required to commence, and arbitrators to proceed with the work. If Mr. A., wanting to erect a house, goes to Mr. B. to build it for him—setting aside all questions of art—there is but the necessity, as at first would appear, to arrange the kind of building and the terms, as in any other simple business transaction. But the contractor himself can hardly get on without plans, even if the employer is satisfied without first seeing them; so he engages a designer of some kind, and thus the architect sinks to the position of a mere draughtsman, and as employed by him, becomes either the clerk or tool of the builder. To this point many firms have lowered the architect, and we may add themselves also, for even such important works as churches, and other large buildings, have been 'got out,' as the phrase is, in the office; and whole ranges of important streets, squares, terraces, as well as city buildings and offices, have been 'got out' in the same way, with what architectural effect we will not now inquire. Yet what would be thought of a combination of architects not to include in their invitations to tender for works, firms who aspire to be architects and builders together, and obtain the profits of both, examining and pricing their own bills? While the present taste, or want of it, lasts, perhaps these simple arrangements may exist unchallenged, but there are signs of a demand for buildings properly designed and superintended on behalf of those who purchase or intend to inhabit them. This of course will lead to a more extended application of the third-party arrangement, the architect being called in to design the building, advise the client, and arrange with the contractor.

In all cases at present, the client gives himself up to his adviser by the mere terms of the conditions; and the contractor, on this account, is called upon to do the same, and to accept his verbal interpretation of written and well-understood documents, because of the mutual relationship, the middle position, occupied by the architect, and the confidence reposed in his judgment by both parties.

His sole arbitration is submitted to because, having reduced the client's wishes to a definite shape, and to a form available for the contractor, he alone can give any authoritative declaration as to what is meant or intended by the drawings made, and conditions drawn up by himself—the effect of which is as well, if not better known (as it now appears) to the contractor as to himself, and therefore not blindly accepted. The architect cannot be a mere advocate for his client against his own judgment, nor can the client insist on his being so, for he has not the necessary technical information; nor can the contractor fairly object to the architect assuming to know his own mind as expressed in the documents, where such may not be perfectly clear. Where any attempt is made by a contractor to ascertain what he undertakes to perform, it is seldom that he cannot secure himself from any loss, or see his way to obtain such profits as he chooses to require for his services; and if the client expects to get more than a fair amount of work for his money, or to have his works carried out at an unremunerative price, who has to explain the matter to him but the architect? Should the client unjustly object to any work or materials, who has to resist him and become for a time the builder's advocate, but the architect? Should time be exceeded, who has to say whether cause can be properly alleged for delay, and how much allowance must be made for unavoidable causes, but the architect, notwithstanding his client may be suffering severely for want of the works being concluded, and may be desirous to impose the penalties provided? Again, as to payments. Who has to see that the contractors do not suffer from delay on the part of his client as far as he can prevent it by giving his certificate, but the very same architect to whom the client looks to be certified what he has to pay and when to pay it? To urge that the architect cannot do this fairly is to ignore common everyday facts, and to make difficulties where none occur.

Yet it is against this sole arbitration—arising out of the middle position assumed by the architect—that the great objections are raised; and, indeed, this seems to be the head and front of the offence. The printed memorandum of the General Builders' Association—a body having its headquarters in Birmingham, but extending northwards to Dundee and southwards to Exeter—has addressed the members of Architectural Societies and the Architects of Great Britain as to four special points, of which the arbitration clause is the most important. The Metropolitan Builders' Society confine their attention chiefly to this matter, and suggest a form of arbitration clause which they would like to see adopted. It is briefly as follows:—'All questions between the client—or the architect on his behalf—and the contractor as to the (1) *proper performance*, the (2) *quantity* or the (3) *quality* of (4) *works* and (5) *materials* or their (6) *prices*, or as to (7) *alterations* of all kinds (including money additions or deductions for same), or as to (8) *time of payment* or (9) *otherwise*, (omitting apparently time of carrying on or finishing the works, except this be covered by the words 'or otherwise,' again repeated with the addition of 'in any way relating to the premises') shall be referred to the award and arbitration of ———.'

This blank, one would ordinarily suppose should be filled by the name of the architect designing and superintending the works; for who in the world but he could be supposed to be able so fairly to exercise this power and discretion for both parties alike—who could so thoroughly understand the whole matter in hand—who possess so much the confidence of both sides? Who, in fact, does really now in every contract bear these heavy responsibilities but *the architect*? Yet the builders want some other architect, to be called 'arbitrator,' to be put in his place; one who has perhaps never heard of the work before, and is so perfectly uninformed and unbiassed, that he must necessarily delay the work when anything is submitted

to him in order to inform himself thereon, and must devote further time and attention in hearing evidence, as well as run up a bill of costs. One who, moreover, may be as liable to failings and partialities as the original architect—in fact, who in another case may be *the architect* himself, and subject to some one else as arbitrator.

Now does it not strike these builders that such a demand as this is a serious charge against the fairness, the honesty, uprightness, and common sense (in one word) of architects generally, yet putting a most humorous confidence in the unknown blank architect, who, however fit to direct other men's works, and explain the intent and meaning of other people's drawings as arbitrator, is not capable of so acting fairly with regard to his own?

And would it not strike any architect that there is something strange in such a sudden demand for him to surrender at discretion his position of director of his own works and agent for his own client, when hitherto he has probably never found any individual contractor urge any objection against his so acting? While, as to the client, would he not imagine some deadly feud had arisen between architects and contractors, preventing their mutual understanding, and jeopardising his interests; and would he not be alarmed at being thus forced to stand the chances of having to pay the costs of an additional architect whenever this feud should break out into open war, or even mere skirmishing take place between them?

In fact, it would seem as if contractors were endeavouring to drive architects out of the field altogether, if they will not consent to neutralise the contract and leave all kinds of doors open for an attack upon the pocket of the client.

We say it would seem—for we are persuaded this is not the 'intent and meaning' of the general body of builders, nor the wish of most of them, that such an inference should be drawn from their printed papers. Yet men of upright character, and with well-grounded reputations for even-handed justice as well as shrewd common sense, have put their hands to this demand for architects to stultify themselves—give up their professional status, and hand over their clients to lawyers, arbitrators, and surveyors, without retaining the power to do more than put in a word or a drawing as evidence of their intentions of humbly submitting to another's decision; feeling, perhaps, that they also may aspire to the honour of being nominated by a contractor as arbitrator at some future time. We have no hesitation in saying this clause will not work—simply because no architect will adopt it, and no client will be foolish enough to allow him to do so.

Having thus disposed of the sweeping arbitration clause, as above described, let us say that some matters may very fairly be the subject of arbitration; and a clause embodying such would scarcely be objected to, because in practice it rarely happens that an architect does not himself suggest an appeal, informally, to some arbitrator—be he another architect or surveyor—if any difference, not even a dispute, but any common settlement of account is necessary, though this may not be part of, or according to, the formal terms of the contract. The measurement and pricing, for instance, of extras or omissions, is generally handed over to the surveyor who took out the quantities; and if there be any doubt as to quality of materials—though it is seldom that there is room for doubt in this matter—the question may be referred to an independent party who is supposed to be a good judge—perhaps even another builder. Again, as to time, few architects but admit a strike clause and a form permitting an extension of time for unavoidable delays, though it is a new thing to require 'lock-outs' to be included in such a phrase, they being avoidable and the result of the action of contractors themselves. Still, without a formal clause, no architect would object to consider such a case if the lock-out were justifiable, it being one of those matters of general policy affecting the whole building interest, and not merely the class of contractors. An arbitration clause should thus embrace merely the reference of value and quantities of extra or omitted work, and payment in case the certificates be not issued in due course. We think few, if any other matters, are fit subjects of arbitration, but that *the one* architect's decision, as heretofore, should be final, binding, and conclusive in all respects.

If it be necessary to provide by a special clause that the architect shall give his certificates—especially the final one—at the time named in the contract, or state to an arbitrator in writing the reasons why he cannot feel that he is justified in doing so, (the works not being complete or not being perfect, &c.), and if some protection is required to the contractor owing to a defect in the legal remedy only just discovered by builders, and only just made known to architects, by all means let it be devised; or if there is any preferable way, free from objection, of nominating surveyors in taking out quantities for competition tenders, by all means let it be adopted; but surely these are very small matters of detail compared with the vital question as to whether an architect is to be either an arbitrator or only a draughtsman, and so the very meaning of the word 'architect' changed. When we learn that a large band of contractors have bound themselves each not to take any contract which another has refused because of its containing—so-called—'unequitable conditions;' (and what these are considered to be we learn from the foregoing suggested arbitration clause), 'unless the committee of the Builders' Society should decide that the conditions objected to may be reasonably adopted'—we are astonished at the spread upwards of the principles of trade unionism, and wonder what the penalty is intended to be if the temptation of a good contract should be too great for one of the Society builders to resist. We shall next look for advertisements from non-society contractors, free contract associations, and co-operative arrangements for executing building contracts. To most London contractors, however, any idea of this kind is quite foreign, and they have no wish to take upon themselves more responsibilities than at present; while they doubtless feel the advantage, and appreciate the assistance, we have before alluded to, as received from the architect.

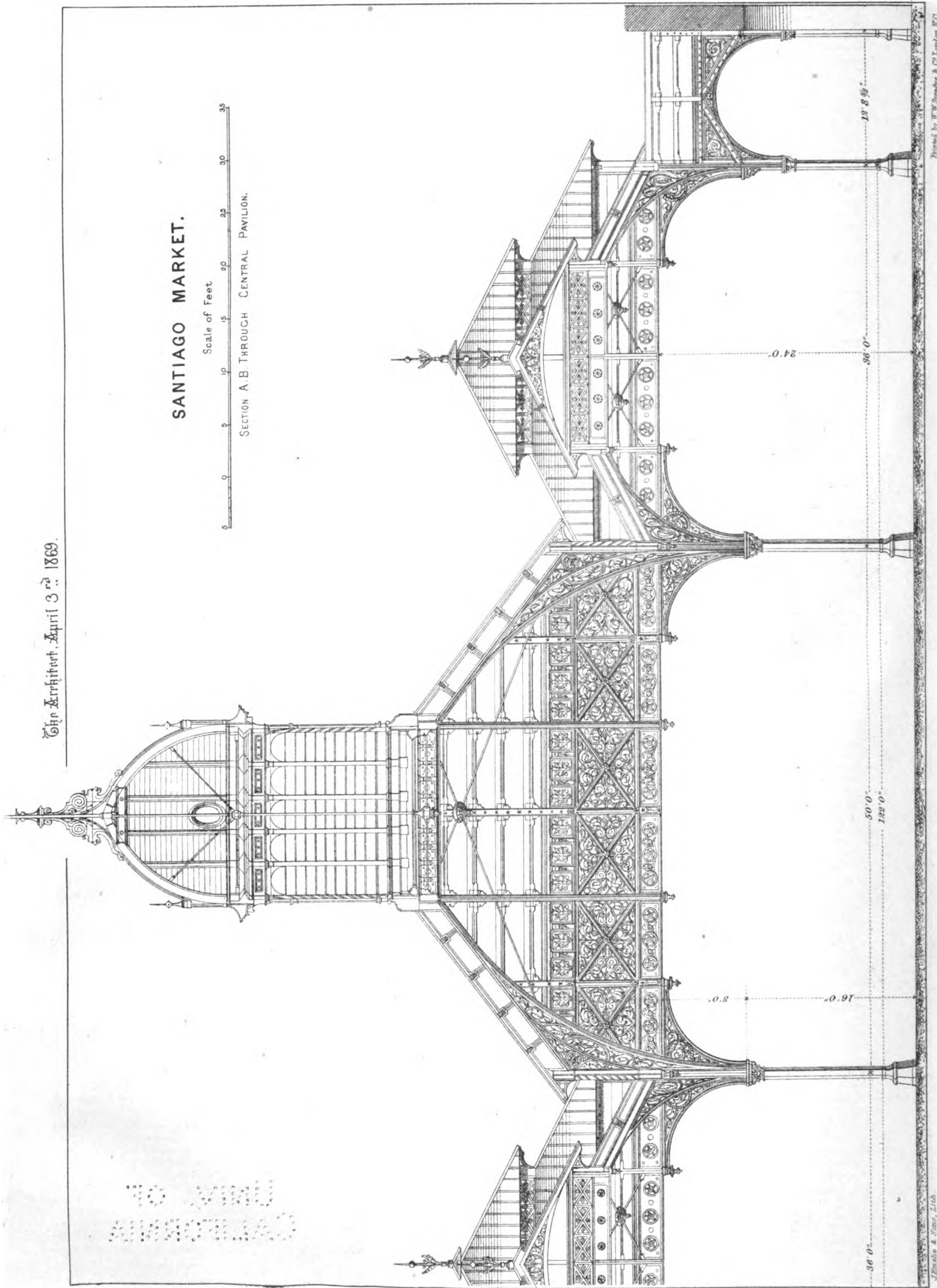
It must not be forgotten that no duty of an architect comes before that which he owes to his art; and in designing a building he must see that the science of his art is properly carried out, if he would deserve the reputation he desires. And, thus, whether his client is careless of the matter or no, whether the builder is one anxious to do his work well or otherwise—whether the matter lead to trouble, anxiety, or expense—it is the architect's first duty to do well, from a professional

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California

The Architect, April 3<sup>rd</sup> 1869.

# SANTIAGO MARKET.

Scale of Feet  
SECTION A. B. THROUGH CENTRAL PAVILION.

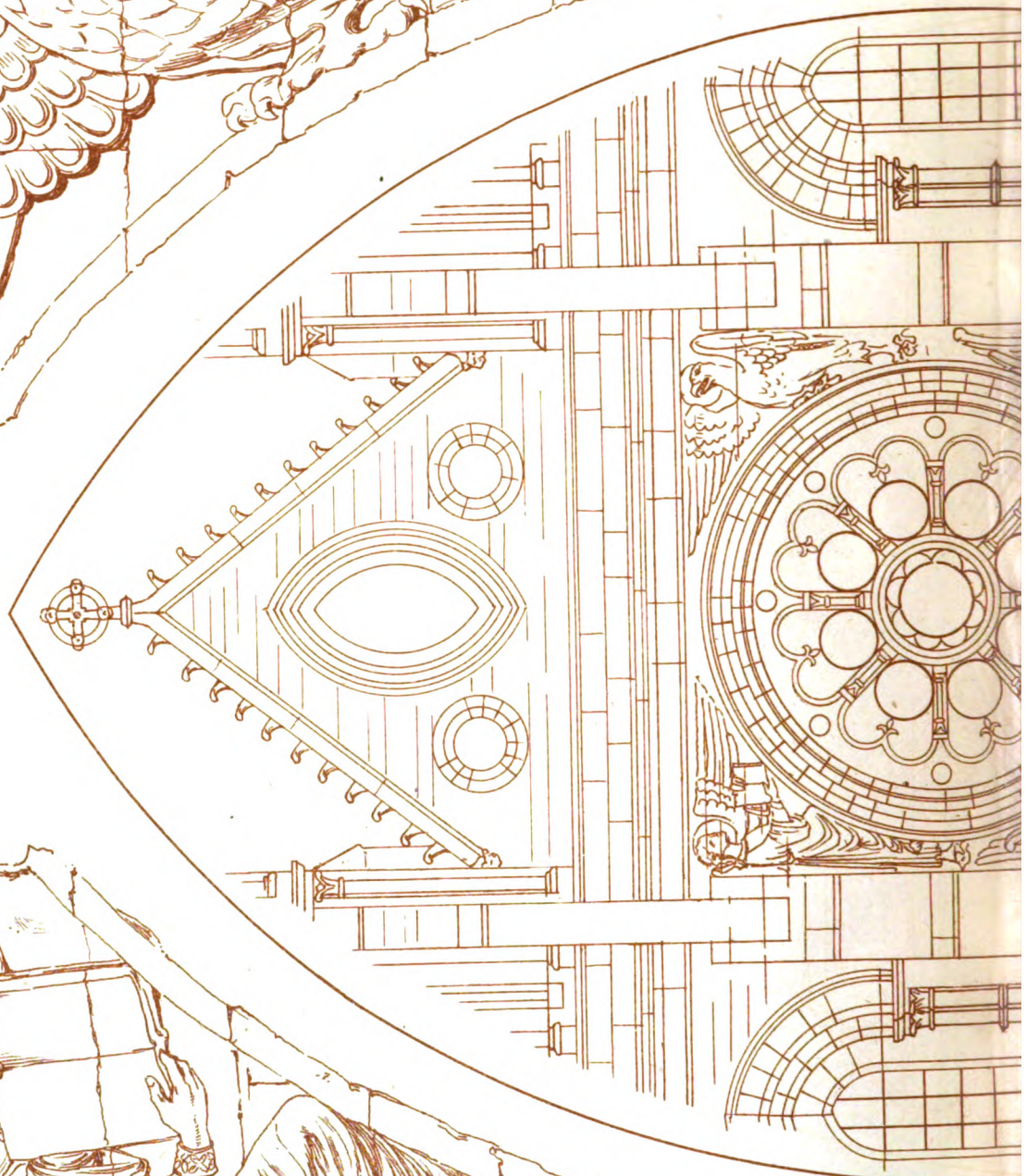
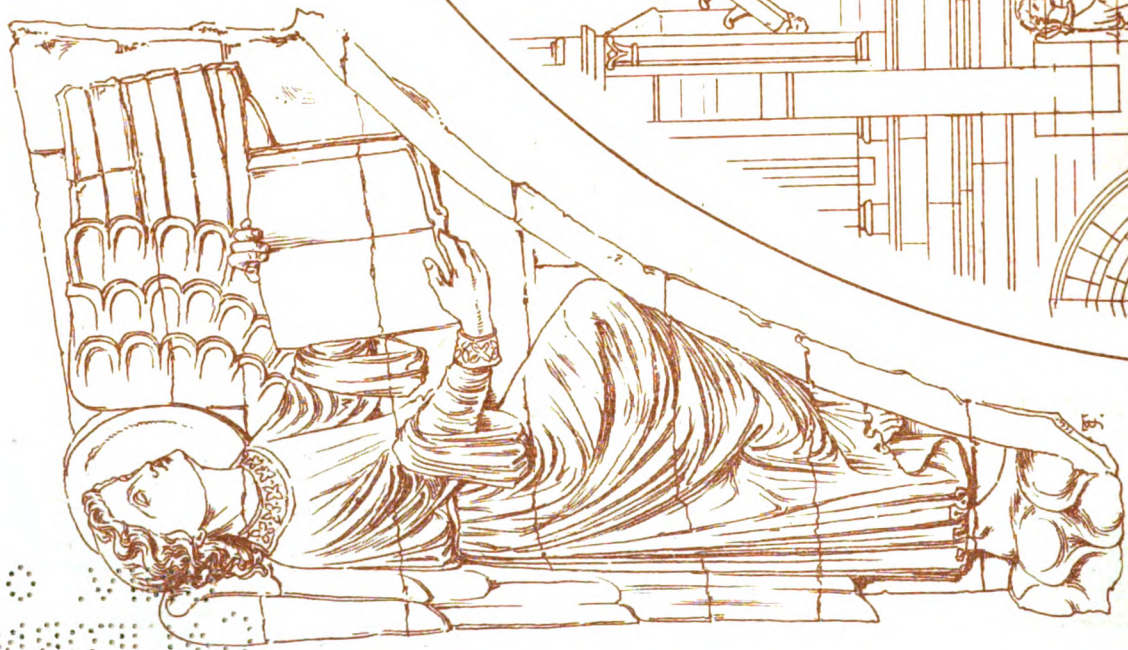
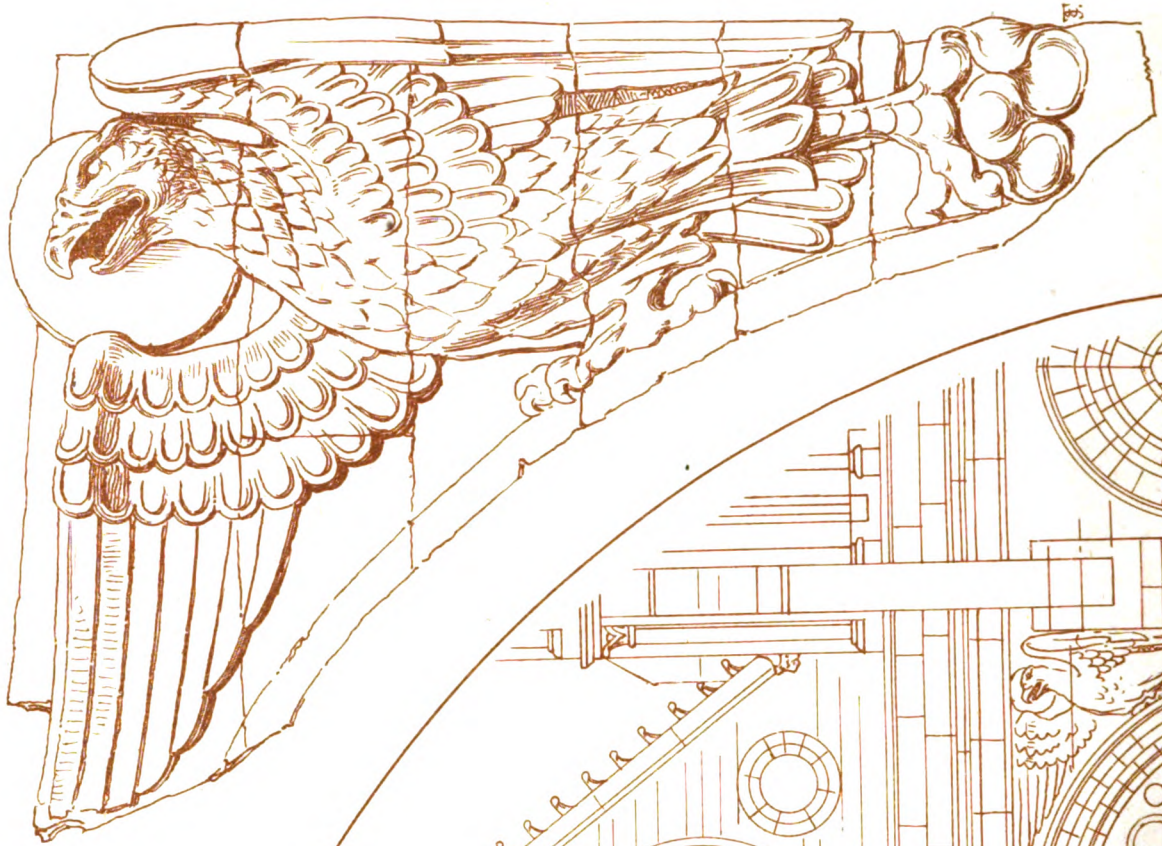


J. Rendall & Sons, Arch.

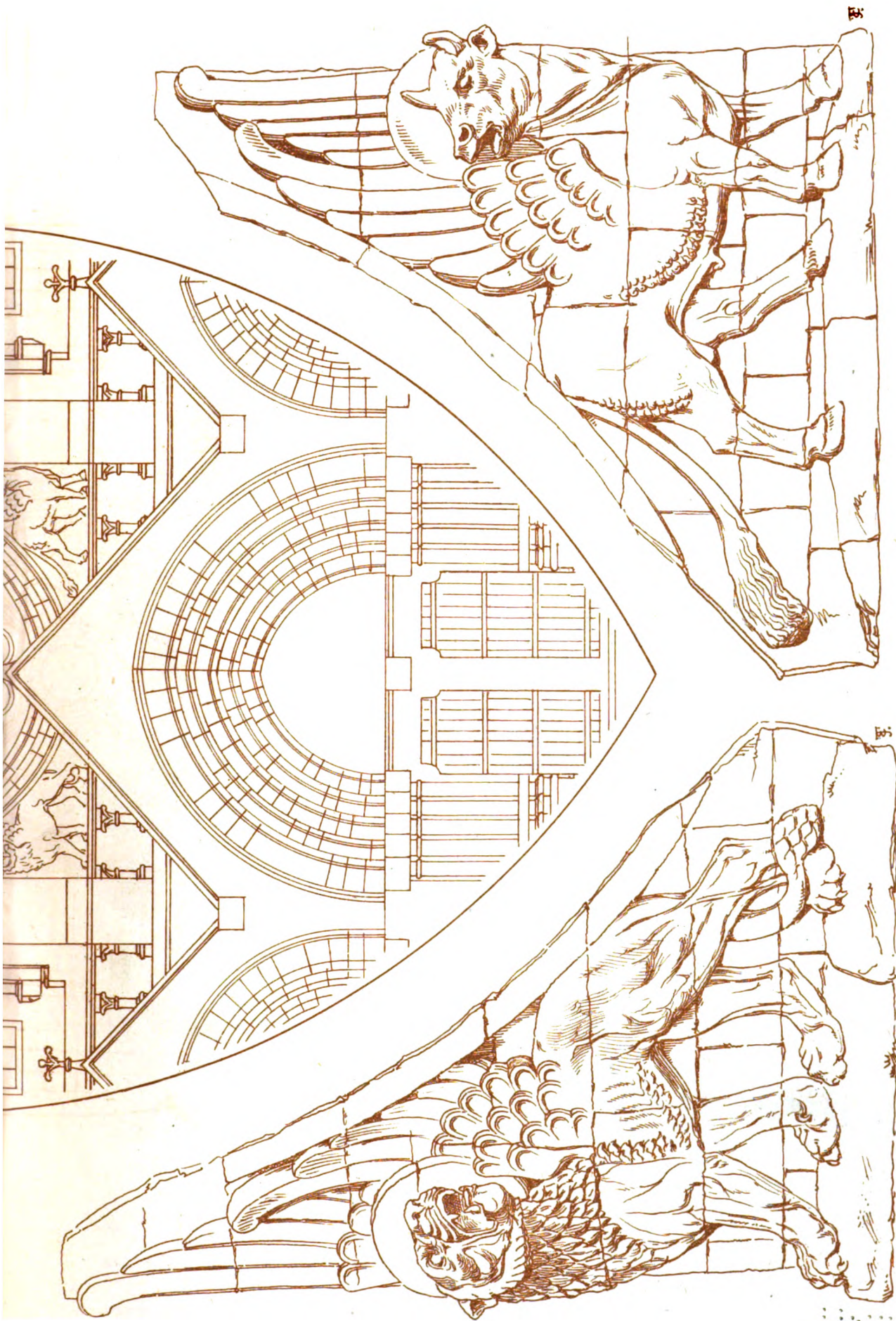
Printed by W. W. Spangler & Co. London, E.C.



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California







The Cathedral Church of St. Finbar, Clark,  
 EVANGELISTIC EMBLEMS AROUND THE CIRCULAR WEST WINDOW.  
 DESIGNED BY W. BURGESS, ARCHT.—MODELLED BY THOS. NICHOLLS, SCULPTOR.  
 LITHOGRAPHED BY E. J. TARVER, FROM PHOTOGRAPHS OF PLASTER MODELS.

Printed by W. W. Spangler & Co., London, E.C.

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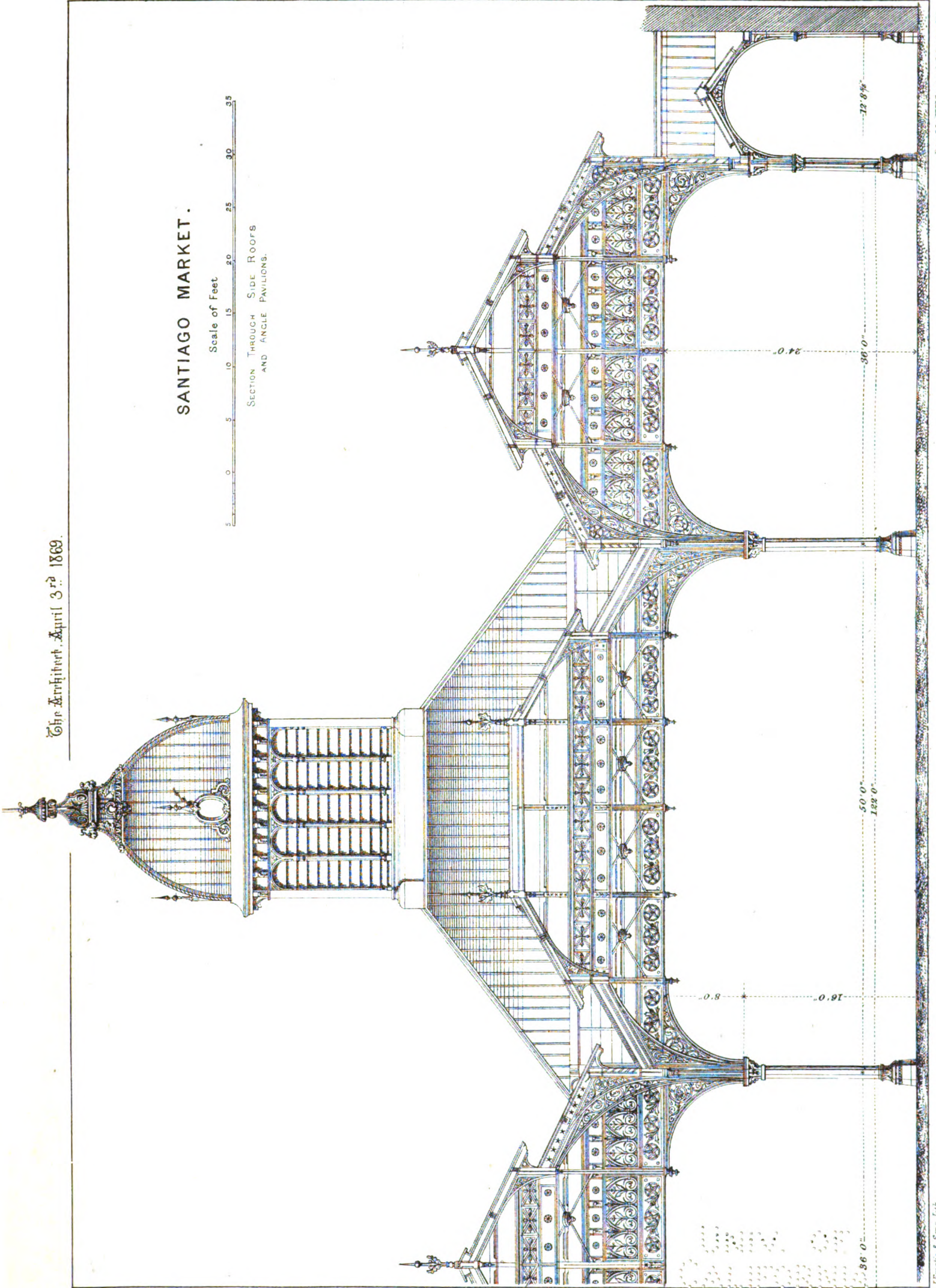
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The Architect, April 3<sup>rd</sup> 1869.

# SANTIAGO MARKET.

Scale of Feet  
0 5 10 15 20 25 30 35

SECTION THROUGH SIDE ROOFS  
AND ANGLE PAVILIONS.



Printed by W. Simpson & Co. London, E.C.

J. Em. Sims & Sons, Ltd.

70 100  
ANATOMY



point of view, what he has undertaken. Even if his client and builder agree on adopting, or the builder persuade the client he can adopt, a mode of construction which the architect's better knowledge tells him is wrong, dangerous or improper, it is the duty of the architect to explain the matter, and if it be insisted on, refuse to bear any part of the responsibility in carrying it out. And as in art his prerogative is undisputed, so in the science of construction, as well as the form and method of execution. The time and manner of payment may in certain cases even be eliminated from this view of the question, for this is no part of his duty relating to his position as an artist—a designer of art building, and a superintendent of its execution by the hands of workmen. These workmen are perhaps employed for the time being by a capitalist called a contractor, under certain conditions, to suit the special case; or, perhaps, employed by the client himself, and paid day wages for day work. The latter is the oldest and simplest form; is not unknown in the present day; and, if much additional complication is attempted in the contract and quantity system, will be again generally resorted to, and probably prove a saving as well to the pocket as to the peace of mind both of architect and client. In this way, at any rate, expenditure will be ascertained at the time of progress in the works, and payments must be provided for in sufficient time for a client to see the state of the case before he is absolutely ruined by a large bill for additional works, or his mind made uneasy by the mere expectation of such demands and the uncertainty as to his architect being able to shield him from them.

## ILLUSTRATIONS.

### THE EVANGELISTIC BEASTS.

THERE is hardly any portion of Christian Iconography upon which more might be written than that relating to the evangelistic animals. In the first place, the author would have to enter into the biblical portion of the subject, showing how the manifestation in the burning bush, as seen by Moses, was succeeded by the more majestic one of Isaiah (Isai. vi.), and the culmination in the rapt vision of Ezekiel, and how this again differed from that seen by St. John. Then would follow a most interesting branch of the subject, and one which is only just beginning to be worked out, viz., the influence of surrounding objects upon the sacred writers. Thus we know that both the Ark and the Golden Calf were derived from the Egyptians, and a French author has lately called attention to the resemblance between the Ninorite sculptures and the visions of the prophets of the Captivity.

Then would follow the various interpretations given to these animals at different times: how the Jews believe them to represent the four archangels or four great prophets, but how the Christian church has, at least from the second century, persistently considered them to mean the four evangelists. The artistic history would show how the great visions of Ezekiel and St. John have been interpreted into sculpture and painting; the variety of types and the date of their adoption. Lastly, there would be the political history of the evangelistic symbols—showing what nations and what guilds took them for patrons, and how they were emblazoned on the banners, sculptured on the buildings, and even engraved upon the cannon. The lion of St. Mark had nearly as glorious a career as the Roman eagle itself.

If we examine the visions of Ezekiel and St. John we find one very notable difference. The prophet describes four living creatures which had the likeness of a man; each creature had four heads, viz., the face of a man and the face of a lion on the right side, and the face of an ox on the left side, and we are likewise told that they had the face of an eagle. They had each four wings, and their legs \* were straight legs; the sole of their feet was as the sole of a calf's foot, and they had the hand of a man under their wings on their four sides. They were also in close connection with certain wheels which intersected each other at right angles, the strakes or rings being full of eyes. The evangelist, on the contrary, describes four beasts as being in the midst of the throne and round about the throne. These beasts were full of eyes before and behind; the first beast being like a lion, the second like a calf, the third had a face as a man, and the fourth was like a flying eagle. We are further told that they had each six wings, and that they were full of eyes within.

These two visions have given rise to two distinct ways of representing the same subject. That of Ezekiel has produced what is called the Tetramorph. This, in Greek art, assumes the form of a human being with the four heads (i.e. that of the man, the lion, the eagle, and the ox), and six wings. The feet, which are human, stand on two winged wheels. In Western art, it becomes an animal with the four different heads and four different feet.

St. John's vision has, however, been that generally adopted; and although we occasionally find the evangelists taking the form of human bodies with animal heads or animals with six wings, the great number of ancient examples simply exhibit the man, eagle, lion and ox with two wings only. These winged animals for the most part hold books representing the gospels. In art later they have scrolls inscribed either with their names or with the commencement of their respective writings.

In Mediæval works they are thus placed—

The angel,  
The eagle,  
The lion,  
The ox,

or if they occupy the corners of a rectangle, say a monumental brass, they are arranged in strict order of heraldic precedence, thus:—

The angel.      The eagle.  
The lion.        The ox.

The reason is that the angel and the eagle are naturally more spiritual than the lion and the ox, which are only beasts. Again each symbolises one of the acts of our Lord, as expressed in the following lines which Didron ('Manuel d'Iconographie,' p. 307) quotes from a book of the gospels given to the Sainte Chapelle at Paris by Charles V. in 1379, but which are doubtless of far earlier date.

Quatuor hec dominum signant animalia Christum :  
Est Homo nascendo, vitalisque sacer moriendo,  
Et Leo surgendo, caelos Aquilique petendo ;  
Nec minus hos scribas animalia et ipsa figurant.

Further information will be found in Didron's 'Manuel d'Iconographie chrétienne' (Paris, Imprimerie royale, 1845), p. 241–307; and Mrs. Jameson's 'Sacred and Legendary Art' (London, Longmans, 1866), p. 132. The latter work contains woodcuts of the sundry ways in which the evangelistic beasts have been represented from time to time.

The annexed lithograph is a representation of the evangelistic symbols as they are about to be carved around the rose window of Cork Cathedral. They always formed a part of the design, being represented on the original drawings, but that they are to be carved is due to the liberality of the Freemasons of that city. The craft took a very conspicuous part in the ceremony of laying the foundation stone some years back, and, at the suggestion of the late Dean of Cork (the present Bishop of Peterborough), whom the craft has the honour of enrolling among its members, their gift took the form of these pieces of sculpture, a worthy present from the Freemasons of a city which boasts of the No. 1 Lodge of Ireland, and of the affiliation of the Hon. Mrs. Aldworth.

At present only the half-sized models are executed, but the carving will very shortly be commenced. When in stone, the animals will be fully real size. The process of modelling was thus:—The architect, in the first instance, made sketches to a half-inch scale. The models were then partially executed by Mr. Nicholls, of Lambeth, under the superintendence of the architect. Then both sculptor and architect repaired to the British Museum to see how the Ninevites treated similar subjects, and the figures were finally finished from the information thus obtained.

It is true that this is a very troublesome process both for the sculptor and for the architect; but the art of sculpture in connection with architecture has been so forgotten that it is only by such painful processes as those described that we can obtain work which, when executed, we should not wish to see altered. Of course, it is not denied that there are plenty of sculptors who can copy nature more or less correctly; but far higher qualities are demanded when it becomes a question of arranging the lines of the figures with due regard to the lines of the building; and when it also becomes a question of properly filling up a certain space, and, above all, of making those modifications of nature which are imperatively demanded in such work. Thus the cyclids and other details have often to be exaggerated, and the outline, if the subject is a bas-relief, be cut square and not rounded off, or occasionally it must be strengthened with an incised line, or some parts of the drapery must be undercut or the reverse. Now, Mr. Nicholls has attended to all these points, and, although at present we have only the half-sized models from which to judge, there is every probability of the real work turning out a success and a credit to the donors.

If there could be a Mr. Nicholls in every cathedral city, and if architects would only give up their notches, chamfers, vegetation, and hideous brick polychromy, and spend the money on sculpture, and give sketches for it, there might then be a chance of an improvement in our art, which there will never be until such men as Mr. Nicholls and Mr. Holiday or Mr. Marks are called in to every important building in the same manner as the upholsterer and grainer.

W. BURGESS.

### NEW MARKET FOR SANTIAGO.

THIS iron building, the contract for which has been very recently let, is designed to occupy the centre of a quadrangle already surrounded by a one-storied building appropriated for butchers' stalls; and the work being executed in this country is limited to the roof and the columns and girders which carry it, together with a certain proportion of fittings.

The material employed both for constructive and decorative purposes is almost entirely cast iron—wrought iron being used for little else than the bolts and tie rods. The timber used is confined to boarding under the zinc covering of the dome, and pitch pine for purlins. This material was employed in preference to iron purlins, as giving better means of fixing the roof covering. As will be seen from the drawings, a considerable amount of ornamental effect has been aimed at and secured.

The mode adopted for covering the space was to erect nine separate roofs at varying heights, in addition to a low corridor roof next the butchers' stalls, the central one being the highest, and surmounted by a small dome.

\* On Ezekiel's vision, see 'Newcome's Ezekiel.' London, Tegg. 1868.

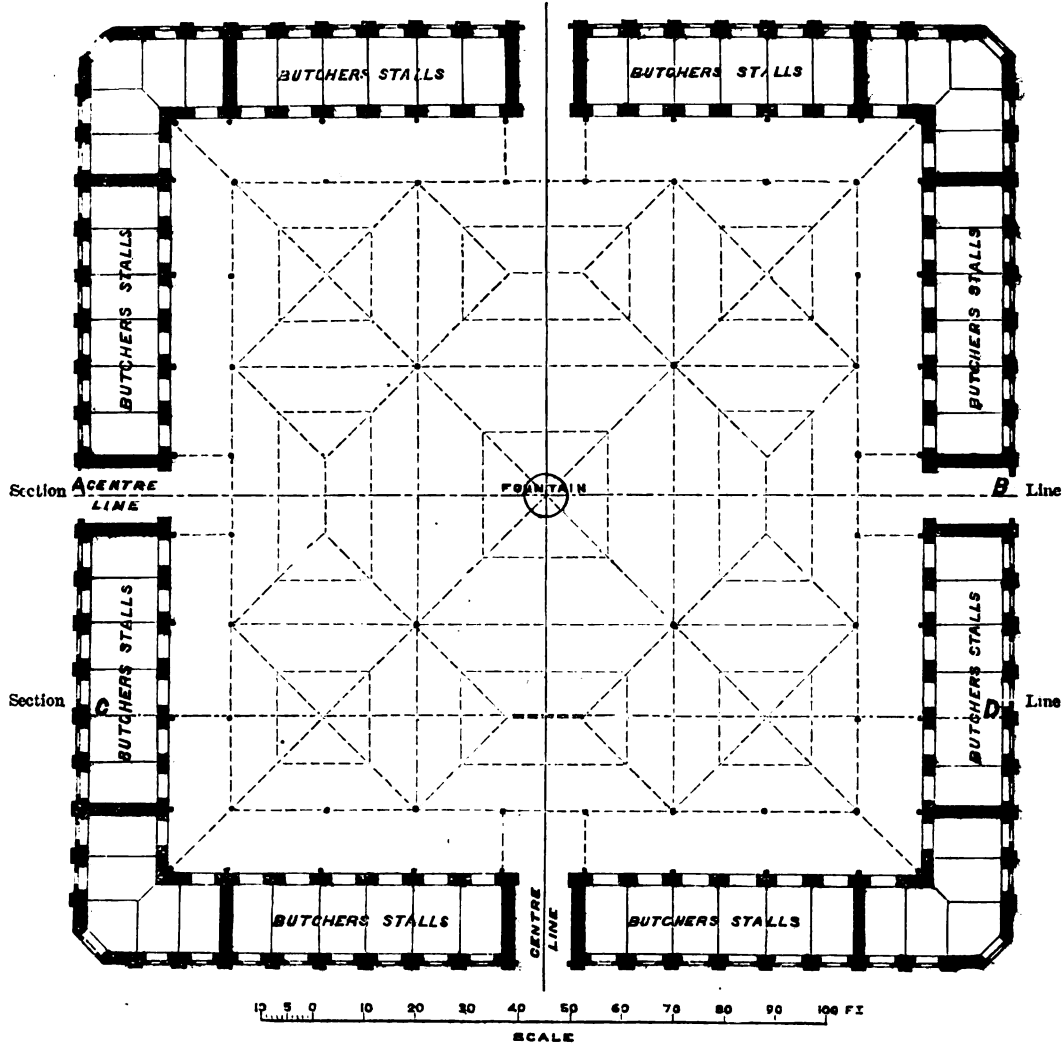
The angles are occupied by four roofs of a less height, but still forming features. These, like the central one, are hipped each way, and the five pavilions thus formed will have their louvred faces well exposed to the air. Four oblong spaces, one adjoining each side of the quadrangle, remain. These are roofed at a lower level again; and the system thus completed and treated as shown on our illustrations may be expected to give rise to very picturesque effects.

The general roof covering is 'galvanised Italian corrugated iron,' a material differing from ordinary corrugated iron in having wide plain faces, with the corrugations some inches apart. This iron is to be No. 18 B. W. G., and before galvanizing and corrugating is to weigh 30 oz. to the foot super; and this material is to be employed without boarding or rafters to carry it being considered necessary. There is no inner skin or ceiling, and a ventilator to allow the escape of heated air is formed at the apex of each pavilion and at the ridges of the intervening roofs. The gutters are all trough gutters of large

size, as much as 1 foot 6 inches across, and the water from all the roofs will be conveyed to the outer ranges of columns, which will act as down pipes.

The castings have been arranged in short lengths for packing, and the ornamental castings are to be mostly, if not entirely, cast separate from the structural pieces. The very necessary precaution has been taken of providing for the erecting complete in this country of a very large portion of the structure, each separate casting being numbered and marked, and a sufficient proportion of duplicates of every piece being provided to guard against contingencies.

Almost the whole structure will be bolted together, and a specially ingenious contrivance has been arranged for holding together the ends of the girders on the tops of the caps, so as to give almost perfect continuity to the lines of girders from end to end. The very considerable amount of fitting and fixing to be provided for may be judged of from the fact that the number of bolts amounts to 34,288, and the number



PLAN OF THE NEW MARKET FOR SANTIAGO.

of holes to be punched to 77,472. As a specimen of the general care with which the whole is specified and arranged for, and as a good example of the precautions which it is wise to take in the matter of testing iron work, we append the following extracts from the specification:—

**Testing Quality of Iron.—Cast Iron.**—When the castings for bed plates, columns, girders or rafters, are being run, three test bars shall be cast from each day's melting for this work, and from such ladle-full as the inspector shall direct; each bar is to have marks cast upon it indicating the date of the melting, and the three bars of each set must be numbered 1, 2, and 3, consecutively. One of the test bars will be broken in the presence of the engineer's inspector, the second is to be sent to London, the third is to be held as reserve at the disposal of the engineer. The test bars are to be cast 3' 6" long, 2" deep, and 1" thick, and care is to be had to preserve the dimensions as accurately as possible. The test bar being placed on bearings 3 feet apart, is to sustain, without breaking, a weight of 30 cwt., applied in the middle, and with that weight shall not deflect more than  $\frac{1}{8}$  of an inch. If the bar does not satisfy these tests, the castings run from the same meltings will be rejected, unless some flaw in the test bar itself shall be discovered at the place of fracture. If the test bar shall fail to satisfy the above conditions, and it shall be judged by the engineer that such failure appears due to a flaw in the test bar itself, then the third bar above mentioned shall be tested in like manner, and the result shall be accepted as conclusive. The test bar shall be accurately gauged, and if the section is found to exceed the dimensions above given, viz. 2" by 1", the minimum breaking weight will be increased in proportion, viz. directly as the square of the depth, and directly as the breadth; on the other hand, if the dimensions fall short of those prescribed, a corresponding diminution will be made. A machine must be provided for accurately determining the deflection and measuring the breaking load by dead weight, to the satisfaction of the engineer, as also a gauge for determining the dimensions of the bar. The second sample test bar is to be sent, at the contractor's expense, to the testing works of Mr. Kirkaldy, the Grove, Southwark, London, and is there to be tested in such manner as may be decided by the engineer, at the sole expense of the manufacturer. The bars are to be sent up weekly by rail, carefully packed.

**Testing Wrought Iron.**—Such sample pieces of the wrought-iron bars used for bolts, nuts, and tie rods, as the engineer may select, are to be tested by being bent cold through

an angle of at least 120 degrees; if any crack, or commencement of a crack, or rupture of the fibres, appears on the convex side of the bend of any one sample piece so treated, the lot of bars represented by that sample is to be rejected. As to the selection of the samples, the bulk of materials offered by the contractor is to be divided into such lots as the engineer may deem expedient, and one sample is to be selected from each by him and considered as representative of the lot from which it has been taken. All girders or such of them as the engineer may designate to be tested before leaving the premises of the contractor, and at his expense, in the presence of the engineer or his inspector, to the extent of one-third of their breaking strain; and should the engineer decide that any girder exhibits too great deflection, or appears otherwise faulty, it is at once to be broken up in the presence of the inspector, as are all other rejected castings, and is to be replaced by a fresh casting, which is also to be similarly treated.

The contractors for the whole work are Messrs. Laidlow & Sons, of London and Glasgow; the engineer, Mr. Edward Woods; and the joint architects, Mr. T. W. Goodman and Mr. Driver. The representative in this country of the Santiago municipality is Mr. Garland.

**Canal between the Bay of Biscay and the Mediterranean.**—The project of establishing through the valley of the Garonne (France) a canal for large navigation, to connect the ocean to the Mediterranean, has been often mooted, but there is now a new plan for this undertaking, under the auspices of M. Staal de Magnoucourt. The proposed canal will admit not only merchant ships of the heaviest tonnage, but also men-of-war and Transatlantic steamers. It is proposed to establish a port in the Gironde, just below Bordeaux, and another on the Mediterranean. The cost of the scheme is estimated at 442 millions of francs, and the cutting of the canal would occupy six years. This plan, if carried out, will materially shorten the navigable communication between England, the North of Europe, and India, for it will in fact be a continuation of the Suez Canal.



## THE GREAT PYRAMID.

To the Editor of THE ARCHITECT.

SIR,—The 'note' on my letter in your last issue contains a re-assertion, in a more deliberate form, of what I pointed out to be simply contrary to the fact; and that re-assertion is sought to be strengthened by a quotation, not from my letter, but from Professor Smyth's private letter to me, of which I sent you a copy. I must, therefore, ask you, in simple justice to the Professor and to the facts, to publish the whole of his letter; so that your readers may judge how far true it is (in the sense of his being 'content to determine that matter of real geodesic importance' by any such means) 'that the measurement of the side of the Pyramid to which the Professor gave the *place of honour* was made by a *tape*;' and that they may judge whether 'with the reasons for this we have little concern.' The value of this 'place of honour' as estimated by the Professor himself will then be apparent. Professor Smyth's letter is in answer to the two categorical questions which I put to him, after reading the charge made against him in THE ARCHITECT of February 6:—

1. Did you yourself (apart from Inglis) attempt a measurement of the side of the Pyramid?

2. If so, did you make the measurement with a *tape*?

I have the honour to be, &c.,

π.

Royal Observatory, Edinburgh, February 9, 1869.

DEAR SIR,—Modifying your first question, thus—Did you, yourself (apart from Inglis), attempt a measurement of the length of a side of the Pyramid's base *from socket to socket* (these being the only recognisable accurate terminations of such a base line)? My answer to this is briefly, No!

Your second question, therefore, falls to the ground. But I may add that I would have been horrified at the idea of making the final measurement of any important base line with merely a tape. I have not had any opportunity yet of showing how I would like to make a good measure of the Pyramid's correct and socket-defined base.

The modification of your first question is necessary, because I did make *angular measurements for the azimuth* of two sides successively of the Pyramid's base, *as defined by the sockets*, with an alt-azimuth instrument; and, again, I did, several months before Mr. Inglis opened up any of the sockets, make some excessively rude, tentative, length-measures (with a string) on all four sides of the Pyramid's base, merely to test whether it was more probably square than violently oblong, like the Chaldean temples. The object of these measures being so simple, I was content that my then measuring means were so rude, because there was no definite termination; only indistinct, large dilapidations of masonry at each corner of the base, and no corner could 'see' another, by reason of the hills of rubbish between, and I looked on my effort only as a temporary approximation—just a *first shot*.

Such rude length-measures at that early part of my visit were quite enough to disprove the reputed oblong figure of the Great Pyramid's base, but not enough either to settle that the base of ancient days was an accurate square, or to state the length of the ancient sides for any accurate purposes. When, therefore, Mr. Inglis opened up, just at the end of my visit to the Pyramid, all the four sockets, and they did give definite corner points (whether absolutely the right ones is a matter to be still tested by further monumental evidence as yet not excavated), and when he measured linearly between these sockets, I at once gave his linear measures the place of honour *as compared with mine, made long before, and when there was nothing defined to make the measurement between or upon*. But I did not, and I do not, think that Mr. Inglis's linear measures made by tape were anything like so accurate as pyramid base-line measures should be, or that we should rest content with them. I regard them only as *shot No. 2*; and *shot No. 3*, by whomsoever delivered, should be something so much more accurate, that No. 2 should be no more mentioned in its presence than I consent to my No. 1 being mentioned in presence of Inglis's No. 2. And I remain, &c.,

(Signed) C. PIAZZI SMYTH.

NOTE.—We are indebted to the courtesy of our correspondent for enabling us to insert the above conclusive testimony to the justice of the remarks which excited his displeasure. We may return to the subject of ancient linear dimensions, the only part of the case which has any interest, except of the most strictly private nature.

## NEW BUILDINGS AND RESTORATIONS.

**The General Council in St. Peter's.**—The Holy Father visited on the 6th ult. the works now in progress in the transept. His Holiness was accompanied by the four architects of the church, and by other officials. Some modifications have been made in the original plan. There will be fourteen rows of stalls, arranged *en amphithéâtre*. Each Bishop will have a desk before him. To prevent the dispersion of sound which would be caused by the great elevation of the roof of the transept, a thick curtain will be suspended above the assembly, stretching from one cornice to the other. The arcades, which form a communication between the transept and the two chapels adjoining it, will be entirely closed. The interior surface of the enclosure through which the Prelates will enter the transept will be adorned with portraits of all the Popes who have held Œcumenical Councils.

**The New Wesleyan Schools at Wolstanton.**—Following the erection

of their handsome new chapel in 1866, the Wesleyan body have now completed their original plan of providing new schools. The schools are in strict architectural keeping with the Gothic chapel, and have been erected from the plans of Mr. T. Roberts, of Trentham. The contractor for the building was Mr. W. Sutton, of Newcastle. The premises are situated at the rear of the chapel, and are lofty and commodious, containing a large room 70 feet by 50, and capable of accommodating between 300 and 400 children. The building will also contain an infant school, several class rooms, and a room for the school library. The total cost of the schools, including the land (70*l.* 10*s.* 6*d.*), and the heating, furniture, &c., will amount to about 1,080*l.*

**The Gladstone Testimonial.**—The Premier having expressed a wish that the Liverpool testimonial to himself, raised chiefly by the pence of working men, should be devoted to a convalescent hospital, the foundation-stone will shortly be laid by Mrs. Gladstone.

**A Colossal Concert-room** is about to be built in Paris. It is to contain 5,000, and the orchestra 1,000. Monster concerts, *à la mode de Londres*, are to be the entertainments, and the idea is to give the finest works of the great masters by the best artistes, and yet keep the price within range of every class. The cost of the building is to be 200,000*l.*, and half that sum is already subscribed.

**A New House of Commons.**—The Report of the Select Committee on the House of Commons arrangements is published. The commissioners have decided that an enlarged House of Commons is required, and that no enlargement of the present House is desirable. They propose to take down the present dining-rooms, and to construct a new House on the present site of the dining-rooms and Common Courts. The present House would then be used as a lobby, and accommodations of all kinds would be increased. The New House would hold 569 members and 330 strangers, whereas the present House accommodates 428 members and 263 strangers. The form recommended for the new House is that of a square, with the corners cut off. The proposed floor is to be solid, and the ceiling to be of glass in the centre, with sloping sides of wood. In the construction of the plans great attention has been paid to acoustical conditions.

**Laying the Foundation-stone of St. John's Church, Holmside.**—The ceremony of laying the foundation-stone of this church took place recently at the village of Burnhope, in the parish of Holmside. A large number of people assembled to witness the ceremony. The trowel was presented to Mrs. Earle McGowan by the architect. Mrs. McGowan, after acknowledging the compliment, declared the stone to be duly laid in the name of the Father, Son, and Holy Ghost. A bottle was placed in a cavity in the stone, containing a number of coins, a copy of THE ARCHITECT and Daily Journal, and other documents, and a scroll containing the following inscription: 'This, the Foundation-stone of the Church of St. John, Holmside, was laid by Mrs. Earle McGowan, March 17th, 1869. Rev. Earle McGowan, M.A., Vicar. T. C. Ebdy, M.R.I.B.A., Architect.'

**Worcester Cathedral Restoration.**—The scaffolding round the tower has now been entirely removed. The restoration of this portion of the cathedral has been undertaken at the sole expense of the Earl of Dudley, and is now complete, and the statuary has been fixed. The niches in the north porch have also been filled with statuary, and the whole of the exterior decorations have been finished. The restoration of the interior is proceeding slowly. The magnificent reredos, erected at the cost of the Dean (Dr. Peel), from the design of Mr. Scott, has been completed, with the exception of the wrought metal work, intended to be placed within the open arches on each side of the five niches forming the centre of the composition. The general design of this reredos is similar to other works of the same kind designed by Mr. Scott, especially that of Lichfield; but at Worcester single figures of large size, representing our Blessed Lord and the four Evangelists, take the place of small sculptured groups or emblems: these figures are extremely effective, being distinguishable at a considerable distance—a point often lost sight of in designing this important feature of a church. The reredos is mainly constructed of alabaster, with shafts of coloured marbles and granite, and inlays of *lapis lazuli*, gold, mosaic, malachite, cornelian, spar, and other rich materials. Figures of angels occur between the larger gables, behind which are other angels playing on instruments of music. A profusion of delicate carving in the shape of crockets, crestings, capitals, finials, has been lavished upon the work. The arches are richly moulded, and rising from the centre is a lofty canopy resting upon four shafts of *verde antique*. The screens and other fittings of the choir cannot be proceeded with until a large addition has been made to the restoration fund; but the great hour-bell—an instalment of the new peal—is now in the nave ready to be raised to the tower. It has been founded by Messrs. Taylor, of Loughborough.

**The Runcorn Viaduct**, which is the principal work upon the new route from Liverpool to London, and is just opened for traffic, is about a mile and a half in length, including the approaches, which consist of viaducts of blue Staffordshire brick, 65 arches on the Lancashire side, and 32 on the Cheshire side. The main portion of the work consists of the wrought-iron open lattice girder bridge over the Mersey. It consists of three openings, each 305 ft. wide. The girders rest upon piers of Branley-Fall stone, for which a foundation upon the rock was readily met with. The lattice sides, including the girder, are about 30 ft. deep, and the great structure presents, at a short distance, a very imposing and graceful appearance. There is 75 ft. of headway for the navigation at highwater spring tides. In October last a footway alongside the bridge was opened to the public, and has been found a great convenience as a substitute for the ferry. Express-trains from London to Liverpool will be now able to complete the run in a trifle over four hours, the distance being a little over 200 miles. There will be no stoppage on the way, the water supply being scooped up by the tender from tanks placed between the rails in the neighbourhood of Rugby. The Runcorn works are highly creditable to Mr. Baker, engineer, and to the directors of the London and North-Western Railway Company, for whom they have been executed.



## NOTES ON NOVELTIES.

## Potts's Ventilating Cornice.

This patented invention, which we have carefully examined in model and also in actual use, appears to us to have claims that are unusually strong upon the attention of the public. We say this on account of the very great importance of the object proposed, and which is nothing less than a self-acting and efficient system of ventilation easily applicable to the rooms of dwelling-houses as well as to larger apartments, and on account of the great simplicity and apparent suitability of the means employed for attaining that object. Mr. Potts's invention has less that is absolutely new than the majority of the 'novelties' that come before our notice, but it has the recommendation that it proceeds on principles long known, recognised, and successfully used, and that it carries the application of those principles one step further than it has hitherto gone, and assumes a form readily applicable to new or existing rooms, not excessive in cost, and not merely slightly, but even suggestive of novel, though simple effects of a decorative character.

Without going through the whole history of inventions available for ventilation of the rooms of dwelling-houses, we may appeal to the experience of almost everyone engaged in building to corroborate us when we say that the only useful and simple apparatus readily purchasable and easily applicable is Arnott's valve, which lets out hot air into the chimney flue, and the Sheringham valve, which lets in cold air from outside; while the only other appliance in ordinary use is perforated zinc fixed over openings intended to admit or emit air to or from the room as the case may be. These appliances are all somewhat unsightly, and all in their application liable sometimes to produce discomfort; but they are simple, often effectual, and much used.

We will now describe how Mr. Potts's cornice combines something of the working of all the three. He constructs the cornice of any ordinary room in metal, using by preference zinc, and he separates the hollow space at the back of this cornice by a horizontal division into two chambers or channels—thus forming a channel behind the lower or 'bed' mouldings, which runs continuously round the walls, and a second behind the upper mouldings similarly continuous, and having the ceiling for its upper surface. The extreme upper and the extreme lower mouldings are perforated, and the lower channel being made to communicate with the outer air by a suitable opening, while the upper channel communicates either with the smoke flue or with a separate ventilating outlet flue, carried up alongside of the smoke-flue, the whole is complete. Those of our readers who are at all versed in the science of ventilation will readily understand that the layer of air at the very top of the room, which is the most vitiated portion of the air when a room is in use, especially if lights be also burning, may be expected to be constantly sucked in at the perforations in the topmost mouldings, into the extracting channel, and so drawn off by the flue; while a corresponding volume of fresh air will enter through the lower channel to supply its place, and as far as we have been able to satisfy ourselves of the facts of the case in actual practice this result is satisfactorily attained.

We have already stated that this invention is not entirely new, and some of our readers familiar with the subject may remember that the Society of Arts' medal has been given to a scheme for ventilation having many features similar to those of this plan, but which has been little used in actual building; but we believe that the introduction of two channels—one below the other—is an entirely novel feature, and sufficient to alter the whole character of the contrivance, while Mr. Potts's invention has this additional and very great merit, that it is practically applicable to existing rooms of the most ornamental as well as the plainest character. And we do not see why some modification of the plan might not be made available for hospital ventilation.

There are but few details to add: it may be right to mention that the inventor has succeeded in giving to the outer face of his zinc a surface upon which distemper or lime-white can be applied just as it can upon ordinary plasterer's work. The perforations can be, and in fact in all the specimens we have seen have been, arranged so as to produce a very effective and decidedly novel architectural decoration. It is easy to apply this cornice to rooms where a cornice at present exists, if only the circumstances permit of the ventilating cornice being sufficiently large to include the original cornice within it, and leave space enough between the two for the air channels. The new cornice could be combined with plaster, or carton-pierre, or papier maché enrichments; or a cornice, partly in plaster and partly in perforated zinc, could be used, though not without difficulty. Architects' own profiles can be worked, but not, it is clear, so simply and cheaply as where plaster cornices are used: where, however, considerable lengths of one profile are required, this objection will not be serious, and to that large class of building undertakings for which good selected patterns suffice, this invention is easily applicable. The mouldings, which are procurable in moderate lengths, and of which various sections are obtainable, require some care in mitring and fixing; but the fixing is simple enough: and on this ground they recommend themselves as worth a trial wherever a ventilator has to be introduced. Care should of course be taken that the sectional area of the hollow parts of the cornice and of the openings for inlet and outlet are large enough for the work they have to perform, and we may add that, to spread the current, the perforations of the part of the cornice immediately opposite the inlet are omitted.

No doubt difficulties will arise in the application to actual practice of even such a simple expedient as the one we have described, but we believe that many of them have been already disposed of, and that no obstacles remain such as are likely to prevent the successful application of this invention, if it can be supplied and fixed at prices which do not compare unfavourably with plaster cornices gilt for gilt, and the net prices quoted to us are very near those now charged for plaster cornices of similar character.

## Potts's Patent Moulding for Hanging Pictures.

This invention, which may or may not be used in connection with the perforated cornice already described, consists of a hollow moulding, formed in strong metal, fixed all round the room by the help of strong holdfasts, from which it can be detached at will. The hooks from which the pictures

hang are suspended from the interior of this moulding, within which they run easily, in place of being carried outside as on the ordinary brass rod. The invention is ingenious, and its simpler forms can be put up, we are informed, at much less cost than the brass rods ordinarily employed for the same purpose. It appears to be secure and appropriate to, and not difficult to fix, and may be made to work in with the ordinary cornice of any room.

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

## Pictures by Raphael.

The long gallery at South Kensington in which, greatly to their advantage, the Cartoons of Raphael are at present lodged, has for some time been used as what may be familiarly termed a 'Raphael Room'; that is, as a locality in which may be assembled all objects illustrating or referring to the career of the great painter. Copies of several pilasters of the celebrated 'Loggie,' reduced copies of the equally renowned 'Stanze,' a monochrome copy of Raphael's latest work, the Transfiguration, and a tapestry after the Charge to Peter, are among the principal objects of interest. Lately, however, there have been hung on each side of the entrance two pictures, each of which claims to be a veritable work of the master. On such occasions pretenders (and be it observed that this word does not imply an unfavourable judgment, nor indeed any opinion whatever) must expect to be severely criticised, and to have their credentials strictly examined. Perhaps, however, the first and best step is to examine the internal evidence of genuineness, as documentary evidence of the most irreproachable character will scarcely establish a belief, and will assuredly fail to excite an interest, in works of inferior merit. In the present instances there can happily be no doubt on this essential point. Even those who doubt the authenticity (and it is always a *safe card* to doubt) of the paintings which, to use an Italian phrase, 'wish to be Raphael's,' can scarcely deny their great beauty of execution. On the composition nothing need be said, the one being a *replica* of the well-known Madonna in the Louvre, the other a *replica* of the celebrated 'Cardellino' in the Tribune at Florence. The first-named is the property of the South Kensington Museum, and forms part of the magnificent bequest of the Rev. Chauncy Hare Townshend, which comprises many other paintings, drawings, engravings, books of fine art, coins, and a valuable collection of precious stones. The Cardellino picture belongs to George Verity, Esq., of Southwoods, Thirsk, and possesses a curious and apparently unchallengeable pedigree, which we propose to give in our next number, for the satisfaction of those who may require written authority to justify their admiration.

## Notes for Connoisseurs.

At the sale of the collection of M. Jules Boilly in Paris last week a pen and ink drawing by Murillo, Saint Theresa in ecstasy before the infant Jesus, was purchased, for the Louvre, for the large sum of 66*l.* 8*s.*; a drawing by Clouet (called Janet), Portrait of Diana of Poitiers, fetched 42*l.*; an original pen and ink sketch which Gérard used for his portrait of Madame Récamier, 16 guineas; Géricault's first idea of his picture of the Wreck of the Medusa, pen and ink, 12*l.* 8*s.*; Pen and ink sketch for portrait of Napoleon when First Consul, by Ingres, 30*l.* 8*s.*; Claude's first idea, pen washed in with sepia, one of his great pictures, known as the Great Bridge, 17*l.* 12*s.*; a Bacchanal sketch in sepia by N. Poussin, 66*l.*, and a small pen and ink sketch of Pan and Syrius, by the same, 13*l.* 4*s.*; and a study for the decoration of a vessel, in alto-relievo, by Pierre Puget, 43*l.* 4*s.*

At another sale in Paris, two small works by Ary Scheffer, sketches or replicas of his famous Faust in his Study, and Margaret at her Wheel, sold for 30*l.*; three small works by Decamps also sold well—A Pool surrounded by Rocks in the Forest of Fontainebleau, 126*l.*; a Landscape with figures of Tobias and the Angel, 166*l.*; Sportsman in the Marshes, 160*l.*; The First Day in the Plain of St. Denis, 180*l.*; and a single figure of an Old Sportsman, 90*l.* The following also deserve notice—Fox-hunting by A. de Dreux, 320*l.*; Mephistophiles appearing to Faust, Eugène Delacroix, 304*l.*; Diaz, a troupe of Gipsies, 67*l.* 4*s.*; and a scene in the Forest of Fontainebleau, 68*l.*; Robert-Fleury, Luther taking the Oath at the University in presence of the Elector of Saxony, 120*l.*; Géricault, A Scene of the Deluge, 400*l.*; Ingres, a Study for St. Peter, 80*l.*; Leys, Religious Service in the time of Luther, 292*l.*; Marilhat, a Mosque on the Nile, sunset, 256*l.*; and an Avenue of Palm trees, by the same, 102*l.*; Prud'hon, Andromache, 286*l.*; Troyon, A Horse at the Door of a Farrier's Shop, a small work, 56*l.*; and another small work, view of Saint Cloud, 72*l.* 16*s.*; Rosa Bonheur, Cattle, 188*l.*; and a Shepherd of the Landes with his flock, 176*l.*, both small works; Zien, Marine view in Holland, 60*l.* 16*s.*

Amongst old works, a picture representing the History of Troy, attributed to Momling, was sold at the Paris mart to M. Rutter, for 600*l.*

A mistake occurred last week in the Notes on the Delessert sale, the number of lots being printed as 2,180 instead of 213.

## Architectural Prize-Competition at the Ecole des Beaux-Arts, Paris.

The pupils of the Architectural section who have passed the preparatory trial with success commenced their competitive labours for the Prix de Rome on the 22nd ult., and will not terminate them until August 4; the candidates accepted this year are ten in number.

The names of the Architects in whose ateliers these candidates for the honour of the Roman studentship have studied are as follows. One is announced as having studied under both M. Guénepin and M. Questel, and two as pupils of these same gentlemen separately; three as pupils of M.M. Libas and Ginain, two of M.M. Pacard and Vaudoyer, one of M. Laisné, and one of M. Coquart. The academic standing of the above architects is as follows:—M. Guénepin won the Prix de Rome in 1837, and was decorated with the cross of the Legion of Honour in 1843; M. Questel obtained his first medal in 1846, a medal of the first class in 1855, and is an officer of

the Legion of Honour: M. Libas's name is not in the official list of decorated architects or medallists: M. Ginain obtained the Prix de Rome in 1852: M. Pacard's name is not in the official list: M. Vaudoyer won the Prix de Rome in 1826, is a first class medallist, a member of the Institute, and an officer of the Legion of Honour: M. Laisné obtained a second class medal in 1852, and the cross in 1864: M. Coquart won the Prix de Rome in 1858, and a medal in 1865. It may be added that two of the above named architects were placed on the list for the Architectural jury of the coming *Salon*, but only one of them, M. Vaudoyer, was elected. There is no doubt that many an architect who has obtained no honours may be a very good teacher, and a truly practical one might chance to make a much better master than a theorist covered with honours; but those who support the academic system against, or in preference to, that of articulated pupils must of course, to be consistent, look for masters who have themselves reaped the laurels. While on this subject, it may be remarked that it is a constant complaint amongst French architects themselves that the arts of designing and of constructing buildings are almost divorced; it was the want of practical education in France that gave rise to the new independent School of Architecture which has been noticed in the columns of *THE ARCHITECT* (page 138), and there is no doubt that this school promises to inculcate good sound principles in the minds of its pupils, but it cannot teach the ways of the shop, the management of workmen, or the business of life.

#### The Brussels Exhibition of Paintings.

The annual Exhibition of the Brussels Society of Arts will this year be held in the buildings of the Botanical Gardens. The first day of exhibition, usually July 1, is this year postponed to the 25th of that month, and the gallery will remain open until the last day of September. The President for the year is M. Anspach, the Burgomaster of Brussels, and the Vice-President is M. Cuyllits, President of the Society for Encouragement of Art at Antwerp.

#### Notes from Germany.

The Arch-diocese of Cologne has just despatched its present to the Pope on the occasion of the 50th anniversary of his ordination as priest. It consists of a well-executed painting in oils of the 'Dom' of Cologne, as it will appear when finished, by Professor Conrad, of Dusseldorf. It is mounted in a handsomely carved and gilded frame, designed by M. Conrad, bearing shields and Gothic foliage. The top middle shield bears the Papal arms, the shields at the four corners the arms of the dioceses of Cologne, Trèves, Münster, and Paderborn, whilst along the bottom of the frame runs a scroll with the words, 'Sanctissimo Patri Pio Nonno summo Pontifici per decem lustra Sacerdoti grato pioque animo filii diocesis et civitatis Sanctæ Coloniensis Romanæ Ecclesie fidelis filia.

The stained glass for the great west window of Cologne Cathedral is being prepared by Messrs. Milde & Achelius, of Lubeck, and is said to be nearly ready for fixing. Of the 18 great pictures, 14 are quite finished and 4 nearly so; after which the smaller spaces in the tracery will be taken in hand, so that the window will be complete by Easter 1870. The following subjects, forming part of this work, are now on view at the Public Library in Lubeck:—The daughter of Herod with head of John the Baptist, the Pharisee and the Publican in the Temple, Moses descending the Mount, and Abraham's Sacrifice.

The Committee appointed to examine the competitive plans for the Berlin Cathedral have advanced in their labours so far as to have thrown out twenty-two designs out of the fifty-two which have been sent in. That a Gothic cathedral would be out of place in a city like Berlin is admitted by every member of the Committee, even by those who are considered 'Goths' *par excellence*. Their decision is looked forward to with much interest by the Prussian public.

The rage for limited liability companies seems to have migrated from London to Vienna, where, among many other schemes, several companies have lately been started for building purposes. Notably, there is the 'Building Bank,' with a capital of thirty million florins (three millions sterling), and the 'Vienna Building Society,' which has been created for the purpose of erecting groups of houses, widening and lengthening certain streets, and providing dwellings for the labouring classes. Several architects—amongst them Schmidt, Fellner, Hasenauer, and others—are members of the Boards, and much good in every sense, both practically and aesthetically, is expected from these new combinations. Berlin is only watching the issue of these companies, in order, if desirable, to follow the example thus set by Vienna.

A valuable painting, executed on wood, and attributed to Hans Memling (it can be traced as having existed at Bruges as far back as the year 1477), has just been bought at a sale at the Hôtel Drouet, Paris, by Mr. Rutter, for the South Kensington Museum. The subject is the History of Troy, from its foundation to its destruction, and the treatment is said to be amusingly quaint. The price for which it was knocked down to Mr. Rutter was 15,200 francs (608*l.*)

#### Spain.

The Cathedral of Burgos, which had remained closed since the assassination of the burgomaster, was consecrated afresh during Passion week, and is now open daily for service as before. The Theatre du la Libertad at Malaga has been burnt to the ground; the conflagration spread so rapidly that the building was in flames simultaneously from end to end. There was no loss of life.

#### M. Calamatta.

Milan journals report the death of M. Calamatta, a celebrated engraver, chiefly known for the excellent manner in which he reproduced the works of Raphael. The harmony of tone and the firmness of his touch, tempered withal by softness and delicacy, accorded well with the qualities of the master whom he loved to copy. Calamatta was born at Civita Vecchia in 1802; after studying in Rome under Marchetti and Giangiacomo, he went to France, where he remained until the dream of his life, that of a United Italy, had become a reality. He was a Commander of the Order of Saints Maurice and Lazarus, and at the time of his death Professor of Engraving at the Milan Fine Arts Academy.

#### Ship Canal through the Isthmus of Corinth.

We are informed from *Athens* that the Greek Government had granted to a company of foreign capitalists a concession to cut a ship canal through the Isthmus of Corinth. This is no new idea, it having been proposed to the Austrian Lloyd's more than twenty years ago, but the difficulties were then considered insurmountable, and the negotiations at that time set on foot with the Greek Government fell through. The present concessionists have the advantage of benefiting from the experience gained on the Suez Canal—by the way, not the *first* time the Greeks have learnt from the Egyptians—and are sanguine of success.

#### Failure in the Iron Manufacture.

The failure is announced of Messrs. Brotherhood, the well-known engineers of Chippinham. The liabilities are said to be 160,000*l.*, and the stoppage of the works is a heavy blow to the whole neighbourhood, as it has thrown a large number of men out of employment.

## General.

Mr. G. Gilbert Scott, R.A., has recently received a diploma as Honorary Member of the Imperial and Royal Academy of Vienna. We are glad that this Academy has done itself the honour to recognise in this manner the services of an artist to whom the Gothic revival is largely indebted.

The contract for the erection of a new lighthouse and lighthouse-keeper's residence at Souter Point, near Sunderland, has been let to Mr. Todd, builder, of South Shields, for 8,000*l.*

Works for constructing a railway round Brussels are being urged forward with great activity, and are expected to be terminated by the end of the present year.

A Methodist Cathedral.—The magnificent memorial church which has been erected at Washington by the Methodists of the United States was opened on the 1st day of February. The erection of the structure was in contemplation some sixteen years ago, but the struggle between the North and South occurred, and the work was necessarily delayed. Towards the cost of the enterprise nearly two hundred thousand dollars have been contributed, but the building when fully completed—and this completion involves the introduction of a chime of bells—will have cost a quarter of a million of dollars.

A new town-hall is to be built at Bradford, at a cost of over 50,000*l.*

Twelve gigantic columns of granite intended for the façade of the church of St. Paul at Rome are approaching their completion at the quarries of Bavero, Lago Maggiore.

The pinnacle of Totnes Church, Devon, was blown down during the late gale. The débris fell through the roof; but although several narrow escapes are reported, no lives were lost.

A few days since some fragments of ancient sculpture were dug up close to the cathedral at Bayeux. One figure is supposed to represent the god *Mén*, an Asiatic divinity of Phœnician origin.

The Royal Academy Exhibition of this year is likely to be marked by the appearance of one of our best-known painters in water colours in a new character. Mr. Birket Foster is now in the far west of Cornwall, and earnestly occupied in preparing a landscape of considerable size, in oil, of a coast scene. A second picture of similar character, and wrought in like method of the above, is already far advanced.

The Collection of Historical Portraits, the property of Mr. John Webb, of Grafton Street, London, and consisting chiefly of distinguished French personages from the time of François I. to that of Louis XVI., also some Sèvres porcelain, &c., have been disposed of by auction, the proceeds amounting to more than 4,600*l.*

The New Pier at Morecambe, which is 900 feet long, has just been opened to the public. Its total cost will be nearly 10,000*l.* The approach to the pier is nearly opposite to the Mechanics' Institution, and it is said to be one of the most handsome structures of the kind in England. After the chairman of the Company had formally declared the pier open, Mr. H. C. McCrea, of Halifax, chairman of the Blackpool Pier Company, and one of the directors of this, addressed the assembly, pointing out the advantages which had resulted to Blackpool from the opening of the pier there. He saw no reason why Morecambe should not be similarly successful. The Blackpool Company had realised a dividend of 12½ per cent.

The Works for the construction of the New North Bridge at Halifax have been commenced with vigour. The buildings known as Tillotson's Buildings, at the south end of the old bridge, are nearly demolished, and the foundations for the piers are being put in. The first stone of this important work will be formally laid on Wednesday, 14th inst.

A Stained-Glass Window has just been placed in Lichfield Cathedral. The chief features are six large figures in the six divisions of the window, representing St. Michael, St. Joseph, the Virgin and Child, and in the three others the Magi. At the extreme top of the window is the representation of the Holy Trinity, and underneath the Blessed Virgin and St. Simeon and Child. Beneath the six large figures above referred to are six separate Scriptural subjects, viz. the Annunciation, the Angel appearing to Joseph, the Nativity, Kings Journeying, Kings before Herod, and the Flight into Egypt, the other portions of the window being filled with exquisite designs of a floral and architectural character.

Singular Discovery of One of Ruysdael's Pictures at Windsor.—Mr. Putnam, of High Street, Eton, recently purchased for a small sum an old picture from a furniture dealer in Windsor. Upon cleaning and examining the painting, it was discovered to be a genuine Ruysdael. The subject is a woodland scene, with cottage ruins and a brook, and several figures. It is a gem of art, and has a number of the painter's private marks as well as his signature. Jacob Ruysdael painted in the seventeenth century, and the value of this picture, which has been examined by a number of connoisseurs, is set at several hundred guineas.

The Leamington Local Board have accepted an offer made by the Earl of Warwick to take the whole of the sewage of the town for a term of thirty years, and dispose of it by irrigation on his lordship's estate, at a distance of from two to three miles south of Leamington. The local board are to lay down the requisite mains, construct the necessary works, and pump the sewage to a given point on the estate, and in return his lordship will pay the board 450*l.* annually for the sewage. The arrangement will come into operation on March 25, 1870, by which time Lord Warwick will be prepared to dispose of the sewage on his estate.

A Lock-out is threatened at Bradford in the building trade. The master builders having given notice to their workpeople that, on and after May 3, 7½*l.* per hour shall be the ordinary pay of skilled workmen, that the rules against the machine and quarry-worked stone shall be rescinded, and that all disputes henceforth shall be settled by conciliation or arbitration, the Masons' Society have expressed their determination not to accept the proposition of the masters, which they regard as inimical to their interests. If no arrangement to avert such a result can be effected within the coming month, a lock-out is inevitable.

On Tuesday last the first stone of a new suburban village which is about to be built at Loughborough Park, Brixton, by the Suburban Village Company (Limited), was laid by Lord Shaftesbury. This company was started in July 1866 to supply a want to which at that time public opinion was much directed—namely, good and cheap dwellings for the working classes, thousands of whom had been, or were about to be, deprived of their houses, either by the metropolitan lines of railway or by the course of other large works and public improvements. The leasehold of the Loughborough Park estate, for a period of ninety-nine years, was purchased from the Ecclesiastical Commissioners on very reasonable terms, and this has been laid out in plots for dwellings. The whole extent of ground thus acquired is about twenty-six acres. It has been carefully planned out into six main streets, each house having its garden in the rear. The houses, which are designed by Mr. Pite, the architect, are to be built in ornamental brick, and will contain six, eight, or ten rooms, exactly as the shareholder and intending occupier may wish. The rules of the society are so framed that anyone can purchase his house at once on payment of the amount down, or in one or two years, or he may spread over his payments in the form of rent for seven, fourteen, or twenty-one years. Thus, if a shareholder selects a number, one house, the price of which is 200*l.*, and pays for it by yearly instalments in 21 years, he would have to pay 19*l.* a year and 21 years' ground rent at 3*l.* 5*s.* a year, so that at the end of the 21 years he would have paid 470*l.* for a 200*l.* house. But, on the other hand, it must be recollected that at the end of his twenty-one years the house becomes absolutely his own property, and that for the same description of house elsewhere he would have to pay at least one-third more rent, and at the end of his twenty-one years have no more title to the property than on the first day he entered on its occupancy. After the stone was laid, Lord Shaftesbury, in a few earnest remarks, dwelt upon these advantages, and above all upon the enormous benefits which must accrue to the working men from having clean, well-ventilated, and wholesome dwellings, instead of being huddled together as they now were in crowded sties, the very atmosphere of which so depressed the vital system that drinking and all its hideous train of vices were almost forced upon the poor. He avoided expressing any opinion as to the financial results of the company, but did not conceal his admiration of the good work they had begun, and earnestly hoped that it would be as successful to them as it must in any case be beneficial to the working men who would tenant the houses. He believed in the goodness of the scheme, as he believed in the excellency of most of the efforts which were now fortunately being made for the benefit of the artisan and mechanic, and all the upper class of handicraftsmen, and he thought the day was not far distant when as classes they could be pointed to as models of frugality, temperance, and industry. The Hon. Arthur Kinnaird also addressed a few words to those who had come to witness the laying of the stone, after which the proceedings, which were very brief, terminated.

There are three projects before the public for crossing the Straits of Dover. Mr. Hawkshaw has for a long time past been engaged in preparing plans and making soundings for a tunnel. Eminent French engineers favour the proposal of one of their number, who has suggested the construction of a bridge. Another proposal is for the construction of an enormous raft on which trains of railway carriages shall be carried across from one railway to another. According to the *Railway News* a fourth scheme has now been proposed. The designer, Mr. Purkis, proposes that an iron tube for a railway shall be laid across from the English to the French coast, and be supported at a depth of about 50 feet below the surface of the water by iron stanchions or tressels, the feet of which will rest upon the bed of the straits. The tube is to be in its outside diameter 23 feet 6 inches, and with a view of giving it sufficient strength to resist the pressure of the weight of water, to sustain the weight of the trains between the points of support, and to allow for the decay caused by the action of the water, the tube is to be of cast iron 8 inches in thickness, being nearly twice the thickness of the armour-plates of the *Warrior* ironclad. The length of the tube between each pair of legs or supports is to be 300 feet, and the weight of each of these sections is to be 3,000 tons. Each of these lengths of 300 feet is to be made up of 8 segments of 37 feet 6 inches, and these are to be firmly bolted together by means of 100 steel bolts passing through the internal flanges of each length of tube. Ask the bold engineer how these segments are to be put together in the water, and he explains the matter in the most practical manner. Each segment will be made water-tight by a bulkhead, and will be lowered until it is brought into exact position with the portion previously fixed, and when made fast by the bolts the near bulkhead will be removed, and the workmen will pass on to the next section. The stanchions which will have to carry the tube are made, as it may be supposed, of enormous strength. They will vary in length according to the depth of the water. The largest will be 106 feet in length; it will be formed hollow, tapering from each end to the middle, where it will be 7 feet 2 inches in diameter, the

ends being 5 feet 8 inches in diameter. They will be cast in three pieces, and bolted together by cast-steel bolts on inside flanges. The weight of each of these legs or stanchions will be 454 tons. In order to give them a sure foothold at the bottom of the sea, they will be fastened by bolts to discs of metal 25 feet in diameter, and weighing 85 tons. To prevent any lateral motion, the feet of these stanchions will be held together by tension bars 100 feet long, and weighing 60 tons, and a similar tension bar, though of less length, will connect and hold the stanchion at the upper extremity. The bolts that are to hold and keep the stanchions apart weigh not less than 4½ tons each. The transverse strength of the tube when completed has been satisfactorily ascertained to be 27,034 tons, and if loaded in the middle it would safely carry 2,000 tons weight. In order to sink the tube, each section of 300 feet will be loaded with 433 tons of rails, air and water tubes, and of 1,800 tons of ballast or shingle, each segment as it is lowered being provided with its due share of dead weight, to ensure the necessary displacement of water. The pressure of the flow of the tides will be equal to 450 lb. on every square foot of the cross sectional area, but the stanchions are calculated to be of sufficient strength to resist any movement from this cause. The ventilation of the tube is to be provided by stationary steam power at one of the entrances to the tube, which will force a sufficiency of air through a channel constructed along the inner roof of the tube to a point about midway of its entire length, where it will be discharged and force itself along the tube to either end, providing at the same time a perfect system of ventilation. The draining of the tube is duly provided for; the water will be collected in the lower part of the tube, and as the locomotives pass through they will take up the water in a trough, in the same manner as the engines are supplied on the London and North-Western Railway while travelling. The casting of the various portions of the work is to be done in a dock to be formed on the coast, and the various portions, as they are cast, are to be floated by letting in water, and taken out to sea by pontoons, to which they will be attached by suitable chains. The cost of this work is set down at from ten to fifteen millions.

**Discovery of a Tumulus near Penrith.**—A discovery of a very interesting character to archaeologists has been made on the farm of Moorhouses, near to Penrith, which will likely form the subject of an important and interesting investigation at the next meeting of the Archaeological Society. It appears that on Wednesday last ploughmen were engaged at work in a field on the farm at Moorhouses, and in order to facilitate the progress of the plough several large stones had to be removed. Under one of these stones the ploughman discovered a large urn turned upside down and protected from the surface by a large stone supported by three perpendicular stones placed in the form of a triangle. The man thought he had discovered a treasure, and on lifting the urn he found to his disappointment that it only contained a quantity of bones and ashes instead of the great prize that was expected. In his simple ignorance he threw the urn, which was perfect, aside and it broke. The urn was made of clay, and was ornamented around the exterior, and when the broken pieces are fitted into each other, a good idea may be formed of its original dimensions. It is computed to have been about a foot in height, and about nine inches in diameter at the top. It was filled with charred bones nearly to the top, and from the ashes amongst them it was evident that many of them had crumbled to dust. Many of the bones are of a very curious form, but many of the small pieces can be fitted into each other, such as the jaw and parts of the skull, in such a way as to leave no doubt of their being the remains of a human being. There are also a few small teeth, and from the formation of the under jaw it is conjectured from its small size to have been that of a female. Be that as it may, however, there they are, and a very interesting collection for the examination and the study of those who are interested in such matters. The whole might have been lost sight of altogether and been ploughed into the soil again had the circumstance not fortunately reached the ears of Mr. Valance Stalker, of Penrith, who takes a deep interest in archaeology, and he at once proceeded to the place and secured what to him was a much greater treasure than it was to the ploughman. The urn and bones are now in his possession, and he shows them with pleasure to any one who wishes to inspect this curious relic of the past.

**The Breach in the Bank of the Ouse, near King's Lynn,** which threatened to renew the disastrous inundations of 1862, has, it is stated, been effectually secured. The danger, which was very great, appears to have been met with much promptness, and the measures taken to prevent further mischief are reported by telegraph to have been successful.

**Trouville.**—Messrs. Herries & Co., and Messrs. Robarts, Lubbock, & Co., have notified that they will receive subscriptions for an issue of 400,000*l.* seven per cent. mortgage bonds on the *Trouville Association* (Limited), secured by a property at Trouville, the well-known French Brighton on the Normandy coast, which it is proposed to enlarge and generally develop by the erection of houses and the disposal of building lots. The debentures are to be of 10*l.* each, redeemable in about seven years, with a bonus of 20 per cent., and a share in any surplus profits that may be realised.

**Paris Workmen.**—Bertall, in a comic page of the Paris 'Illustration,' gives the following advice apropos of the present difficulty of disposing of the large number of workmen who have been attracted to the Metropolis by the Hausmann mania, and who are now likely to be thrown out of employ, if the proposed stoppage of the public works is really carried out. 'For all these men,' he says, 'only one thing can be done. You must carry all the soil of the Champ de Mars to the Buttes Montmartre, and then carry all the soil now on the Buttes Montmartre to the Champ de Mars. This is a simple way out of the difficulty, and can injure no one!'

#### MEETINGS OF TECHNICAL AND LEARNED SOCIETIES.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Monday, April 5, at 8 P.M.  
 INSTITUTION OF CIVIL ENGINEERS.—Tuesday, April 6, at 8 P.M.  
 SOCIETY OF ARTS.—Wednesday, April 7, at 8 P.M.  
 ASSOCIATED ARTS INSTITUTE.—Saturday, April 3, at 8.15 P.M.



# The Architect.

## TO OUR READERS.



WE have great pleasure in announcing to our Subscribers and Friends, and the Public, that the success which has attended THE ARCHITECT through the three months during which it has been established has been so marked, and the consequent pressure of business so great, that it has become absolutely necessary to take separate premises without further delay.

These have been secured in the south side of the Strand, a little east of Somerset House; and, as soon as the necessary preliminaries have been completed, the publishing and editorial offices of THE ARCHITECT will both be transferred to that address, where the excellent facilities offered by a roomy and well-arranged place of business will assist us materially in carrying on the affairs of the Journal.

The actual transfer of our offices to this their permanent position will be made known as soon as it has taken place: in the mean time we cannot allow this opportunity to pass without expressing our grateful thanks to the public whose support we have so largely received, and to the very many Architects, Artists, and other friends who have assisted us by their contributions, suggestions, and information.

This public support and private assistance has come from so many quarters—in very many instances having been proffered unsought—that we cannot but feel that, in the establishment of this Journal, we have supplied a public want. It will be our endeavour to continue THE ARCHITECT as we have begun it; and not merely so, but to make constant advances, to supply more and more completely the needs of our readers as they become known to us, and to keep up with the progress which the Arts of Construction are daily making.

It has been the good fortune of this Journal to make its start at a time when great and perceptible changes are beginning to make their presence felt. If we are to prognosticate the future from the history of the past, the remainder of this century is likely to witness an astonishing advance in the Art of Architecture, the Science of Engineering, and the Practice of Building. To point the way, to chronicle the progress made in any department of human activity, to help by every means available the pioneers of wholesome reforms, is peculiarly the privilege of the technical and professional press; and THE ARCHITECT trusts that its services may not be found less valuable to Art, Architecture, Civil Engineering, and Building, than those which have been rendered by other periodicals, identified with their respective interests, to Law or Medicine, Manufactures or Agriculture, to Music or to Literature.

## ARCHITECTURE IN MANCHESTER.

A STRANGER passing through Manchester will not be qualified to discourse on all the architectural doings of the city and neighbourhood; but he will in even a cursory glance be struck with the magnitude and merit of some of the edifices progressing or recently completed.

Messrs. Mills and Murgatroyd have made "a clean sweep" of two large stone edifices—the Railway Terminus in London Road, and Newall's Buildings in Market Street—erecting in lieu of the former work of Messrs. Blyth and Carpenter, a large stone building of astylar Italian design. There was little of monumental character in the building it replaces: there is, if anything, less in the new one, a want very likely attributable to the exigencies of the site. The structure looks in front like a large Manchester warehouse—no mean work to compare it with—but, looking at it as a railway terminus or screen to an up and down line, one can scarce refrain from wishing its designers could have adopted as their model the façade of the Great Northern Terminus\* at King's Cross, without its ugliness. Mr.

\* Since penning these remarks, we are concerned to see that workmen are now engaged in removing, at an immense expense, the vast laminated timber trusses of this fine terminus. Whether owing to inherent mal-construction, or to the use of the material in so exposed a position, we cannot say; but they have failed altogether. The absence of tie rods and complicated features gave an appropriate simplicity to the form of this vast roof; but for constructive purposes its design seems to have been too simple unfortunately.

Cubitt's terminus has, despite its absence of architectonic or 'architecturesque' treatment, a bold monumental air, vastly expressive of what it is—the fag-end of a couple of gigantic highways.

Newall's Buildings, the other large edifice, has been entirely taken down, and its site been absorbed by the Royal Exchange, now erecting by the same architects. The space enclosed presents only a vast hoarding and system of scaffolding for masonry; but this 'old' building demands a few words 'in memoriam.' It was erected only thirty-five years ago by a rich grocer of the then 'town of Manchester,' at a cost of some 30,000*l.*; and was a very monster of architectural composition, in which cast iron pillars, Greek colonnades, heavy stone attics and pediments, domes, weather-vanes and windows, severally strove for pre-eminence. It was a sort of Woolston Hall, that had grown up in Market Street 'spontaneous,' as Mr. Mark Tapley would say: and it is gone from among us; without, for aught we know, a single drawing to show what it was—a fact to be grieved at in a political, if not an architectural sense; for Newall's Buildings was not without its history. It was, if we mistake not, the headquarters from first to last of the now historic doings of the Anti-Corn Law League. *Sic transit*—and in a brief thirty-five years.

The site of the new Town Hall is now cleared and enclosed with a hoarding, but as yet nothing can be seen of the building: its design is, however, well known to the general public, which is more than can be said of the design for the New Exchange. The two edifices will have good sites, at the confluence of some four or five important thoroughfares, but neither of them so good as that possessed by the Royal Infirmary—an edifice of very ordinary character, or rather of very extraordinary absence of character.

Hard by the site of Mr. Waterhouse's new building we came upon a new bank just erected by Mr. George Truefitt, for the firm of Brooks & Co., old clients of the architect's, who seem to have given him *carte blanche* for his pencil. It is a stone edifice of free Gothic character, with a profusion of floral carving and wrought metal-work, admirably executed. This bank may be considered Mr. Truefitt's *chef-d'œuvre*. Its design is, like all his works, very original and masterly. Looking at this bank, and at some other commercial buildings that may now be seen in Manchester and Liverpool, such as Mr. Walters' bank in Mosley Street, Manchester, and Compton House in Church Street, Liverpool, one can hardly suppress the obvious inquiry—'When will a London banker or merchant commission an architect to raise in our metropolis such a building as either of these structures?' Is it the leasehold tenure of ground in London, or its want of stone, or of money, or of taste? Somehow, all that the London architect 'of the period' has at his command is the manipulation of party-coloured streaks and voussoirs of brickwork, sickening to contemplate, all over the metropolis; giving scope indeed for *ingenuity* in the 'high art' of—'making a silk purse out of a sow's ear,' but little beyond it. It needs small reflection to perceive that a walk of art which restricts the efforts of our architects to courses of brickwork—

Black bricks and white bricks,  
Yellow, red, and gray,  
Mingle, mingle, mingle:  
You that mingle may—

three inches, six inches, nine inches, &c. at a stroke, is likely to signally cripple the fine-art power of our architects. It is 'a style' we should much like to see the last of. In Liverpool we only came upon one sample of it by an architect, and that, it must be owned, a very good one—a convent of Sisters of Mercy on Mount Pleasant: evidently the work of a master, unknown to us. Peradventure it is the work of some London architect, 'to the manner born,' for in Liverpool the stone is too plentiful, and the bricks fortunately are too coarse and mono-chromous, to encourage its architects to emulate Southwark Street in the Borough, and many other places we could—and won't—name.

To return, however, to Manchester. Messrs. Joseph Hansom & Son are erecting a very large conventual church for the Jesuits in Oxford Street. The foundations, carried up with a liberal use of vast inverted arches, and little, if any, concrete, indicate the plan pretty clearly. Nave, lateral aisles, chapels, and apsidal sanctuary, with, in front towards the street, a spacious narthex, extending across the church. This feature is to be carried high above the church roofs by way of an oblong tower of tripartite form, crowned with a central lantern some 320 feet in height. The design is exceedingly striking and original.

Alderley in Cheshire is (as Richmond to London) quite an offshoot of Manchester, whose rich men's country mansions, dotted about the village, are well worth a visit from the architectural tourist. It has

had for some time a large Decorated church, by Mr. Crowther, of Manchester; and, till lately, it was the opprobrium of this towerless edifice that the Wesleyan Methodists had contrived to raise hard by it a tower and spire (with public clock, &c.) some 115 feet high. We observed, however, on passing the station, that the Church of England has asserted its old supremacy by adding (doubtless from Mr. Crowther's designs) a magnificent steeple to the church. It consists of a very lofty and massive tower and spire, with the low bell-chamber so peculiar to, and so frequently found in, old English examples. The design, though chaste, as are all this gentleman's works, is by no means wanting in originality, however much it may be in quaintness and oddity, now so over-prized. Mr. Crowther is not the only English architect versed in old English ecclesiastical architecture; but he has the unfortunately rare merit of adhering to his first love, to the exclusion of Gallicanisms and other exotic fancies. There is, nevertheless, no feebleness or servile copyism in his many excellent works in and around Manchester, St. Alban's, St. Mary's, Moss Side, &c.

In street architecture (or rather in architectural streets) Manchester is unquestionably inferior to Liverpool; but there are not many towns in England whose 'architecturesque' streets will vie with the upper half of King Street, Manchester, with its handsome bank and insurance offices; to say nothing of the old Town Hall, not, we trust, to be taken down or altered for many long years to come. Its design is somewhat too eclectic to be classed with pure Greek; but it is nevertheless, even shorn of its crowning sculpture (much to the discredit of the Corporation), one of the most dignified and majestic classic edifices in England. We have in London a good copy of the Erechtheum example of the Ionic Order in Mr. Inwood's St. Pancras Church; but no edifice of Greek architecture that in merit of composition will compare, small though it is, with the old Town Hall in Manchester, by Francis Goodwin. Thus much it may be well to say; or, as the edifice is to be now appropriated for 'town's offices,' we may one day hear of its being put into the hands of some enthusiastic Sir Wykeham de Waynflete, to be 're-cast' down to the latest recipe of some new ecclesiastical society.

### OUR RAMBLER

IN AND ABOUT THE HOUSES OF PARLIAMENT.

TO say that the English people have witnessed a remarkable revival in all intellectual work, during the last quarter of a century mainly, is only to state a fact, the results of which are before our eyes every day. Take literature for example, and it will be seen how changed its tone as a teacher, and how increased its activity as an occupation has become since the beginning of the century! The very same conditions of progress have been fulfilling themselves in the arts which every civilised people practise. In olden times learning and the instinct for art were the gifts of the few, while the enjoyment of them was mainly the heritage of the rich. It has happily, however, been the distinction of our own age to popularise art as we have popularised literature. The students of the one and the amateurs of the other now number their hundreds as against units in former times not long past. The result—we may, indeed, call it the penalty—is that the *colossal* genius is now an almost impossible growth where so many enter the arena of fame, and when, consequently, the spirit of competition confines the chances of distinction to those who work in smaller spheres. So it is that while we have no Shakspeare in poetry or Addison in prose, no Reynolds in painting or Flaxman in sculpture, we have now those arts of intellect—if we may so term them—more widely spread, with a result which permeates the mass of the people with increased sources of cultivation and refinement.

Our own special art of Architecture, the mother of the fine arts, being more technical because less imitative, had certainly fallen lower than any of its kindred at the beginning of this century. It is not too much to say that thirty or forty years ago architecture in this country was at its lowest ebb. Little, if any public interest was devoted to it. County surveyors were its most distinguished professors, while churchwardens and vestrymen were its most conspicuous patrons. Our own native styles struggling hard for an existence from the Elizabethan down through the Jacobean style, and into the time of Queen Anne, finally succumbed under the importation of Italian fashions. It is true that the individual genius of two or three men, such as Wren and Inigo Jones, had given a kind of vitality to styles which never fitted to either our feelings or our habits. Subsequently, such architects as Chambers, Gibbs, and Vanbrugh, only intensified the anomaly by working in more academic methods. As there was no inherent English spirit in the style they practised to admit of development, the natural result followed when such men as these died out. There was nothing left but mere dry as dust, rule and compass work, for the would-be-student, and it is not surprising, therefore, that the art fell into incompetent and unfeeling hands.

These, and many other such reflections, possibly tedious but not the less true, filled the mind of the Rambler the other day as he

wandered about and through Sir Charles Barry's great work at Westminster. In the Houses of Parliament we possess the first great *protest* against the de-nationalised styles bequeathed to us by the eighteenth century. Regarded in this light (and in any other its character as an historical work of art will be lost to us), it is truly a glorious effort at reaction. The more it is looked at, the more wonder will be excited by the completeness and the *art* of its conception; the more we examine into it, the more we must be struck by the *thoroughness* of its detail. Nothing is left which craves for apology or extenuation; rare praise one may think for the largest and most important work of modern architecture.

Why should the Rambler betake himself to a subject which has a little of novelty or freshness about it as the Houses of Parliament, a work with which we are all tolerably familiar? is a question which we can imagine will arise in the minds of many of our readers. Our justification is simple enough. Not only is there every year new and interesting architectural matter to be discovered in and about the Palace of Westminster, but the building itself, even as Sir Charles Barry left it, can never become old or stale to this generation at least. It is, so to speak, the initial letter of that chapter in our architectural history which the age has been composing. True, we may entertain varying and conflicting predilections as to the style or period of art on which it is based; but this optimist, or rather archaeological kind of criticism is rapidly and happily dying out. We take a work now for what it is, and not for what it *resembles*. We never think of quarrelling with a man's words so long as we appreciate his meaning and admire his sentiment. In the design of the Houses of Parliament it may be that the words are the words of the fifteenth century, but the voice is the voice of our own time. That must be admitted on a fair view of so great a work; for though amateur critics outside and amateur M.P.s inside the Houses may carp at the gargoyles and crockets, at the so-called 'useless' ornament (as if ornament were ever intended to be useful), and stunted light, yet the work as a whole will remain as a monument of our time, equally worthy of the mind which conceived and of the people who produced it.

It is in this latter respect that the Houses of Parliament, as an architectural work, does England an honour which few would have prophesied for it at its first inception. It has cost altogether more, much more, than was ever intended to be expended on it. But we who inherit so noble a monument of our time should be only too proud, one would think, to recognise the genius and the spirit which have raised a work so sumptuous, visibly embodying, as it does, the history of the greatest political Constitution which the world has yet seen. Great nations in all ages have reared grand works. Princes offer sumptuous presents, not on considerations of mere utility, but out of the respect they owe to their own rank and wealth. So it should be even with our 'shop-keeping' nation. The Houses of Parliament might possibly have been reared so as to answer all the practical uses of the Legislature of the realm if its design had been modelled on the type of a city warehouse. But who is there in that case, who would not, even half-a-century hence, regard such work as a mere monument of meanness in an age which had thrown up all sense of historical dignity or respect for its own prestige? We judge, instinctively, of the old nations of the world, not by the records we possess of their habits of life and thought so much as by the works which they have left us. These are the veritable and visible emblems of their power and state, and remain to impress us even in the last stages of their decay.

The Rambler avows a thorough repugnance to this modern spirit of Utilitarianism in art. 'Give us only what we *want*' is the prevailing cry which modern English wisdom utters aloud in our streets. We, on our part, choose rather to encourage, so far as we can, that more generous and patriotic spirit in public works which not only pays regard to bare necessities, but to the verdict which posterity will form of us by the material records we leave.

Ten or twenty years before the Houses of Parliament were designed such a work as we now possess would have been quite impossible in the then condition of architecture and its subsidiary arts in this country. We mention these subsidiary arts because the employment of them in Barry's masterpiece initiated to a great extent a new era in modern architecture. Previously the architect rarely, if ever, shaped his conceptions for any higher artistic work than his specification would cover. Without derogating from the merits of Sir Charles Barry as the veritable architect of the Palace of Westminster, it is only due to the genius and memory of the late Prince Consort to say, that he constantly regarded, and as Chairman of the Fine Arts Commission (an organisation believed to have been created at his suggestion) zealously endeavoured to promote the employment of the arts of painting and sculpture as necessary accessories to a building of such imperial character. So it is that we find in 'the Houses' some of the most worthy specimens of modern art in painting and sculpture, contributing to the effect of the architectural design. In sculpture we have works from the hands of such men as Gibson and Foley; and if the work of the former is hardly up to the mark to which some of his other productions have raised his reputation, it is at least not unworthy of it. The statue of the architect himself is in our estimation equal to any work which even Mr. Foley has produced. Under the head of sculpture one may point the visitor, though almost unnecessarily, to the statues in St. Stephen's Hall. Up to this moment there is no finer collection of modern British sculpture to be seen than is contained in this apartment. The subjects of the statues

which fill the bays are as varied as the authors of them, and yet it would be a very invidious task to select the most excellent. Why is it, we may ask, in parenthesis, that the same sculptors cannot display equal talent when they are commissioned for statues in our streets and squares?

In respect of the painter's art, the Houses present us with specimens of the most polyglot character. Artists of various schools in regard of style, but all of high repute, have contributed to the decoration of the architecture; not in works framed and glazed in true drawing-room fashion, but such as are designed to their allotted spaces in the building, and executed by processes which are intended for architectural effect.

On this point, however, the Rambler must offer a word of remonstrance and complaint in view of the failure which has followed the work of the fresco painters whose works adorn or, rather, were intended to adorn the interior of the palace. If there is much to admire in the art displayed as to design, there is much to be deprecated in the *science* of the painter as to his processes. Some, nay many of the frescoes at Westminster are already reduced to a state of dilapidation which reflects sadly on the reputation of modern work. In nearly every corridor and lobby we see pictures which a few years ago were perfect in their surface as any canvase-painting, now presenting figures without heads or extremities, unless we accept as such the bare outline revealed to us on patches of wall-plaster, where elaborate paintings of heads and hands were once visible. It is surely due to the reputation of the Fine Arts Commission who presided over such works as these, that some steps should be taken to discover by any and every process of inquiry why it is that the works of our leading painters executed in a perfectly dry and well-ventilated building should thus have 'gone to the wall' in the most literal sense of that phrase. It is hard to discover an excuse for such results happening to works executed under such ambitious auspices. If one may argue from what has already taken place to what may yet occur, we do not venture too far in saying that the most of the frescoes in the Houses will be wholly invisible to another generation, unless some judicious measures are adopted, not only to arrest the ravages which are already visible on many of the paintings, but to prevent a repetition of them. We observe with some satisfaction that precautionary steps have already been taken to arrest the decay of the frescoes in the corridor between the two chambers. The surfaces of some of the pictures have been glazed, and it may be admitted that the effect of the expedient in no way interferes with the artist's work. The glass being inserted on the same wall-plane as the windows above, the frescoes seem to be, in all hours of *daylight* at least, quite free from glare and reflection. Indeed the glazing is much less noticed than it would be on most of the pictures one sees in public or private galleries.

What is to become of the two famous works of Maclise in the Royal Gallery, is a question which may well excite apprehension when one sees the decay which is gradually going on in smaller and drier apartments. The Royal Gallery is about the largest room in the building, and never seems to be of even temperature. It is also one of the least occupied spaces as regards use, and anyone must see that the damp atmosphere which collects in it—say during a winter night—must inevitably destroy the wall paintings in it, whatever the pigment or the medium which the artist has employed. While speaking of this apartment, we cannot help noticing the change which has been made in the quality or treatment of the coloured glass in the upper range of windows. Formerly the glass in these windows was very richly coloured, but we understand that Mr. Maclise required the removal of it in order that the effect of his two great frescoes might not be so seriously interfered with. Mr. Edward Barry, the present architect of the 'Houses,' has shown no less discretion than good taste in substituting the new windows, which are almost *grisaille* in their character. He has only done what, as we happen to think, his father would have thoroughly approved if he had lived to see those frescoes completed. No higher compliment can be paid to the work as we now see it.

The Royal Gallery is undoubtedly the *pièce de résistance* for the visitors who weekly file through the different chambers of the House of Parliament. It is not only the largest apartment in the building, but it contains, as we have already noted, the two great pictures by Maclise, embodying subjects which every English mind is pardonably gratified in contemplating—'The Meeting of Wellington and Blücher after the Victory of Waterloo,' and 'The Death of Nelson at Trafalgar.' Within the last few months the attractions of this noble chamber have been greatly enhanced. Not only has the whole of the architectural detail been gracefully emphasised in coloured decoration by the skill of Mr. Crace, working under the guidance of Mr. Edward Barry, but the art of the sculptor, hitherto 'conspicuous by its absence,' has been employed to assist the general effect and give historical interest to the architecture.

The eight niches which flank the four openings in the Gallery are now filled, or are about to be filled, with full-sized statues representing the Sovereigns who reigned over the more warlike periods of English history. The statues which we see placed at present are those of Alfred the Great, William the Conqueror, Richard I. (Cœur-de-Lion), and Edward III. It is only doing bare justice to the sculptor, Mr. J. Birnie Philip we believe, to say that his statues, whether in respect of portraiture or in architectural treatment, are equal to any artistic work which the building contains. Indeed, the

Rambler, if he felt disposed to indulge in mere eulogy, might go much farther in speaking of them, but he prefers to ask his readers to see and judge for themselves.

These statues are distinguished by a novelty of treatment which does great credit to the architect. At first sight it may appear a bold expedient to gild the entire surface of figures exceeding the life size. The effect, however, in the apartment we are speaking of is eminently successful. Every part of the chamber is worked up in colour, and the more elaborate detail is brought out by gilding. Placing bare stone statues in niches whose architectural forms are richly decorated, would have had no other effect than to give a ghostly and essentially mean appearance to works of sculpture which are meant to represent some of the most illustrious personages in our national history. As we see them at present, they are not only true to their full intention as historical statues, but form, as they undoubtedly ought, the most sumptuous features of the Gallery they occupy.

The Rambler has already occupied his allotted space here; and is yet only too conscious that he has advanced little farther than the threshold of his subject. To a great extent the original work of the Houses of Parliament is new to our readers of to-day, while the last few years have seen much in the way of art-work produced 'in and about' the Palace, which not only deserves but demands notice of a more or less critical kind in these pages. We shall be glad, therefore, to continue our ramble in these precincts on another occasion.

## CONTEMPORARY ART ON THE CONTINENT.

### Exhibition of French and Flemish Pictures—Sixteenth Season.

CONTEMPORARY art on the Continent is no longer the unexplored field which ten or fifteen years back incited the research of adventurous connoisseurs and collectors. The eye of exhibition-goers in London has become used to foreign modes of artistic expression, and some few among French and Flemish painters, such as the Bonheurs, Gérôme, Frère, Scheffer, are, through their works, as familiar as Landseer, Millais, or Faed. The annual Exhibition, now open for the sixteenth time in Pall Mall, has done much to slacken the bands of prejudice and widen the range of art sympathy amongst us; and the effect of increased acquaintance with modern Continental schools becomes year by year more obvious, not only in the more thorough character of art criticism, but in the work of English painters. In some directions, indeed, it is to be feared that study of foreign styles may lead to mere imitation, or to mannered affectation; yet, in the long run, there can be no doubt that such study will be of service to English art.

Our own school has its strength and its weakness, and precisely where we are weak our Continental neighbours are strong. For example, no one can walk round the gallery in Pall Mall without marking, in the works there hung, the supremacy of treatment over motive, of art style over mere prettiness of fancy. Let the subject be a lady at her toilet, or a beggar in his rags, a child at play, or a general on the battle-field, the power and charm of the work lie in a certain mastery of the situation, in force of intention, studied composition, and deliberate use of means to an end, rather than in nobility of thought or range of imagination. It is just this clearness of artistic articulation which our English painters seem to lack. It may be that higher moral teaching, and purer aspirations, struggle for expression upon the walls of our exhibitions than find place within the galleries of modern foreign schools; yet, for want of precision and power in the language of art, the lesson becomes unintelligible, the thought incoherent.

In thus drawing comparison between English and Continental schools, we must be understood to include in the latter French, Flemish, and Dutch schools only. The best contemporary art of Germany is, unfortunately, and despite international exhibitions, as yet too little known in this country, even by artists, to influence art or furnish basis for popular criticism. If Mr. Wallis, or some equally enterprising caterer for the art-loving public, should find space in future exhibitions for works by first class German painters, he will do further good service to the cause of art in England. So long as the so-called spiritual art of modern Germany, the landscape school of Düsseldorf, the realistic school of Munich, headed by Carl Piloty, the vigorous naturalism of Knaus and others, so long as these phases of modern art are ignored in London exhibitions we cannot lay claim to thorough acquaintance with Continental schools, and the German saying points significantly to our prejudice and ignorance: 'Sind auch Leute über die Berge!'

This divergence from the especial subject of discourse must be forgiven, and our text recalled to mind, namely, the Foreign Exhibition now open in Pall Mall. No better comment upon the observations with which we commenced could be found than in this Gallery. The absence of 'high art,' in the most lax use of the term, is remarkable; even the idyllic classicism, in which French artists reign supreme, is this year unrepresented. The greater number of figure pictures rise in motive no higher than elegant or rustic genre—sentiment of the boudoir or romance of the cottage. Two pictures, however, attract alike by freshness of subject, though antagonistic in every other quality; on the one hand, 'The Birth of Venus,' by Cabanel; on the other, 'School for Vengeance,' by Alma Tadema. The first is a nude of enchanting loveliness, which, if it startle English eyes, yet bewitches into unwilling admiration. The second is a clever episode in early French history, repellent in hard realism and unflinching purpose. As it is intended now to indicate only the leading features of the Gallery, detailed criticism of these pronounced works, as of others also, must be deferred to a future opportunity. Two masterpieces, by Meissonier, 'Napoleon I., 1814,' and 'Les Bons Amis,' add weight to the Exhibition, thanks to the favour of their owners, Her Majesty the Queen and John Ruskin, Esq. That technical perfection, and that large manner independent



of mere scale which belong to Meissonier's style find full expression in these two gems, but are too well known to need comment. In passing, we may note how the harmonies struck upon a golden key in 'Les bons Amis' show the mellow for juxtaposition with the cool, steel-like quality of the 'Napoleon.' The one example of Edouard Frère in the Gallery is almost submerged by the wave of little rival pictures in the same style. Duverger, Aufray, Goupil, Azmar, Dargelas, J. Marés, and others, follow Frère at more or less distance. Among these Aufray seems to maintain most individual character, though resembling Frère in completeness of conception, tenderness, simplicity, even mode of execution and tone of colour.

One work by Gérôme shows that clever French master not in full power, albeit great enough to dwarf his companions. Madame Browne has a careful study of 'A Seminarist.' By Landelle also there is a single figure—a female 'Fellah'—in quality more hard and flat than usual, though in composing line severely graceful. The brilliant phase of boudoir studies or *tableaux de toilettes* is sufficiently represented by De Jonghe, Toulmouche, Willems, each a master of distance and harmonious play of colour. By J. Israëls, G. Brion, and C. Bischof, are important rustic subjects, which will claim further comment. Mr. Wallis has also secured a work by the famous Belgian Wilkie, J. B. Madou. Pictures by A. Glaize, F. Hailbuth, G. Koller, and Breton, also deserve notice.

In landscape and animal painting the Exhibition is strong. Perhaps A. Schreyer has never shown to better advantage than in two studies from Valaquin of horses at halt or in full tear along a sweep of rough road; for pluck and vigour of drawing and execution these are beyond praise. With the landscapes of poetic beauty by Corat, and of prosaic power by the late M. Rousseau, with the pleasant pastorals of Auguste and Peyrol Bonheur and the calm seas of P. J. Clays, we must close this enumeration of the leading works of the Gallery. Later a selection for closer criticism may be made from the pictures here only indicated by name. A. D. A.

### THE CAUSE OF COLLIERY EXPLOSIONS.

THE last day of 1868 was painfully signalled by the announcement of one of those terrible colliery explosions which have of late been so disastrously frequent. 1869 is hardly three months old before it witnesses another!

The appetite for horror which a certain portion of the press does its best to stimulate and to indulge is called into full activity on occasions of overwhelming calamity. It is not our purpose to enter into the details which, on all these occasions, present for the most part a terrible monotony. It is rather our wish to inquire what light can be thrown on the subject of such explosions, than to dwell on the more harrowing, but less instructive, part of the subject.

It may not unnaturally be thought that events of this nature throw no slight reproach on the science of the day. To say this is, in other words, to blame scientific men. While, with regard to some of those sources of danger which have ever been considered as beyond human control, we have ceased to hold that helpless opinion—when, for instance, in the matter of marine storms, we have organised the means of giving such warning of their approach from the opposite shores of the Atlantic as to enable the mercantile navy in every port of our coasts to look for timely shelter—how is it that we seem to remain powerless in the presence of the fearful activity of the fire-damp?

Such a view, however, would be unjust. Science has done much to protect the collier. There is no danger so terrible as that to which the coal miner is exposed. There is no danger against which science has provided so simple, so certain, and so elegant a protection.

No phenomenon of nature, with the exception of the active eruption of a volcano, can be compared to an explosion of fire-damp. Neither the thunderbolt, nor the hurricane, nor the whirlwind, brings such overwhelming ruin. The *feu d'enfer* of modern sieges, the rain of bullets, the shattering fury of the bomb-shell, are rapidly destructive of life. But the inflammation of the fire-damp is instantaneous. The first announcement of the fact is the rush of a river of fire that precedes the sound of the explosion. The slaughter is limited only by the number of the workmen in the colliery in which it occurs.

But there is one invariable condition precedent to this frightful calamity—it must be occasioned by the hand of man. It is not, we need not say, so occasioned intentionally; but it is undoubted that the fire-damp only explodes on coming into contact with flame, and that flame is borne by the hand of a miner.

A century ago this was as well known to be the case as at present. Certain mines were known to be so productive of fiery gas that all attempts to work them were given up. In others ventilation was relied on for assuring a comparative safety. In others the incredible expedient was adopted of sending a man, wrapped in thick leather or woollen clothes, with a mask on his face and a hood on his head, to explode the gas in the mine, in order to render the workings accessible when it should have been consumed.

The originator of the steam engine, himself reared on the bank of a coal mine, was the first to offer to his fellow workmen the protection of science. A co-inventor in point of time, there can be little doubt, with George Stephenson was Sir Humphry Davy, himself a man sprung from the ranks of labour. The safety lamp, whether the 'Geordie' or the 'Davy,' was, and is, what its name imports, a reliable protection for the miner.

The practical objection was raised to the use of the safety lamp that the wire gauze, which protects the flame, stifles the light. This, no doubt, is felt as a great drawback by the miner. Darkness presses upon him in his solitary work. To remedy the evil, he has often been met, groping through the galleries of a coal pit, with

safety lamp in one hand and—a LIGHTED CANDLE IN THE OTHER. Again, it has often been found to be the case that a miner would bore a hole in the guard of his lamp—for the convenience of LIGHTING HIS PIPE.

It is not necessary for a safety lamp to be a sort of dark lantern. Admirable combinations of glass and of wire gauze have been invented, and are made use of in the Belgian mines. The danger of fracturing the glass by a blow may be guarded against with tolerable certitude. But the question still remains of the danger of a crack in the glass, if the interior of the lamp should become filled with ignited gas. It is probably for this reason that, in France as well as in England, the wire gauze lamp is still principally used. There is an electric lamp, that of Messrs. Dumas and Benoit, the light of which is displayed in a closed tube, which appears to unite the two requisites of good illumination and absolute security.

It is well known that the rate of the production, or rather of the escape, of inflammable gas, depends very much on the barometric pressure of the atmosphere. The less the height of the mercurial column, the greater is the outpour of fire-damp. Sudden changes of atmospheric pressure, such as have been recently tested, produce the greatest discharge of gas. To the admirable indications of barometric change that are afforded by the best forms of the instruments well known to science, have been added special inventions for the use of the coal miner. One of these contained a collapsible globe or vessel, delicately sensitive to the pressure of the air around it, which, when a certain tenuity was obtained, gave warning by disengaging a bell, or sounding a whistle.

But the fact remains that, do what we will to warn and to protect him, we have not yet obtained the honest, enlightened, thoughtful aid of the miner in taking care of himself. It can hardly be denied that every colliery explosion arises from the neglect or the foolhardiness of some individual miner. He lives in danger enough to appal any unaccustomed man, until he almost ceases to believe in its existence. If the safety-lamps are not locked by means of a key kept out of the possession of the miner, he will often open them out of mere bravado, or to see how a feeble jet of fire-damp will burn! A visitor to a foreign colliery relates the alarm which he experienced when the engineer, who was conducting him over the workings, unscrewed his lamp to show him the phenomena of combustion, when the air was partially vitiated with fire-damp. The opportunity thus afforded of observing the flame, varying from a red to a bluish tinge, and the occasional small detonations, did not reconcile the stranger to the *saw-froid* of his conductor. After a fatal explosion in a coal-mine at Merthyr Tydvil, where 62 WORKMEN were killed or wounded, ONLY 61 LAMPS were to be found. Whether it were the case that one of the sufferers had entered the galleries with a candle, or that he had opened his lamp (to light his pipe), which was then blown to pieces by the explosion, the fact is equally instructive.

By that wise dictum of the English law which defines the slaughter of any one, without malice prepense, in consequence of any act in itself unlawful, as murder, there can be little doubt that every death occurring by colliery explosion ranks under the category of that crime. Masters and overlookers may do their best—there is no doubt that in the majority of cases, perhaps in all, they do their best—all precautions are ineffectual, so long as there is one foolhardy, selfish, or negligent miner under ground. One safeguard alone is to be relied on: the thorough education, moral as well as intellectual, of the miner.

Those who are familiar with the working classes are well aware of a certain disinclination, often evinced, in many trades and callings, to adopt any improvement which renders the pursuit of that calling less dangerous, or even less certainly fatal. The divers long resisted the introduction of a method of attaching the dress to the helmet that removed the chief peril of their occupation. If a diver, accoutred with the helmet that was first used, stumbled and fell, under water, he was drowned. To meet this peril the dress was screwed tightly to a plate descending from the helmet, and the wearer was then safe even if he lay full length at the bottom of the sea. The Whitstable divers long refused to adopt this improvement. The opposition of the Sheffield grinders, a set of men whom the irritation caused by the particles of metal, thrown off by the wheel, invariably brought to the grave by the age of forty, to magnetic guards and other inventions, the adoption of which would have removed the cause of this early mortality, is well known. There can be little doubt that the idea is very prevalent among many classes of workmen that the dangers of their trade make it all the better for them. Such dangers keep out competitors. Familiarised to perils which may never be actually realised until the moment when a fatal blow is struck, men are wont to regard them as useful bugbears to keep off outsiders, and they resent any attempt to make their calling perfectly safe as an injury to the trade.

That this is the case with the colliers we do not assert. That it is the case, or has been the case, in many trades, no competent witness can deny. That the unconscious influence of such a principle may often be mischievously active is highly probable: one thing, however, is certain, where there is no open flame there can be no explosion. Where every miner has his safety lamp, uses that lamp in accordance with rules, and never, either by match, or ill use of lamp, or any illegal means of kindling his pipe, applies fire to the treacherous gas, that gas cannot explode. Let those, then, who care for the lives of the men, and for the property of the masters, cease to blame science for calamity; and turn their attention to the adequate education of every human unit, on whose prudence the life of scores depends; and

for the results of whose breach of orders it is no compensation to his fellow sufferers that he has paid the penalty with his own.

We purposely omit any discussion as to the asserted cause of the Wigan explosion. If it should prove to be the case, as has been stated, that blasting was resorted to in a seam of coal known to be fiery, it is not by the scientific press that such a procedure should be dealt with. There will, no doubt, be a proper legal investigation on this subject.

### THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE recommendation of the Council of this Institute that the Royal Gold Medal for 1868-69 should, with Her Majesty's sanction, be awarded to Professor Lepsius, the eminent archaeologist and art-littérateur of Berlin, was unanimously adopted by the general meeting on Monday last. It would, indeed, have been difficult to select any *savant* more fitted or the honour which in due course of routine, must be this year conferred upon 'a foreigner not being a professional architect.' The stupendous literary and artistic work 'Denkmäler aus Aegypten und Aethiopien,' in twelve volumes of elephant folio size, which Professor Lepsius published in 1849, in itself sufficient to establish an European reputation for any antiquary, was the result of a scientific expedition sent to Egypt and Ethiopia under his direction in 1842. The volumes contain more than 800 plates, illustrating every monument of the countries which had been hitherto unpublished or incorrectly delineated. A copy of this work was presented to the Institute by the King of Prussia in 1852.

The Institute medals and prizes annually offered to competitors in the field of architectural design and illustration were awarded in accordance with the recommendation of the Council as follows:

The Soane Medallion with 50*l.*, subject to the usual conditions of Continental study (modified in this case and for the future), to Mr. H. L. Florence, for his design for a Club House. Mr. Beresford Hope's prize of 10*l.* to Mr. E. J. Roche, for his design for a Gothic Theatre. The Institute silver medal with 5*l.* 5*s.* to Mr. T. C. Wilberfoss for two sets of measured and perspective drawings illustrative of Hatfield Hall and St. Peter's Church, Winttingham. In the same competition medals of merit were awarded to Mr. T. E. Williams for measured drawings of the Abbey, Dore; to Mr. E. B. Ferrey for measured drawings of South Wingfield Manor House; and to Mr. W. Howes for measured drawings of St. Mary Ovary Church, London. Mr. A. S. Bird carried off the Student's Prize in books for his design of a gateway to a court-yard. In the literary competitions, the Institute Medal was awarded to Mr. H. D. Shepard for his 'Essay on the Revival of Italian Art,' and a medal of merit was awarded to Mr. T. A. Britton for a voluminous treatise on Timber; while the special essay prize of 10*l.*, placed at the disposal of the Council by Mr. T. Southall, of Worcester, was gained by Mr. E. Locke, for his essay on Bricks and Terra Cotta. This concludes a list of prizes which, taking into due consideration the prescribed conditions attached to them, were on the whole, we think, fairly well deserved by all the successful competitors. Without entering on a detailed description of the drawings which have been on view for some days, and will remain at the Institute for a short time longer, we may especially mention those of Messrs. T. C. Wilberfoss, and E. B. Ferrey, as indicative of great industry and careful study. Mr. Florence's design may be open to objection from those who have no great *penchant* for the modern French school, but the drawings are at least free from common-place faults, and considered as drawings they are admirable.

The award of medals and prizes was followed, we understand, by a discussion on the subject of the Voluntary Architectural Examination, concerning which some useful resolutions of the Council, elsewhere given, were adopted. The object of these resolutions is to rescue the Examination scheme from an untimely end. It is no secret that of late years, from some cause or another, it has failed to attract the younger members of the profession, and in 1869 not a single candidate has presented himself. There must be some cause for this apathy, and we think that the Council has rightly guessed it. We can readily understand that there are many professional men who ignore the merits of the Examination scheme *in toto*. The strength of their argument probably lies in the fact that an architect is an artist as well as a man of science and a man of business. You may test his knowledge of art, but you cannot test his taste; for the simple reason that there is no recognised standard nowadays—if indeed there ever was—by which to measure it. Nor can it be assumed, even by the warmest friends of the scheme, that the Examination would be a perfect test for any qualifications. A man's natural disposition—his habits and method of work, his capacity for cramming or the reverse—and a hundred other considerations, may no doubt be urged as reasons why such a test must always remain to some extent empirical. But the same may be said of most examinations, and meanwhile it must not be forgotten that the Voluntary Architectural Examination as a scheme has been approved and established. The present question therefore is, not whether the Examination would be beneficial to the practice of architecture as a profession, but whether, being established, it should be carried out in such a manner as to secure a permanent advantage to those who pass it. Now, what have 'passed candidates' hitherto had to show for their pains? Absolutely nothing. Diplomas, medals, certificates have all been suggested in turn, and have, up to this time, been severally rejected by the Institute as a body. That these forms of acknowledgment might in some cases be open to objection we can readily conceive; but surely to no greater extent than the recognition of any professional status similarly testified.

We trust, therefore, now that the necessity of a 'formal acknowledgment' to passed candidates has been admitted by a general meeting of the Institute, it will lead to the establishment of something in the character of a certificate which may satisfy the natural ambition of those who compete for the honour, without giving offence to any elder members of the profession, who may foresee dangers, and perhaps with some reason, in the award of a diploma.

Such an arrangement, together with some other privileges proposed to be

accorded to passed candidates, will no doubt act as an incentive to younger members of the profession to present themselves for examination next year, and tend to revive general interest in a scheme which, after all the care bestowed on its organisation, scarcely deserves to sink into oblivion.

The next ordinary general meeting of the Institute will be held on Monday, April 19, when a memoir of the late A. Ashpitel, F.S.A., Fellow, will be read by Mr. Wyatt Papworth, Fellow.

The presentation of the Royal medal and of the Institute medals and prizes will take place on the same evening.

### VOLUNTARY ARCHITECTURAL EXAMINATION.

IT will be highly satisfactory to those interested in the welfare of these Examinations, to know that at the last meeting of the Royal Institute of British Architects the following Resolutions were passed:—

1. That passing the Voluntary Examination ought to be followed by advantages such as will promote the advancement in life and in the profession of the Student.
2. That each Candidate who passes the Examination should receive a formal acknowledgment of his having passed.
3. That passed Students in the Class of Proficiency should become, *ipso facto*, Students of the Institute, without further payment, for as many years as they have paid guineas.
4. That the names of Candidates who have passed in the Class of Distinction be notified to the Board of Examiners for District Surveyorship Certificates, when such Candidates present themselves for Examination before that Board.
5. That it be referred to the Council to determine a form of acknowledgment under Resolution No. 1.

### PARLIAMENTARY PROCEEDINGS.

#### \* Ancient Monuments.

On Friday, April 2, Sir H. VERNEY asked the First Commissioner of Works to consider whether measures could be adopted to place the ancient monuments now existing in the country under the protection of some authority which may prevent their destruction.

Mr. LAYARD: The subject of my hon. friend's question is one of considerable importance. Not only have many Royal and other interesting historical monuments in our cathedrals and churches been removed from their original places, injured, or suffered to fall into decay, but monuments of great national as well as archaeological value have been irreparably injured and even wantonly destroyed. This state of things is not creditable to the country. In France and elsewhere measures have been taken by the Government to preserve and maintain such monuments, as forming part of the property of the nation. Since I have held the office which I have now the honour to fill, my attention has been seriously directed to this matter. There are, as my hon. friend well knows, great difficulties in dealing with it in this country, especially those connected with what might be considered as interference with private rights and property—for instance, as in the case of the destruction, only recently, of a highly curious and interesting ancient monument in Cornwall, an act of vandalism which, if what I have read in the newspapers be true, one would have scarcely thought possible in these days. After fully considering the subject, I have thought it advisable to turn my attention, in the first place, to Royal and other historical sepulchral monuments, some of which have been injured, removed, opened, and otherwise interfered with even of late years. The first step is to obtain a list of such monuments as it might be desirable to place under public protection. With this view I addressed a short time ago a letter to the Society of Antiquaries, requesting their assistance in preparing such a list. My request has been met in the most cordial spirit by the distinguished President of the Society, Lord Stanhope, and by its members. They have taken steps which, I trust, will enable me to obtain such a list as will permit me to submit to the House some proposal for the protection of these monuments which may meet with its approval, or, at any rate, to invite its views and opinion upon the subject. If I find it possible to effect the object I have in view with regard to sepulchral monuments in our cathedrals and churches, I would endeavour to ascertain whether some means might not be found to extend the same protection to other monuments of national and historical interest and importance.

#### The New House of Commons.

On Tuesday, the 6th instant, the report of last year's Select Committee on the House of Commons' arrangements was brought under the notice of the House by its Chairman, Mr. HEADLAM, who drew an amusing picture of the insufficiencies of the present Chamber and the devices to which members resorted for procuring seats on an important occasion. In a succinct narrative of the history of the Committee, he examined the various plans submitted to it, concluding decidedly for Mr. Barry's proposal to build a new House on the space occupied by the Dining-room and the Commons' Court. This could be done for 120,000*l.*, and would give accommodation for 569 members instead of just over 300. The present Chamber would be restored to its original condition, and would be used as a lobby or anteroom. He ended by moving—'That this House, agreeing in substance with the report of the Select Committee of the year 1868 concerning House of Commons' arrangements, recommends the same for the consideration of Her Majesty's Government.'

Mr. W. COWPER, Lord J. MANNERS, and Mr. BERESFORD HOPE joined in condemning as utterly futile any attempt to tinker up the present House and in praising Mr. Barry's plan, but Lord J. MANNERS thought that any alterations should be something more than a mere departmental affair, and should be carried on in concert with the Lords. Mr. TYNE also took the

same view, and gave a kind of professional opinion that the present House could not be advantageously altered, and that there was no reason for supposing that Mr. Barry's estimate need be exceeded.

Colonel FRENCH objected strongly to the removal of the Dining-room to the ground-floor, which would be necessary if Mr. Barry's plan were accepted, and urged the Government not to pledge itself to an expenditure which, judging from former experience, could not be less than 600,000*l*.

Lord BURY moved to omit from the resolution the words committing the House to an approval of Mr. Barry's plan.

Mr. HUNT, in opposition to the motion, avowed that he was not dissatisfied with the present House, which accommodated all the members who usually attended on ordinary occasions, and possessed admirable acoustic qualities.

Lord ELCHO traced many of the inconveniences complained of to the disorderly habit which had recently sprung up of members retaining seats before prayers, by hats and, what he called, 'devotional dogskins.' But the difficulty at present experienced in getting seats was abnormal, and, like Mr. Hunt, he thought that no new building ought to be commenced until further experiments had been tried on the present House.

Mr. V. HARCOURT having supported, and Mr. DODSON having opposed the motion,

Mr. LAYARD denied that this was a question for the Government rather than for the House. Speaking for himself, he held that either the present House must be left as it now stood or a new House must be built on the site indicated. He believed that the present inconveniences must go on increasing, and sooner or later Mr. Barry's plan would be adopted.

Mr. WALTER agreed with those who thought the present House unworthy of the country.

Mr. GLADSTONE emphatically asserted that this was a matter on which the Government ought to be guided by the House. But it was a matter on which the House could not at present express an opinion; for the 240 new members ought to be allowed the benefit of some experience before deciding. In the present impossibility of coming to a decided opinion, he asked Mr. Headlam to withdraw his motion, and it was accordingly withdrawn.

## ILLUSTRATIONS.

### POSSINGWORTH MANOR.

THIS building, of which we gave an exterior view in our number for January 9, and of which we now present an interior sketch, showing the general effect of the Drawing-room or principal Saloon, has been erected for Mr. Louis Huth at Possingworth, a few miles from Uckfield, in Sussex, and is an attempt to combine a reproduction of many of the leading features in the plan of a mediæval or Tudor house with the requirements essential to a modern residence. One marked variation from the common *planning* of former days consists in the facilities provided for carriage access to the hall-door across the quadrangle, or courtyard, enabling visitors to be set down at the great porch. This is one of the principal and most effective features of the building, and one in which the aim of the architect has met with a worthy response at the hands of the mason and the carver. This porch, forming the principal entrance, leads at once into the great hall, 60 feet by 20 feet, and 40 feet to the underside of the ridge of the open-timbered roof. From this hall—in which we only note, in passing, the grand staircase, entirely of oak, with a profusion of rich carving beautifully executed; the noble stone chimney-piece; the stained glass, by Lavers & Barraud, representing the months and seasons, and other kindred subjects; the minstrels' gallery, &c., each of them worthy of attentive study and separate notice—we gain access, through a lobby and a corridor vaulted in stone, with pierced pendentives and fan tracery, to the drawing-room, a fine room 45 feet by 30 feet, exclusive of two bays, each 17 feet by 7 feet 6 inches. The oak panelling and screenwork in this room, together with the ceiling, shown in the illustration, have received very careful study and elaborate treatment at the hands of the architect. The execution well realises the design.

The dining-room, 38 feet by 22 feet 6 inches and 16 feet high, is entered immediately from the hall; and has a ceiling, similar in style, but different in treatment from that in the drawing-room. The great buffet or sideboard in oak, and the elaborate chimney-piece in Mansfield Woodhouse stone—both executed, as was indeed every enrichment throughout the building, from full size working drawings by the architect—furnish excellent samples of the perfection to which the best skilled labour of the nineteenth century in England may attain when adequately guided and encouraged.

The library, or morning-room, 25 feet by 22 feet, lies between the dining-room and drawing-room, and from it access is gained, by a picturesque and boldly treated flight of steps, to the terraces on the south front.

On the west side of the quadrangle is a cloister, leading to Mr. Huth's business room, 43 feet by 20 feet, exclusive of bays, and fitted with strong rooms, &c.

To the west of the building, in the space between Mr. Huth's room and the corridor north of the drawing-room, we find the picture gallery, 60 feet long by 23 feet wide and 22 feet high. The ceiling is formed of longitudinal and transverse moulded oak beams carried on corbel heads, excellently carved by Phylfers, the interspaces being filled with panels of open ironwork carrying the inner glass ceiling of the gallery. The rich cornice and cove of this gallery were executed in fibrous plaster by Messrs. Jackson, of Rathbone Place.

A triple-arched doorway on the west side leads at once into a conservatory of about 60 feet by 25, formed mainly of glass and iron.

The kitchen (with an open-timbered roof) and offices, forming the entire east wing of the building, are most complete, and fitted with every modern requirement, principally executed, together with the iron-work of the conservatory, by Potter, of South Molton Street. The various bed-rooms, dressing-rooms, bath-rooms, &c., &c., are situated on the first floor, with other bed-rooms over. All the principal ground-floor rooms and one of the first-floor rooms are completely wainscoted in oak, and all the guests' bed-chambers are completely fitted in oak also. Under the drawing-room, in a portion of the basement, which from the fall of the site is quite above ground, is a billiard-room; and the rest of the basement is devoted to extensive cellarage, china-rooms, stores, &c.

At some distance to the east of the house is the extensive group of stable buildings, with coach-houses, clock-tower, stables, loose boxes, carpenters' shops, laundry, and all the etceteras of a great establishment.

Throughout the interior of this mansion a considerable degree of richness has been aimed at; the intention having been to adapt it to the adequate display of the beautiful collection of high-class 'art treasures' which it was destined to receive. The decoration of the building falls far beneath them both in elaboration and value; and the architect's aim, in fact, was concentrated on so scheming his internal structure as to make it subservient to the right framing or setting of these very gems of art.

The building, with its surroundings, is a real triumph of art over nature; and they who, but a comparatively short time since, saw the site a somewhat desolate tract of agricultural land, overgrown with rough underwood, and with little to recommend it beyond its sporting attractions, would scarcely credit the marvellous metamorphosis which a large and judicious outlay in the way of planting, formation of terraces, execution of a large lake with islands, bridge, &c., has produced, by changing a bald and cheerless waste into a tasteful and ever-pleasing landscape.

The builder, to whom the highest praise is due for the thoroughly conscientious and substantial way in which he realised the architect's designs in every branch, was Mr. Alexander Cheale, of Uckfield; the indefatigable clerk of works, Mr. Richard Winter; the very successful landscape gardening was designed and superintended by Mr. Marnock, of London; the hydraulic engineers were Messrs. Easton & Amos; the ironwork, and heating throughout, were by Messrs. Potter & Son; the carving was principally executed by Messrs. Halliday Brothers, who also modelled the ceilings.

The cost of the building, including the stables, three lodges, garden buildings, gardener's residence, entrance gates, farm buildings, &c., was somewhat in excess of 60,000*l*; and the whole was erected from the designs, and under the superintendance, of Sir Digby Wyatt, and, considering all that has been effected, within an unusually short space of time.

### M. LAMEIRE'S DECORATIONS.

THE accompanying illustration is copied from a portion of M. Lameire's magnificent design for a church decorated throughout with paintings, and which he entitles 'Catholicon.'

The drawings, now at South Kensington Museum, being framed and glazed, it is impossible to trace from them; but, allowing for this obstacle and for the necessity of translating a coloured subject into lines of one colour, it is hoped that the lithograph may give a fair idea of the original. The band of ornament along the top, treated in somewhat questionable taste, is formed of two ribands, orange on one side and blue on the other, folded backwards and forwards. Charlemagne's mantle is yellow, with ornaments of a slightly different shade; his inner robe is grey; the saddle cover green, with yellow pattern; and the horse a purple black. Charles Martel's robe is red.

## REVIEWS.

ITALIAN SCULPTORS: Being a History of Sculpture in Northern, Southern, and Eastern Italy. By CHARLES C. PERKINS. London: Longmans & Co. 1868.

In 1864 Mr. Perkins published two volumes upon the Tuscan Sculptors. To those volumes the present work is a sequel, and with them it forms a most complete and valuable history of Italian sculpture. Considered separately, and as a work upon fine art, 'Italian Sculptors' is necessarily of inferior interest to the volumes which preceded it. All the greater and better known artists of Italy—Ghiberti, the Pisani, Donatello, della Robbia, Michael Angelo, Benvenuto Cellini, and Gian Bologna—had already found a place among the masters of the Tuscan schools; and in his last volume Mr. Perkins has lain under the disadvantage of having to deal with the lives and works of second-rate men only. But, apart from fine art considerations, we see no falling off in interest. The plan adopted embraces all kinds of decorative sculpture, and to the student of the art in its relation to architecture few works could be of greater value. Pre-Revival sculpture—which is almost exclusively architectural—is treated of at length, and the pages devoted to early works in the less known districts of Apulia and the south will be found especially interesting. Antiquarian subjects are by no means handled with antiquarian dryness, but historical and legendary matter is so introduced as to render these parts most delightful reading, as will be seen from the following extract upon the symbolism of mediæval carvers.

'Frequently incorrect in their ideas about the nature and properties of animals, they did not seek to separate the true from the false, since, as St. Augustine remarks, "The all-important object for us is to consider the







J. W. M. ...

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A CHURCH (BY MON C. LEMEIRE)

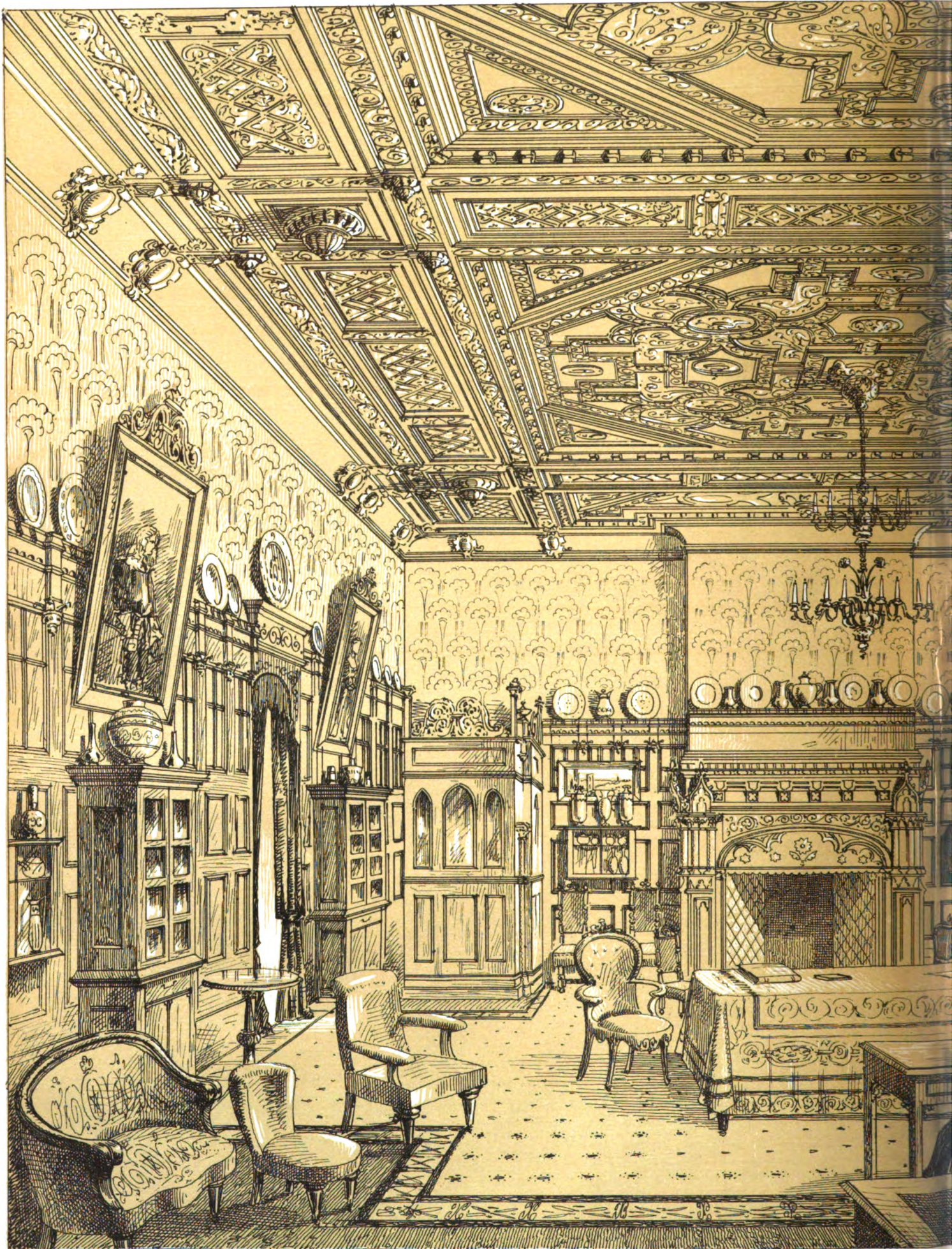
ALYPSE OF ST JOHN.











N. Wimperley & Co. Lond.

Drawing Room in Mansion  
THE SEAT OF M<sup>RS</sup> LOUIS H.  
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Printed by W.W. Spangier & Co. London, E.C.

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signification of a fact, and not to discuss its authenticity." This habit of looking for a symbol in every created thing led to a system of mystical zoology contained in the "Physiologus" or "Bestiary," a work which explains the now forgotten meaning of many of the strange forms carved about the façades of mediæval churches. The first sentence in the version of the "Bestiary" made by Peter of Picardy clearly sets forth the object for which it was composed. "Here commences the book which is called 'Bestiary,' because it speaks of the nature of beasts; for God created all the creatures upon earth for man, and that he may in them find an example of faith and a source of belief." One or two examples will give the reader an idea of the way in which the different animals are described in view of man's instruction. "When the hunter has seized the young tiger cubs, and is pursued by the tiger, he places a mirror in the path of the furious animal, who on perceiving himself in it is so charmed by the spectacle of his own beauty, that he gives up the chase and forgets his loss. The hunter is the devil, the cub is the soul which he wishes to steal away, and the mirror the temptations of the world put in a man's way to absorb and divert his attention from matters connected with the welfare of his soul."

In the scheme laid down by Mr. Perkins, each important city and district in Northern, Southern, and Eastern Italy has its separate art history. Apulia appears to be peculiarly rich in remains of the 11th and 12th centuries, in the porches, bronze gates, and marble pulpits of its churches. As might be expected from the political history of the country, the style of these works shows in a curious manner the mixture of Byzantine, Saracenic, and Norman influences. The Neapolitan district has also its elaborately sculptured pulpits of early workmanship, and its monumental works of the Gothic period are important, more especially the Angevine series in the Church of Santa Chiara; but among a profusion of later examples there is little of real moment, and its most noted native sculptor, Merliano, is entitled to no very high rank as an artist.

To the casual observer it might appear that, among cities, none had been so fertile in sculptors as Rome. Such, however, is not the case. In classical times Rome was crowded with works of art, but they were either brought from Etruria or Greece, or executed on the spot by foreign artists. In Christian times all the great Tuscan masters worked there during some portion of their lives; but, although a continuous line of workers in marble can be traced in Rome back to the classical period, she has produced few native sculptors of merit if we except the Cosmati—a family by whom the arts of mosaic working and sculpture were united, and who flourished in the twelfth and thirteenth centuries—and Paolo Romano. In speaking of the sculpture of Lombardy, Mr. Perkins finds it necessary to make some incidental mention of the style of architecture developed in that province, and which is most commonly known as Lombardic. To this name he objects as an absolute misnomer, and prefers the less generally received one of Comacine. He urges that the Lombards, like their predecessors the Goths, neither brought with them nor acquired any art whatever, but merely employed such native workmen as they found in the conquered provinces. Of the Comacini, to whom, according to Mr. Perkins, the style is really owing, we shall quote his account. It will at least be interesting to such of our readers as belong to the Masonic Brotherhood.

For twenty years after Alboino and his followers overran the plains of Lombardy, the Isoletta Comacina (an island in the Lake of Como), which held out against their power under Francione, an Imperial partisan, contained numbers of fugitives from all parts of Italy, amongst whom were many skilled artisans known as the Maestri Comacini, a name afterwards changed to that of "Casari," or "Casarii,"—builders of houses. After they had submitted to the invaders, their college or guild was favoured by the Lombard kings; its members were enfranchised, made citizens, and allowed certain important privileges, such as that of making contracts, which were not, however, conceded to their assistants. There is no evidence that the Lombard kings did anything to protect arts, commerce, or industry, before the reign of King Rotari, but these important objects are aimed at in his laws, which contain official enactments for the protection of the Maestri Comacini, whose free jurisdiction was recognised by the name of Free Masons' (A.D. 636-652).

In the buildings erected by this brotherhood for their Lombard masters are numerous carvings; some of these are obviously by Byzantine artists, others—rude and ill-cut imitations of classical forms—are precisely what the Comacini themselves might have been expected to produce; but there is a third class showing that interlacing of ornament and fantastic animals common to the Celtic and Scandinavian races, in which, notwithstanding his former argument, Mr. Perkins is obliged to confess the influence of Northern tradition. In the twelfth century Milan shows a curious instance of sculpture used for the purpose of satire. After the victory of Legnano, in which the Milanese revenged themselves on Frederic Barbarossa, to show their hatred and contempt for the Emperor, 'they caused two portrait bas-reliefs of himself and his wife, the Empress Beatrice, to be set up on the Porta Romana, one of which is a hideous caricature, and the other too grossly obscene for description.' In the thirteenth and fourteenth centuries both sculpture and architecture in Milan were well-nigh engrossed by a single family of artists, the Campionesi. Their works are numerous, but they seem to have made little progress till about 1330, when a Tuscan sculptor, the well-known scholar of Andrea Pisano—Balduccio—was invited by Azzo Visconti to Milan. Several of the Campionesi became his scholars, and under the Tuscan influence art rapidly improved. In 1386 Galeazzo Visconti founded the Duomo at Milan, and ten years later the Certosa at Pavia, as thank-offerings for the success of his schemes of usurpation; and from that time the two buildings became the great fields in which all the chief masters of the Lombard school exercised their powers. Both are remarkable proofs of how much may be achieved by the members of a school working in concert, but the Certosa far exceeds the Duomo in artistic merit and completeness. Among the artists employed on these buildings before the Revival, various members of the Campionesi family, the Grassi, and Jacopino da Tradate are prominent; later the brothers Mantegazza and Omodeo. Perhaps of all the sculptors and architects of the Lombard school Omodeo was the greatest. His life was an eventful one, and is full of melancholy interest. We can only mention one other of the many Lombard masters of note—

Agostino Busti (called Bambaja), three of whose reliefs, from the unfinished monument of Gaston de Foix, are in the South Kensington Museum, and show the perfection of masterly handling of material.

The tendency of Venetian art has always been in the direction of colour rather than of form, and its early sculpture will not demand special notice till we come to the decorations of the Ducal Palace. These form so remarkable an example of the systematic and intelligent application of sculpture to the purposes of architecture that we must allow Mr. Perkins to describe them:—

'It was not simply with the intent of beautifying the walls of the edifice that the sculptor carved all these groups, and capitals, and ornaments. He had as definite a purpose as the architect who divided it into spacious halls and chambers proper for the reception of the great bodies of the State, and for the residence of its chief magistrate. It was to convey lessons of importance to governors and governed; to reflect as in a mirror the habits of life and guiding influences of the nation; in short, to make the palace stand in the midst of Venice as an image of the political state, faith, and occupations of the Venetians, and thus give it a physiognomy so national that it would appear to have been born of the place. The task was difficult: let us see how far he accomplished it.

'At each angle of the two façades, whose junction forms the apex of a triangle, stands the statue of an archangel, to show the trust of the Venetians in Divine protection, whether they were upon the sea or upon the land, at war or at peace. Raphael the patron of travellers with his staff in his hand, at the end looking towards the sea; Michael the warrior and avenger holding his sword, at the angle above the Piazzetta; and Gabriel the peacemaker bearing the lily, at the corner next St. Mark's. Under each of the archangels is a group of figures in alto-relief. The drunkenness of Noah, under the statue of Raphael, is an admonition against that vice, and a warning against filial impiety, happily contrasted with filial piety by the young Tobias, who sits at the feet of Raphael holding in his hand the fish whose liver is to cure his father's blindness. The group of Adam and Eve in the act of plucking the forbidden fruit, below the statue of Michael who was sent to drive them out of their forfeited Paradise, warns against disobedience; lastly the Judgment of Solomon below the statue of Gabriel speaks more particularly to the magistrates of their duty towards the people.

'We now come to the carved capitals of the thirty-six columns upon which the edifice rests. They too have for the most part their separate as well as their connected meaning, though the sculptor apparently allowed himself here and there a certain freedom of invention. They represent the conditions of man, the animals and plants needful for his existence and comfort, the planets which preside over his destiny from the cradle to the grave, and the winds which purify the air and propel his ships across the sea. The capitals beginning at the Raphael end of the façade are sculptured with figures of children; heads of young knights and warriors; birds; emperors (among whom are Titus and Trajan); women's heads; virtues and vices symbolically represented; wise men, such as Solomon, Aristotle, and Pythagoras; the planets Saturn, Jupiter, Mars, and Venus; the patron saints of sculptors, each working upon a capital, a cornice, or a figure; the trades, such as those of the lapidary, the carpenter, the husbandman, the blacksmith; the seasons with their varying occupations; the ages of man represented by the infant, the schoolboy, the warrior, the student, and the old man leaning upon his crutch and dead upon his bed; the courtship and marriage of a young man and woman, who are again represented with their child, first an infant, then a youth, beside whose death-bed they are weeping and praying. Last of all we come to the column of Justice, which stands below the Judgment of Solomon and the statue of Gabriel. Its capital, which is the finest of the series, is covered with the richest leaf-work, growing upwards from its base and drooping in graceful volutes, between which are inserted figures of Justice seated upon two lions, the law-givers Aristotle, Solon, Numa, and Moses, and an admirable group of the Emperor Trajan reining in his horse to listen to the widow's prayer for vengeance upon the murderer of her son.'

The general plan and partial execution of these sculptures is attributed by Mr. Perkins to Filippo Calendario. If this be correct, the teacher profited little by the lessons he taught. Calendario was hanged from the balcony of the palace in the year 1355, for his share in the conspiracy of Marino Faliero. Of the Renaissance sculptors at Venice, Leopardi and Verocchio are remarkable as having together produced 'the noblest equestrian statue of modern times'—that of Bartolomeo Colleoni. In the 16th century, when the 'Baroque' style prevailed—'when architects declared war against the straight line, and erased logic in construction from their system, and sculptors twisted the limbs of their statuettes into the most impossible positions, hollowed out the folds of their draperies like chance furrows in broken rocks, and aimed altogether at novelty for novelty's sake'—the great Tuscan, Sansavino, for forty years misdirected all matters in architecture and sculpture at Venice. He was succeeded in the dictatorship of taste by his pupil Vittoria, whose great powers, viciously applied, completed the ruin of art.

At Bologna the chief interest attaches to the one Italian female sculptor of mark, Propertzia de' Rossi, whose generally received romantic history Mr. Perkins sets himself mercifully to demolish.

Even in this slight manner it would be impossible for us to touch separately on the histories of all the Italian schools; but a few words will indicate their general progress. Previous to the 13th century, although antique remains must have been everywhere abundant, they appear to have been wholly disregarded by the sculptors, who elected rather to follow the ugly, stiff, and elongated forms of the Byzantine school. But from that time the influence of those remains is apparent. Italy never frankly accepted the Gothic style; it was a thing foreign to her climate and her sympathies; she was slow to receive it, used it only with much modification, and soon threw it aside; and when, in the 13th century, Nicola Pisano laid the foundation of the great Tuscan school, although to a certain extent he adopted Gothic architectural forms, he based the composition and modelling of his figures on the antique. The superiority of the Tuscans was soon acknowledged and their teaching followed throughout Italy; con-



sequently we find everywhere a freer treatment of the human form, and, even in strictly architectural sculpture, little of that subjection to Gothic principles which is to be observed in contemporary work in Northern Europe. From the time of the Pisani the history of Italian sculpture may almost be said to be included in that of the Tuscan school. In the development of the art the Tuscan masters took the lead; in the later Gothic and Renaissance their works were its chief glory; and in the 'Baroque' their great powers, misapplied, hastened its decline.

After the extracts we have given, it is almost needless to say that Mr. Perkins writes in a style which would make interesting a far less attractive subject than that with which he has to deal. The volume is profusely illustrated by etchings and woodcuts; the former, by the author himself, are very carefully and lovingly executed. We miss the useful chronological tables which followed the chapters in 'Tuscan Sculptors'; but beyond this, in the luxuries of a copious index and in marginal and foot notes, Mr. Perkins gives us everything we could desire.

### SITE OF THE NEW LAW COURTS.

At a Meeting of the Social Science Association at the Society of Arts, on Tuesday evening, the adjourned discussion on the rival sites of Carey Street and the Thames Embankment was resumed.

LORD ELCHO, who was to have taken the chair, was detained at the House of Commons, and Mr. ROBERT STEWART, Q.C., presided in his absence.

Sir CHARLES TREVELYAN read a letter from Mr. T. W. Green, Q.C., who was unable to attend, expressing strong views in favour of the Embankment site. He also read a letter from Mr. H. A. Hunt, who took the same view of the subject.

Mr. WM. GOLDSMITH, who had moved the adjournment of the debate, resumed the discussion, and advocated the Carey Street site, notwithstanding all the arguments used by Sir Chas. Trevelyan, whose principal argument seemed to be that the Embankment site would best serve towards the ornamentation of the metropolis; and he did not think such an important matter ought to be decided by that standard. One great objection to the Embankment site was, that it would not be capable of future enlargement, like the Carey Street site. It was urged, in opposition to the point as to future extension, that the tendency of the present age was towards decentralisation; but if so, why were they going to concentrate the Law Courts? The fact was, that the law business of the country was daily increasing. The Embankment site might well be filled up by other buildings than the Law Courts. The Carey Street site would involve less expense in the alteration of streets than the Embankment site, and many of the proposals of Sir C. Trevelyan with regard to Lincoln's Inn and Gray's Inn would take perhaps a generation for their completion. Upon the question, therefore, of expense, time, place, and area, the Carey Street site was the superior one. The importance given to the fact of a railway station being made upon the Embankment was much over-rated, and he believed journeys in London could be performed as quickly on foot as by the rail.

Mr. O'HARA referred to the precedent of the Law Courts in Paris and Dublin, both being on the Embankment of the rivers in those cities, and thought that, as it was impossible to get the Law Lords, the Parliamentary Committee, and the Judicial Committee of the Privy Council to meet in the new Palace of Justice, it might be advisable to place the latter on the Embankment, as near as possible to Westminster.

Dr. SMITH supported the Embankment site, but regretted that the Courts were only about to be commenced, when the law business of the metropolis was beginning to diminish, as legal statistics would prove. As to the convenience of the profession, it was well known that they would follow the courts wherever they were placed, and the accommodation for them in and around Lincoln's Inn was known not to be very good. The Embankment site would give easy access both for the Temple and City practitioners, and the Carey Street site would be quite as valuable for other purposes.

Mr. SHIELDS, who has reported to the Government on this question, referred in detail to his various proposals. The Embankment site afforded one opportunity for architectural display, but only one; because, to make another on a level thirty feet higher would spoil the effect of the building. A perfect site, in his opinion, would be in the centre of a circle embracing the chambers of the legal profession; and this condition he thought would be satisfied by the Carey Street site, which would also afford better opportunities for architectural display than the Embankment site. The architectural view of the question, however, was not so important as that of business convenience. If the Carey Street site were adopted, it would afford a good opportunity for prolonging Piccadilly through Long Acre and Carey Street into Cheapside; and under that road a railway might be made without interfering with much property, or inconveniencing the tradesmen or the traffic.

Mr. VENABLES spoke in favour of the Embankment site, and argued against Mr. Shields's proposals, on the ground that they would involve an expenditure of three millions of money, which no one was prepared to find.

Mr. ROSE advised Mr. Street not to embarrass himself with the question of roads. The agitation for central Law Courts had been going on for years, and now they had got power to build them it was too bad that any delay should occur. Upon this ground, although the Embankment site had certain merits, he advocated that the buildings should be erected on the Carey Street site.

Mr. WEST deprecated any vacillation upon this question, and also urged that the Courts should be built on the Carey Street site as soon as possible.

Mr. THWAITES, speaking with a knowledge of the property which would be required for the Embankment site, said it was of such a nature that all parties would go in for very considerable compensation.

Mr. STREET, the architect, spoke not only in favour of the Carey Street site, but of the arrangements involved in his plan of the building.

Sir C. TREVELYAN replied to many of the arguments which had been used against the Embankment site, and dwelt at length upon the architectural and other advantages which its adoption would afford.

Mr. T. WEBSTER, Q.C., the author of the paper upon which the discussion had arisen, replied to the remarks which had been made generally, and urged that no improvement could be made upon the Carey Street site, which he had at first advocated.

The CHAIRMAN said that the meeting would now be in a position to vote upon the question, but it was not usual for the Society to take divisions.

In addition to the above discussion three meetings have been held by the Special Committee, invited by the Society of Arts to consider this subject, and *The Times* has published two powerful letters (one the 31st March, and a second on the 1st April) advocating the Embankment site.

### IMPROVED DWELLINGS FOR THE INDUSTRIAL CLASSES.

BY THOMAS CHATFIELD CLARKE.

Read at the Ordinary General Meeting of the Institution of Surveyors, April 5, 1869.

Mr. JOHN CLUTTON, President, in the Chair.

At the formation of the Institution of Surveyors, the question was asked, whether in its range was to be included all those matters connected, with building not mainly artistic; and the answer being in the affirmative no apology need be presented for the introduction of a subject so deeply interesting, professionally, morally, and socially.

So much, however, has been said and written in connection with this subject, that it would be difficult to lay down any new principles which should guide its development; but it may not be uninteresting to give a 'résumé' of the work actually done up to the present time in the metropolis, and to strengthen the hands of those whose care it has been to act on sound principles.

Before commencing the sketch I propose to give of the various societies in operation, I will, in brief, give my view of the first principles which should guide undertakings of this kind:—

1st. That there should be economy in the outlay consistently with due regard to durability and health, combined with great simplicity in all details.

2nd. That, financially, any scheme should be based upon such a fair percentage, in proportion to the outlay, as might be reasonably considered an inducement to others to follow the example set.

3rd. That the classes for whom you are to provide dwellings should be carefully suited as to locality and means in the different districts of the metropolis:

4th. That freedom from restraint or interference with the privacy and self-respect of the occupants should be carefully studied.

To the professional man many other questions must suggest themselves, of great interest and importance—such as the nature and plan of the structures to be inhabited; the desirability or not of erecting very high blocks of buildings; the possibility of adapting present structures, with sanitary and other appliances, when substantially built, thereby saving much outlay; the desirability of restricting or not the amount of accommodation below that usually considered essential; and the question of all others the most difficult—viz., will it be ever possible to succeed in being able to build dwellings which can be made fairly remunerative and yet applicable to the humblest classes of our citizens? Before passing on, I should like to offer a few remarks on each of these points, and to suggest a few thoughts in relation to them.

With respect to the nature and plan of the structures, it cannot be doubted that experience has proved the undesirability of erecting buildings on a large scale for single men, or for purposes of laundries and the like, with any hope of their being fairly remunerative, and that the buildings should be confined to such as are either of the block or cottage character. In like manner, it cannot be doubted, I think, that in the plans of the various buildings an avoidance of tortuous staircases and passages, of rooms with many angles and many doors, and too much glass, are all requisites; also that the staircases should have direct access to the outer air; that the passages should not have room-doors opening opposite to one another, nor, indeed, should there be passages at all, if possible; that all the appliances should be iron and stone, of the simplest but yet most effective character—such as the flushing of closets, sinks, and the like; and that, though the finish should be of the plainest kind, those additions which tend to make the dwelling comfortable in the eyes of its occupants should not be wholly wanting; and for this purpose cheap papers, of a glazed character, that would stand washing, would be of great service (with simple polished or varnished woodwork), the coating of the walls being as non-absorbent as possible—of course not being unmindful of the necessity for simple methods of ventilation.

With respect to the erection of very high blocks of buildings, I am doubtful whether, on a large scale, they are desirable; for it is evident that, unless placed in a street or square of very great width, the lower floors must be in a well, besides the possibility of great loss of life in an alarm of fire should the staircase be not readily accessible, or not prove wholly impervious to the effects of fire in the lower storeys. Doubtless the motive urging the erection of very high blocks of buildings is apparent, that you thereby reduce the ground-rent proportionately over the buildings; but in doing so you add somewhat to the thickness of your walls, and give to your buildings a character which to many forms an objection.

Taking the next point, viz., the possibility of adapting present structures for the purposes of dwellings for the industrial classes, I have always been desirous that this mode should be tried on an extended scale; for wherever tried on a small scale, with a proper choice of property, it has proved remunerative.

It has this advantage, that house property is taken on long repairing leases, often out of the hands of middlemen who oppress the poor, and at

no large outlay of capital a large amount of good may be done by adapting the same, and no very great liabilities incurred.

As to the remaining point, viz., the advisability of restricting the amount of accommodation with the view of keeping the rent within the means of the *humblest class*, I am not sanguine, with the present cost of land and buildings, that this can ever be done; and I fear those interested in this movement must be content to provide for a class somewhat above the lowest, hoping thereby to improve ultimately the nature and amount of the accommodation for the humblest.

After the brief notice I have given of the principles that should guide, in my judgment, the operations of such Associations, I now proceed to give a summary of the results of the working of the various agencies in the metropolis for this object that I have been able to gain information upon; giving approximately the capital expended, the nett dividend divisible, the number of persons accommodated, and statistics as regards the health of the inmates as far as I can ascertain the same. I also give some particulars of the rents obtained for single and sets of rooms.

One point in connection with these results I would strongly press on the consideration of those interested in this question—viz., the recent great increase in the taxation of these buildings, and the heavy incubus it is on the poor, or in reduction of dividends on these undertakings. Sir S. WARELOW has recently made a statement relative to the Company in which he has taken so leading and earnest a part, by which it appears that by the recent change in the law an increase of 37½ per cent. has been chargeable in respect of the rates on the Company's property.

In the order I have proposed to myself, I desire first to refer to the work of The Metropolitan Association for Improving the Dwellings of the Industrious Classes, as being the Association that, on a charter involving much preliminary expense and with many restrictions, has proceeded in such a careful manner with various tentative experiments as to entitle the managers of such Association to much praise.

It is satisfactory to learn, from the clear and detailed accounts presented by this Association, that several of their larger buildings are earning, after the payment of every expense, more than 5 per cent., and one of their largest blocks 6 per cent.

The statement of general results is as follows, to Midsummer 1868:—

Paying on a capital of about 100,000*l.*, exclusive of loans and advances, and provincial branches, this Association was enabled to divide at the rate of 4 per cent. last Midsummer, though having earned nearly 5 per cent., accommodating a population of 3,342 persons at that date, and with the favourable rate of mortality of 14 per 1,000, the average rentals per room being, I estimate, from 2*s.* to 2*s.* 6*d.* per week.

Ranking next in interest, perhaps, is 'The Improved Industrial Dwellings Company,' from the spirited way in which, in a short space of time, so many blocks of buildings have been raised in various parts of the metropolis, on plans peculiar in their conception and original in the class of material used in their construction.

This Company are going to avail themselves largely of the power to borrow from the Government at 4 per cent., to assist their undertaking, though the advantages likely to accrue from so doing have been lessened considerably by the great expense hitherto incurred in obtaining such loans.

With a productive capital, by the last Report, of about 90,000*l.*, this Company is enabled to pay 5 per cent., accommodating a population now of about 2,900 persons, but shortly hoping to increase that number, by their buildings projected, to 3,890 persons. No statistics of the health of the inmates have been kept, but, from some partial observations in one locality, they have been very favourable. The average rentals derivable are from 2*s.* 3*d.* to 2*s.* 6*d.* nearly per week per room.

(To be continued.)



### THE LAW COURTS.

To the Editor of THE ARCHITECT.

SIR,—Perhaps you will think that the accompanying letter to my address from Mr. J. P. O'Hara might with advantage be published in the present state of the discussion on the subject of the Law Courts. It contains interesting information relative to the experience of the Irish Bar, and suggests for consideration how far the habits of English lawyers might with advantage be modified in the same direction. Mr. Street's plans include commodious Consultation Rooms and Library for the Bar.

March 5, 1869.

I have the honour to be, &c.,  
C. E. TREVELYAN.

To Sir Charles E. Trevelyan, K.C.B.

SIR,—As a member of the legal profession in both England and Ireland (being an Irish barrister since 1856, and a student now of Gray's Inn), I beg to thank you for your most felicitous idea of erecting the Law Courts on the Thames Embankment. Permit me to offer a few observations suggested to me by the state of the legal world in Dublin. The Courts there are at least a mile from the residence (in which is always the office) of any barrister, yet, so far from this being an inconvenience, it is the reverse. It offers a change of air (which a mile in or from town sometimes can confer better than ten in the country), and also compels some slight daily exercise to be resorted to by professional men. Being of politico-economic principles, I do not approve of any direct or indirect compulsion in respect of anything whatsoever not required by the necessities of the State. I only mean that the supposed inconvenience of courts being distant

from chambers is, in the case of barristers, no real inconvenience, especially as those in brisk practice may survey their notes in cabs, if they do not like walking to court or wasting time on exercise. A barrister in Dublin has no chambers but his residence; because the vast library in the Four Courts supplies him with a place where he can peruse his briefs, and at the same time be within call. A porter is stationed at the door for the express purpose of calling barristers when wanted by anyone. The library in the new London Courts will, of course, serve this very same purpose. This takes the brunt off the objection as to the courts being distant from chambers.

The conveyancing and special pleading bars, indeed, will still hold chambers. But these members of the profession rarely go to court. They stand in the same relation to the advocate that the civilian did in the time of Cicero to the forensic orator.

Now, as to the attorneys. As a concentration of courts will bring the bar together, so, for that very same cause, it will lead an attorney in search of a counsel to go to court to look for him rather than to his private chambers or residence. Let us distinguish between the different classes of attorneys. The City attorneys will always remain in the City. They have chambers there, not for legal, but trade purposes; not for being in contact with the bar, but with the public. Until the City tide ebb to Charing Cross, and Macaulay's traveller arrives from New Zealand, the City attorneys will remain where they are. As no one suggests that the Courts should be built in the City, the City attorneys, therefore, may be eliminated from the present inquiry. Next comes the central square mile about Lincoln's Inn Fields. But, surely, the attorneys there are not zoophytes. They can move on a proper cause for motion. They can easily, as accessory, follow their principal, Lincoln's Inn, whithersoever that withered and grotesque structure goes. Now, surely, Sir, there is nothing in the size or architectural beauties of Lincoln's Inn that ought to affect the consideration of the public on this point for one moment. The only advantage Lincoln's Inn has is the adjacent square, which freshens the air. But there is much greater reason, as to that head, for preferring the Embankment.

The particular object I have had in view in offering these observations is to suggest that, as a concentration of jurisdictions is the primary purpose of the scheme on foot, the Embankment between Hungerford and Westminster is the proper site for the Courts—otherwise, there will be no concentration. The head will be detached from the inferior members—a consideration which in future will be more important than ever, owing to the probable decentralization of judicatures, with a proportionate increase of appeals to the ultimate court. The Law Lords and the House of Lords will never consent to the trial of causes before them elsewhere than at St. Stephen's. Therefore, upon this ground, as also in the interest of the parliamentary bar, as also because the profession would thus be constantly in contact with the Legislature, I respectfully suggest that the site I have referred to is the natural site for the Courts. Finally, owing to the greater prevalence of westerly winds than of those from other points of the compass, the air at the West End is exceedingly good. Therefore, as likely to spend most of my remaining days in the New Law Courts, I implore you, for the sake of the health of the profession, to seek to give us above all things good air. This can be had at Westminster; to some slight extent at the Temple, but not at all at the Strand.

I cannot appreciate the effrontery (for such it is) with which any body of lawyers can pretend that the Carey Street site is superior in any respect to any part of the Embankment. When it was proposed many years ago to prohibit intramural interments, the clergy of London took alarm, and a venerable archdeacon actually charged the clergy of his archdeaconry on the subject, pointing out the advantages of intramural interment. 'There are laws of death,' said the good archdeacon, 'as there are laws of life,' &c. The *Times* suggested the key to this nonsense. Fees were in question. It is greatly to be feared that some similar undercurrent is working in the recesses of the legal consciousness of those members of the profession who refuse to stir, though offered such very eligible accommodation and pure air.

Wherever the New Courts are erected, thither will the legal eagles resort. Why, then, should the antiquated legal settlements centering on Holborn at all affect the consideration of this subject? Unfit for habitation, they have nothing whatever but antiquity to recommend them. But, at all events, a library, club-room, refreshment room, and a suite of consultation rooms in the new palace of law would leave little to be desired by the forensic barrister in respect of chambers. All married barristers (and the profession do not boast asceticism) live, as a rule, a considerable distance from chambers, and many ten or twelve miles from town. These, in the morning, instead of repairing to chambers, would go to court at once. There, in the hall, library, or club-room, they could see their clients. This is the universal rule in Dublin. The court would thus be a forum in the classic sense.

A very considerable portion of the profession have an interest in retaining the Courts at Westminster. But, however, as I consider the question of chambers and vested interests therein altogether subservient to the primary one of concentration and of air, I make no account of these more than of their City brethren. The former will find inconvenience in one class of legal duties keeping them in attendance on parliamentary committees or appeals, and another requiring them to be a mile off, but this would be worse if the Courts were placed on the Carey Street site, which has not the advantage of a railway. If they are placed on the Embankment site, barristers in attendance at Westminster may, with the help of the Metropolitan Railway, be in their place in court in five minutes after they are summoned by telegraph.

With respect to room anywhere, it cannot give you, aided by the Chancellor of the Exchequer, any trouble. If you buy fresh land, you can sell what you have. Approaches, too, for the same reason, need not be considered.

The Embankment will probably not lessen the traffic in the Strand to the extent supposed. The quays in Paris and Dublin are comparatively deserted; while the lines of street parallel thereto are crowded. These analogies are not to be lost sight of. There is only one row of houses, it is to be remembered, fronting each side of a quay, consequently there can

be only one half the natural flow of customers to other streets. So much so is this the case, that, the road being comparatively clear of vehicles, the drivers of carts, &c., in Dublin, drive faster there than elsewhere, and, I must confess, make more noise. You may make any public use of this letter.

I have the honour to be, Sir, your obedient servant,  
Gray's Inn, March 27, 1869. JOHN P. O'HARA.

## NEW BUILDINGS AND RESTORATIONS.

**The Academy of Music, Vienna.**—The new Conservatoire or Academy of Music, now in course of construction behind the Würtemberg Palace, under the superintendence of the celebrated architect Hansen, will, when completed, contain the finest concert-room in the world, with two thousand stalls, and gallery room for eight hundred auditors, and the great hall will be convertible at a few hours' notice into a ballroom by the application of an ingenious but simple process for sinking the whole of its stalls, &c., under its flooring. Besides enormous double galleries, there will be fifty-two large boxes, including the Imperial box. All the offices, wardrobes, *fumoirs*, &c., are on the ground floor, spacious, commodious, and easy of approach. On the right and left of the entrance portals, two wide flights of stone steps lead upwards to the greater and lesser halls, both on the first floor and occupying the remaining height of the building; they are connected by a broad corridor, so that they may be made available at once on extraordinary occasions, such as monster balls. For the Imperial family a special entrance and marble staircase is constructed on the eastern side of the edifice. The decorations of the larger hall will be red and gold; its ceiling will be covered by frescoes emblematic of the divine art; and three colossal statues—Winged Poetry, supported by Gay and Mournful Music—will ornament the *Loggia Principale*. Busts of all the principal composers will be ranged in niches, and marble genii will bear on their shoulders the pillars dividing one box from the other. The frescoes, by Eisenmenger, will represent Apollo and the Nine Muses; Orpheus, the original 'Wandering Minstrel,' in the different phases of his musical expedition; Arion and Sea Nymphs, '*volutis zonis*,' and other groups of appropriate figures. The proposed expenditure will amount to eighty thousand pounds, and more than half of the sum has been raised by voluntary subscription.

**The New Station of the North-Eastern Railway in Leeds.**—The new station is a few yards to the south of the Wellington Station and parallel with it, and it is at this portion of the works where the most remarkable features of the whole undertaking are to be met with. Of the hundreds of thousands who pass through the Wellington Station, probably comparatively few are aware that the building has for a foundation a number of arches, through which flow the murky, slimy waters of the Aire. To construct the new station at the requisite level and give ample field for the wonderful reticulation of lines and points, a preliminary and greater work had to be accomplished, in the erection of an extensive series of arches, through which, during floods, the waters roll and foam with a tremendous roar. These arches cover no less than seven and a half acres, and it is said that in their construction no fewer than eighteen millions of bricks were used, and in the course of their erection difficulties of no ordinary character presented themselves. In one case the foundation of one of the pillars had to be inserted at the base of a chimney forty feet in height connected with the engine shed of the Midland Company, and that was accomplished without a single strain upon the chimney. Obstacles of a similar character were also successfully overcome. The canal basin lock is spanned by a magnificent girder bridge, which, it is said, has cost 10,000*l.* It is formed of eight enormous wrought-iron girders, each weighing about 70 tons, the span being 85 feet clear, and the width of the whole about 200 feet. For this bridge the contractors were Messrs. Pantan and Sons, of Sunderland, who also supplied the girders for the rest of the iron bridges, with the exception of that in Neville Street, the iron of which was by Messrs. Butler and Pitts, of Stanningley. When the workmen were engaged on the arches and road in the immediate neighbourhood of the lock, they discovered, buried eight feet below the surface, a quantity of piles of oak, four feet apart, the intervals being filled in with stone. It is not improbable that they played some part in the construction of the navigation, but the antiquarians of the neighbourhood offer no satisfactory explanation. The ford—in the immediate neighbourhood of which was the Waterloo swimming bath before the commencement of the railway works—is spanned for about 250 feet with seven straight massive arches of solid ashlar, the arches extending down stream for about 200 feet. The danger from floods is reduced to a minimum by the walls of the 'jack' arches being constructed on the skew in the direction of the stream, so that the least possible resistance may be offered to a heavy current.

The arches already described form in reality the foundation of the station-buildings, which are of an equally extensive character. The site is in form very peculiar, but the architect, Mr. Thomas Prosser, has adapted the structure to its position with considerable ingenuity, though it must be admitted that it will receive admiration more on the score of utility than on that of appearance. The entrance to the station is approached under the covered carriage way at the east end of the Wellington Station. In arrangement the buildings may be said to bear some resemblance to the letter Y, the stem and right spur being formed of two wedge-shaped blocks with rounded angles, and the left spur representing the ticket offices. The latter are of an oval form, are 75 feet in length, and have a central passage 14 feet wide, the block on the right being occupied as parcels offices, and that on the left as booking offices, the booking clerks of each company being accommodated in the same building, though in different compartments. These offices stand at the entrance to the station, and the arrangement is such that the traffic will be greatly facilitated. Diverging to the right on reaching the platforms, the whole of which are 25 feet in width, is the 'dock' of the London and North-Western Company, the platforms surrounding which have a total length of 630 feet, of which 302 are covered in. To the North-Eastern main line there is a covered platform 513 feet in length, the total length being 940 feet. Separating this main line from the London and North-Western 'dock' is

one of the wedge-shaped blocks 130 feet in length. In addition to the refreshment rooms there are on the ground floor lavatories and other conveniences. The upper storey will be occupied by the superintendents of the lines and in various other ways. The smaller block, or right spur of the 'Y,' is 96 feet in length. In its accommodation is provided for the joint station master, the assistant station master, two telegraph offices, &c. On the Wellington Street side of this building is a siding for the North-Eastern traffic, and outside the southern wall of the station, which is 508 feet long, are two lines for the use of the goods trains. The roof, which is constructed of glass and iron—the contractors being Messrs. Butler and Pitts, of Stanningley—is supported by a series of iron pillars with perforated spandrels. Peculiar and irregular in shape, it may be described as having a sort of double-pitch; it is very lofty, being about sixty feet high; the greatest span of the roof of the London and North-Western dock is 92 feet, and of that over the main line 68 feet. This portion of the works has been carried out under the immediate superintendence of Mr. Wm. Brown, the contractors for the station buildings being Messrs. George Thompson and Co., who have also executed the whole of the arches, and the rest of the line, with the exception of the iron bridges.

**Her Majesty's Theatre.**—The contract between the Earl of Dudley and Messrs. Trollope was signed May 28, 1868, and the further contracts for the decorations and the stage were entered into at the beginning of the present year. Messrs. Trollope were bound under heavy penalties to complete the whole by the end of last month, and very confident predictions were made that the works would not be accomplished, and that Messrs. Trollope would be probably ruined by the penalties that would be enforced against them; but in the unprecedented short time of ten months everything has been completed, and the building in a condition to be handed over to the lessees, with whom it now rests to take measures for opening the theatre.

**Louth.—Church Restoration.**—We are glad to learn that the restoration of the Parish Church now in progress embraces the pulling down and the rebuilding of the north porch, one of the most modern, but most completely incongruous portions of the edifice. Both in style and material it was altogether unworthy of its connection with such a noble building as this much admired church. It is now levelled with the ground. It is sincerely to be hoped that the architect, Mr. Jas. Fowler, will in its place raise a porch of such a character that it will be an ornament to the rest of the edifice.

**Opening of a New Presbyterian Church at Darlington.**—A new English Presbyterian Church has been opened in Northgate, Darlington. The building, which is a handsome edifice in the Early Gothic style, will involve a total outlay of about 2,700*l.* The church is built of stone, and has a spire. A stained glass window faces the main thoroughfare. The building is calculated to hold 550 worshippers. It is divided into nave and aisles by iron columns. The architect is Mr. J. Ross, of Darlington.

**The Parish Church of Icombe, in the diocese of Bath and Wells, is about to undergo restoration.**

**A New Pier has just been opened at Clevedon.** The Engineers are Messrs. Ward & Grover. Our contemporary, *Engineering*, gives the following technical description of the works:—'The contractors for the whole of the pier are the Hamilton's Windsor Ironworks Company Limited, of Liverpool, who have recently completed successfully a very large similar work at Colon, in Panama. The contractor for the masonry and approaches is Mr. Ambrose Oliver, of Hitcham, Bucks. The general dimensions of the structure are as follows:—Length of approaches, 180 ft.; length of the pier (in 8 spans of 100 ft. each), 800 ft.; length of the pier-head, 42 ft.—making a total length of over 1,000 ft., and giving a minimum depth at extreme low water spring tides of 6 feet at the pier-head, which is therefore always accessible. The approaches are generally 25 feet wide, and are executed in first-class masonry, the footings of which are let into steps cut out of the solid rock. Powerful moorings, or holding-down bolts, which are carried through this work at an angle of 45 degrees, serve to secure the main girders from moving from their bearings. The pier itself is composed of eight 100 ft. spans, consisting of two continuous wrought-iron girders 3 ft. 6 in. deep, which serve partly to form the parapet. On the top of each girder there is a continuous seat, the back of which is made up of tight boarding. The deck is of 3 in. planking, machine planed and closed jointed, laid lengthwise, and cambered in the centre 3 inches, so as to give the effect of the long and pleasing perspective of a flush deck on board ship. The main girders are supported by double cantilevers, so that they could be divided in two in their centres without danger. These cantilevers are composed of Barlow rails, bottom upwards, bent, and having flat plates riveted on their backs, the distance or spandrel pieces being a combination of T irons and plates. The main longitudinal girders are kept apart by rolled joists 9 in. deep, 16 ft. 6 in. long, and about 20 ft. 6 in. from each other. Between these again runs a system of diagonal bracing below the deck, the idea being to make the whole superstructure one deep lattice girder laid upon its side. The piles, which in the deepest point reach the height of 65 ft. above ground—which, added to an average of 15 ft. in the ground, makes them as much as 80 ft. long—are composed each of two Barlow rails riveted back to back. They are placed at a rake of 1 in 10 both ways; and at the top the pair on each side are brought into intimate union by means of a wrought-iron plate passing between them. The two united rails are bent over, and form an arch of considerable stability. The piles are kept in position by a complete system of diagonal bracing and distant pieces or struts. That part of the pile which enters the mud is made of 5-inch solid wrought-iron stems, at the end of which comes a 2 ft. 3 in. cast-iron screw. These are carried down to the rock. Where the rock is on the surface, the piles are secured to it. One important and very advantageous arrangement of the piles appears to be that they are so combined and connected as to form in themselves a powerful girder, which would not only resist any tendency to buckling but would be effectual, probably, in withstanding the shocks of wreckage or of an average-sized vessel itself. The pier-head on plan measures 42 ft. by 50 ft.; is in itself a formidable structure, being 65 ft. high, and is built of eighteen piles, each made of two Barlow rails, riveted back to back. At vertical intervals of



every 10 ft. come five lower landing decks or stages. These are made of open boarding, laid upon a strong framework of rolled iron joists and girders, which serve as distance-pieces between the piles. Horizontally, diagonally, or cross-diagonally, runs a complete rigging of wrought-iron rods as bracing, and in the centre up the entire staircase are to be carried the stairs, which are wide and ample, and of which there will be five pairs. Around the entire wrought-iron framework runs a vertical casing of 1 in. timber fender-piles, about 2ft. 6in. apart, which are intended to distribute the shocks of vessels discharging. The pier-head is doubtless sufficient for the purposes of a landing-stage, for which it seems to be designed; but if it is to be used as an attraction for promenaders, as a resort for the residents and visitors of the pretty little town of Clevedon, as a place where the band may play on summer evenings, to the delight of "congregated thousands," then we fear its deck area of 50 feet by 42 feet less the stair opening will be found too small. It should have had another row of piles on each side, which would have increased it to 76 feet by 42 feet. Even then there would not have been too much space, after deducting all the obstructions of band-houses, pollards, masts, ropes, signal-huts, &c., and the numerous necessary adjuncts to a work of this character. In all other respects the work seems well adapted for its situation. The large spans are right in view of the difficulty of the foundations. The openings are pleasingly formed by the elliptical arch. Advantage has been taken of the important combined principles of "continuity" and "double cantilevers." The piles, though long, are clustered, and we know that union is strength. Although the use of the Barlow rail as a pile is not altogether new, it has, we believe, never been employed in England before for a work of equal importance. It remains to be stated that the quantities of wrought iron used are nearly 350 tons, and of cast iron under seven tons.

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

### Royal Archaeological Institute.

The annual meeting of the Royal Archaeological Institute of Great Britain and Ireland will be held in 1869 at Bury St. Edmund's—a town rich in objects of archaeological interest. The Marquis of Bristol will be the President for the year, and the three sections of Antiquities, Architecture, and History will have for their chairmen the Bishop of Oxford, Mr. A. J. B. Beresford Hope, M.P., and the Venerable Lord A. Hervey. The meeting will probably commence in the third week of July, but the precise date has not yet been fixed.

### The Bath Bells.

We hear that the accident which has happened to the tenor bell of the Abbey peal—noticed by us in a late number—is to be repaired by re-casting. A subscription is to be opened to defray the expense, which will only amount to the moderate sum of 120*l*.

### Harbour and Coast Works Ordered in France.

An Imperial decree, which has just been promulgated, orders that the works in course of execution for the construction of a port in the small bay of Porstrein at Brest shall be modified according to the plans and advice of the general Council of the Ponts et Chaussées and Mixed Commission of Public Works, the effect of which is to increase the estimates for the work from 640,000*l*. to 930,000*l*. Another decree orders the execution of the necessary works for the formation of a port at Berre on the lake of that name near Cette; the cost of this work is estimated at 6,800*l*., of which the Department and the Commune are to pay 1,700*l*., and the State the remainder. By a third decree, works estimated at 9,800*l*. are ordered to be executed for the improvement of the bay of Herbaudière, in the isle of Noirmoutier in La Vendée.

### Method of clearing the Paris Sewers of Mud and Gravel.

In the sewers which have a fall of not more than about three feet in the mile, the accumulations of gravel and mud cause a great deal of trouble, and the following are the methods employed to prevent the choking of the collectors: in the larger sewers, boats are used for the cleansing, and in those not exceeding four feet in width, small trucks running on rails; in each case a hatch is fastened to the head of the vehicle and can be lowered to any required depth; the effect of this is to interrupt the flow of the waters, which then rush impetuously by the sides and through openings made for the purpose in the hatch; this is found to answer well in certain cases, but in some parts banks of deposit are formed, extending two hundred yards or more, and recourse is had to positive manual labour, and the mud and gravel are swept out to the mouth of the great collector, at Asnières.

The method adopted for cleansing the great sewer syphon of the Alma is ingenious; the tubes are one metre in diameter, and a wooden ball, nearly nine tenths the size of the tube, is introduced; the consequence is that the sewage water rushes with great violence below the ball and exerts a powerful scouring action.

It is not out of place to add, that the length of the sewers of Paris is rather more than 312 miles, and as the streets measure more than 400 miles it results that there are 128 miles of street still unprovided with sewers.

### The Paris Annual Exhibition of Works of Art and Popular Election.

The works sent in for exhibition at the coming *Salon*, which opens, as usual, on May 1, amount to the extraordinary number of 6,375, of which 5,570 are oil paintings, drawings, &c., and 805 sculpture, engravings, and architectural drawings. This is, we believe, the largest number ever received, and there is a sufficient number of important works, known in art circles, to show that the *Salon* of 1869 promises to be above the general average in interest.

The juries that are intrusted with the reception or rejection, and the hanging of the pictures, as well as with the award of all the medals, with the

exception of the two great medals of honour to be given in the sections of Painting and Sculpture, have just been elected. Two thirds of each jury are elected by the votes of all the artists in its own section who have had one or more works received at former exhibitions, and who have sent in anything for exhibition this year—a very broad franchise, as will be admitted. This mode of election has been adopted now for three or four years without alteration, except that artists absent from Paris are allowed to vote by letter. On the present occasion about eight hundred voted, and the result will show whether popular election and a low standard have any connection. The following are the names of the elected jurors, placed according to the number of votes they obtained:—

*Section of Painting and Drawing*.—MM. Gérôme, Baudry, Pils, Bonnat, Bida, Gleyre, Fromentin, Comte, J. A. Breton, C. F. Daubigny, J. N. Robert-Flcury, and Cabanel.

*Section of Sculpture and Medal Engraving*.—MM. Barye, Guillaume, Perraud, Soitoux, Dumont, Paul Dubois, Cabet, and Carpeaux.

*Section of Architecture*.—MM. Duc, P. F. H. Labrousse, Duban, Vaudoyer, Viollet-Leduc, and Ballu.

*Section of Engraving and Lithography*.—MM. Lalanne, Monillon, Jacquemart, Boetzel, Gauchere, Henriquel-Dupont.

There are undoubtedly several names of artists of the highest rank missing from the above lists, but some of these decline to serve, while others reside constantly at great distances from Paris, and several out of France: the mode of election is therefore to be judged of by the standing of the artists elected, and not by the missing names. Almost all the candidates who are members of the Institute or Professors in the Ecole des Beaux-Arts have been elected. The rest of the jurors are appointed by the Government, that is to say, by the Minister of the Beaux-Arts, and consist principally of eminent art critics and connoisseurs; they are as follows:—*In Painting, &c.*—MM. Alfred Arago, Cottier, Vicomte Delaborde, Théophile Gautier, Lacaze, Comte de Lezay-Marnésia. *In Sculpture, &c.*—MM. J. A. Barre, Michaux, P. de Saint-Victor, Endoux Soulié. *In Architecture*—MM. Boeswillwald, Albert Lenoir, and Du Sommerard. *In Engraving and Lithography*—MM. A. de Beaumont, Charles Blanc, Endoux Marçille.

It is pleasant to be able to add that while under the old system, when the jurors were appointed by the Academy of the Beaux-Arts, the complaints of partiality were constant, there has scarcely been a whisper of discontent since the new mode of election has been in operation.

### Notes for Connoisseurs.

At the sale of the collection of Kraetzer of Mayence which took place in Paris, on March 31, there were some remarkable works of the Dutch school, of which the following were amongst the most prominent: David de Heem, Flowers and Insects, 180*l*.; Wilhelm Kobell, the Auberge, 113*l*.; Weenix, Game and Sporting Implements, 200*l*.; and the Tinker, by the same, 60*l*.; Philip Wouvermans, Marine-piece, 56*l*.; and a landscape by Jean Wynants, with figures by Lingelbach, 126*l*. 8s.

Sales are coming thick and fast as the season advances. A good collection of pictures belonging to the late M. Alphonse Ondry, including works by the best Flemish, Dutch, and Spanish artists, is to be sold in Paris on the 16th and 17th of the present month of April. A very fine collection of objects of Oriental art and curiosities, made by the late Alfred de Rougemont, is announced to be sold on the 14th instant and five following days; this collection includes arms, bronzes, enamels of various kinds, jewellery, and porcelain.

On the 20th inst. and four following days the collection of the late Baron Albert de Hirsch, of Vienna, is to be sold in Paris. It consists principally of antique and modern cameos and intaglios, silver-work of the fourteenth and seventeenth centuries, Venetian glass, carvings in ivory and wood, carved furniture, and Gothic coffers, bronzes, &c.

The well-known collection of furniture of the fourteenth to eighteenth century, clocks from the time of Henri II., bronzes, ironwork, arms, &c., belonging to the late M. Bigillon, of Grenoble, is to be sold in that town on the 14th to 30th inst.

But one of the finest private collections of objects of *virtu* is that of the late M. Edouard Fould, which is being sold in Paris this week and attracts all the connoisseurs to the auction mart.

### Leonardo da Vinci.

The 'History of Leonardo da Vinci,' on which M. Arsène Houssaye has been engaged for years, has just been published.

## General.

At a late Meeting of the Common Council, held at Guildhall, Mr. Alderman Causton gave notice of his intention to move at the next court that a statue in commemoration of the late Prince Consort be erected by the Corporation, at a cost not exceeding 3,000 guineas, as the City of London Memorial of his late Royal Highness.

The opening of the Wedgwood Institution at Burslem is now definitely fixed for Wednesday, the 21st inst., when an art exhibition, including a most extensive display of Wedgwood Ware selected from the best collections, will be opened by the Right Hon. the Earl de Grey and Ripon.

The works of the railway between Athens and the Piræus are now nearly completed, and will be opened for traffic in a few days.

The Building Trade at Bradford.—There is every probability of the lock-out of stonemasons at Bradford on May 1, all attempts thus far to prevent such a result having failed. The master-builders insist on the masons accepting payment by the hour, abolishing their rules relating to machine and quarry worked stones, and submitting all disputes to settlement by arbitration. The notice served on the workmen by their employers specifies that 7*d*. per hour shall be the ordinary rate for skilled workmen; that the rules against machine and quarry worked stone shall be abolished; that all disputes shall be settled by conciliation or arbitration, courts to be

formed for this purpose; that, upon six days' notice, the masters are prepared to publicly meet the men, select arbitrators, and mutually appoint an umpire; and that these alterations are required to come into force on May 3, 1869, or upon such other day as the new or altered rules shall come into force. Mr. M. Shepherd, Secretary of the Bradford Lodge of Masons, has replied that it was unanimously resolved, at a general meeting held on February 10, to carry out the following resolutions:—'1. That this meeting is of opinion that the notice of the master-builders of Bradford would be injurious to our society, and pledges itself to resist it with all its power. 2. That this meeting considers that the present rate of wages and hours of labour are nothing in excess of the demands of the working mason, and pledges itself to maintain them in their entirety.' The conflict thus seems inevitable, and this cannot occur without inflicting injury on artisans in the other branches of the building trade, and arresting the progress of the building trade in the district.

**Stained Glass Windows in St. Michael's Church, Alnwick.**—Four additional memorial windows (to the memory of the late Algernon, fourth Duke of Northumberland) have been placed in St. Michael's Church, Alnwick—one in the western end, and the other in the chancel. The first window on the east represents, on the lower panel, the Epiphany, the shepherds on one side, and the wise men on the other; and on the upper panel, the baptism of St. John. The second window has on the lower panel the Last Supper; on the upper the Crucifixion, with the Virgin Mary, Mary Magdalene, and 'the other Mary' on one side, and Joseph of Arimathea, &c., on the other. In the tracery above are angels bearing shields, with the crown of thorns, &c., on them; and in the quatre-foil the arms of the Duke. The third window has on the lower panel the Resurrection, with on one side the three Maries, and on the other Peter and John; on the upper panel is represented the Ascension, with the eleven apostles on either side and angels above, as in the central window. The west window illustrates the *Te Deum*. On the lower panel is St. Michael, with the Church Universal on one side, the martyrs on the other side. On the upper part is Christ as 'the King of Glory,' and on either side the apostles and prophets. Above are Cherubim and Seraphim, with crowns in their hands, and with scrolls, singing 'Sanctus,' &c. The windows are 13ft. high by 6ft. 3in. in breadth; the lower panels are 4ft. 6in. by 1ft. 9in.

**Architectural Remains in Java.**—Few Englishmen are aware of the number and beauty of the architectural remains in Java. They have never been popularly illustrated or described, and it will therefore take most persons by surprise to learn that they far surpass those of Central America, perhaps even those of India.—*The Malay Archipelago.* By A. R. Wallace.

**Mr. Hardwick, the architect of Lincoln's Inn Hall and Library, has, after long and honourable service in his profession and the Royal Academy, determined to surrender his seat as R.A.**

**New Dock Works.**—The first stone of the new works for the extension of Portsmouth Dockyard has been laid. A block of Portland stone, weighing some five tons, was fixed at one end of a vast excavation, which will form one of four docks that will stand on the south side of the new repairing basin included in the general plan of the extension works. A silver trowel, together with a square, plumb-line, &c., were handed to Mrs. Wellesley, who performed the duties of master mason, and declared the stone well and truly laid. A few words were then spoken by Rear-Admiral Wellesley, and a great engineering work was formally commenced.

**Sewage Irrigation.**—On Monday the Leamington Local Board held a special meeting to consider an offer received from the Earl of Warwick, to take the whole of the sewage of the town for a term of thirty years, and dispose of it by irrigation on his Lordship's estate, two or three miles south of Leamington. The local board are to lay down the requisite mains, construct the necessary works, and pump the sewage to a given point on the estate, and in return his Lordship will pay the board 450*l.* annually for the sewage. The terms proposed by his Lordship were unanimously approved of by the board, and the offer was accepted, and will come into operation on March 25, 1870, by which time Lord Warwick will be prepared to dispose of the sewage on his estate.

**Messrs. Macfarlane & Co.** are about to remove the well-known business so long carried on by them as architectural ironfounders, sanitary engineers, and art workers, at the Saracen Foundry, Glasgow, into the country immediately outside the city. Contracts have been entered into for the erection of new works at Possil Park, formerly the property of the late Sir Archibald Alison, Bart., Sheriff of Lanarkshire. The property has been divided off by feuing, accommodating about thirty tenements of double houses, in addition to Messrs. Macfarlane & Co.'s new works. These works are to be connected with the Helensburgh line of the North British Railway system. The line is to be adapted to suit the convenience of any persons who may feu ground for public works. It is expected that not less than 40,000*l.* or 50,000*l.* will be expended by Messrs. Macfarlane & Co. on these new works. Messrs. Boucher & Cansland are the architects, and Messrs. Copeland & Foulis are the engineers.

**Metropolitan Board of Works.**—The report of the Metropolitan Board of Works for the year 1867-8 has been published. The Board conclude their report with a complaint of the inadequacy to the growing requirements of the metropolis of the funds placed at their disposal. They express a hope that the attention of the Legislature will shortly be directed to the important question of readjusting the taxation between the owners and occupiers of property in the metropolis, and then ultimately the requisite revenue will be placed at the disposal of the Board, without the necessity for imposing additional burdens on those who are already so heavily taxed. The total amount of the cash balances on March 26, 1867, was 414,671*l.* 12*s.* 3*d.*, and the total receipts during the year 1866-7 amounted to 2,600,684*l.* 18*s.* 2*d.* The expenditure during the year was 2,595,696*l.* 12*s.* 1*d.*, and the cash balances on March 25, 1868, amounted to 419,659*l.* 18*s.* 4*d.*, the balanced total being 3,016,366*l.* 10*s.* 5*d.* Of the 8,563,000*l.* the Board had from time to time borrowed in various ways, 1,659,633*l.* had been paid. The total indebtedness of the Board was, therefore, 6,903,366*l.*

**The Angel Hotel, Oxford.**—This once famous hotel, as well as the adjoining property, is in course of demolition, preparatory to the whole of the ground, having a considerable frontage to High Street, and extending in the rear to Merton Street, being cleared to make way for the new Schools about to be erected by the University. Some interesting historical events are connected with this hotel. In ancient times the site was occupied by a building as a place for the reception of clerks, though an inn, which bore the title of the Saracen's Head. We are told by no less an authority than Anthony Wood, that 'the first coffee-house in Oxford was opened in 1650 by Jacob, a Jew, at the Angel, in St. Peter-in-the-East, and there it was by some, who delighted in novelty, drank.' Dr. Johnson generally took up his quarters at the Angel in his occasional visits to Oxford, and Boswell tells us that when he accompanied the great lexicographer to Oxford in 1776, 'we put up at the Angel Inn, and passed the evening by ourselves in easy and familiar conversation.' When Queen Adelaide paid a three days' visit to Oxford, in October, 1835, she occupied apartments at the Angel, where she held a levee and drawing-room. In the old coaching days the Angel was in the zenith of its popularity, and was the favoured house of resort of the wealthy and dignified among the aristocracy, as well as the most eminent in literature and science, who from time to time visited the University. But, since the introduction of the railway system, the fortune of the establishment has gradually declined, and a few years ago it was purchased by the University, since which time it has been entirely closed. In a few weeks it will be entirely razed to the ground, and no long time will elapse before the site is occupied by a structure, the architectural features of which will compare in beauty and magnitude with those that already adorn the High Street. Plans for the new Schools have been prepared by Mr. Deane, the architect of the University Museum.

The bronze statue of Lord Palmerston, for which a grant was voted by Parliament, will be placed in New Palace Yard in May next. The figure is seven feet high. Lord Palmerston is represented in the act of addressing the House of Commons.

## QUESTIONS.

### Letting Contracts.

DEAR SIR,—Lately there has come under my notice a case of a contract being settled, which has caused a great deal of dispute and argument, whether or not it was decided properly; and as there are two parties, who are perfectly convinced that they are both right—the one, of course, won't give in to the other—perhaps some of your readers will be able to give me some information on the subject, the particulars of which are as follows, viz. :—

An acting committee, having received from the architect plans and specifications for a dwelling-house which they purposed erecting, an advertisement was duly inserted in a newspaper, requesting offers, of which they received several. Putting aside the mason work, as it was settled beyond dispute, I now come to the point upon which I desire the information. One of the contracts was rendered as follows:—'I hereby make offer to do the joiner, plumber, slater, and plaster work for the slump sum of 363*l.* 10*s.* sterling, viz. :—

Joiner work	• • • • •	£259 10 0
Plumber, Slater, and Plaster work	• • • • •	• 104 0 0
Amounting in all to	• • • • •	£363 10 0

All the other offerers were separately, and upon taking them jointly the amount stood as follows, viz. :—

		Lowest separate offers.
Joiner work	• • • • •	£258 19 6
Plumber „	• • • • •	• 35 10 0
Slater „	• • • • •	• 37 15 0
Plaster „	• • • • •	• 31 12 0
		£363 16 6

A portion of the committee claimed the joiner work for this contract, being lower than the other by 10*s.* 6*d.*, although there is a difference of 6*s.* 6*d.* in favour of the first-mentioned contract. The plea put forward was—that the joiner had nothing to do with the plumber, slater, or plaster work; but there was nothing in the specification either in favour or against a slump offer.

How ought this to have been settled; and who ought to have got the contract?

Your insertion of the above will oblige

March 22, 1869. Yours, &c.,  
A CONSTANT READER OF YOUR PAPER.

### The Strength of Arches.

Could you or some of your readers give me a correct rule for calculating the strength of brick and stone arches of segmental, semicircular, and semi-elliptic form?

These arches are underground, at various depths, and the angle of inclination is known, also the pressure required to crush the material of which the arches are composed.

Your insertion of this in your next number will oblige, Yours &c.,

## MEETINGS OF TECHNICAL AND LEARNED SOCIETIES.

ARCHITECTURAL ASSOCIATION.—On Friday, April 16, at 7.30, Mr. T. H. Watson on 'Monumental Sculpture.'

INSTITUTION OF CIVIL ENGINEERS.—On Tuesday, April 13, at 8 P.M.

ASSOCIATED ARTS INSTITUTE.—On Saturday, April 17, at 8.15 P.M., Exhibition of Sketches.

SOCIETY OF ARTS.—On Wednesday, April 14, at 8 P.M., Mr. E. M. Underdown on 'Spain.' On Monday, April 12, at 8 P.M., John Anderson, Esq., on 'Applied Mechanics,' Cantor Lectures. On Wednesday, April 21, Mr. T. Roger Smith on 'The Duties of the Architect.'

ROYAL INSTITUTION.—On Tuesday, April 13, at 8 P.M., 'Stellar Astronomy,' by Prof. Grant. On Thursday, April 15, at 8 P.M., 'Light,' by Prof. Tyndall. On Friday, April 16, at 8 P.M., 'Cryptogamic Forests of the Coal Period,' by W. Carruthers, Esq. On Saturday, April 17, at 8 P.M., 'Origin of Land Surfaces,' by A. Geikie, Esq.

## The Architect.

### JOSIAH WEDGWOOD.



IN the entire range of English industrial biography, there is no name we would rather select as a representative or type of the English manufacturer than JOSIAH WEDGWOOD. There are other men who had to contend with greater difficulties, who from a lower state raised themselves to a higher position, and some who may have done the State more service than he did; but taking it all in all, there is probably no life in which more of the characteristics are to be found of that race of manufacturers which may be said to be the hands of mankind, and with whose labours the world is filled. If another De Foe were to arise, and write a Supplement to the *Complete English Tradesman* under the title of the *Complete English Manufacturer* (the great Daniel would have called it the *Complete Artist*), he could not find a more fitting illustration of the subject than Wedgwood. And this holds true, although we are obliged to admit, in spite of connoisseurs, virtuosi, and a great part of Staffordshire, that there was nothing very heroic in his character, and that the trade he followed was not so important as that of his friend Matthew Bolton the partner of Watt, or of his contemporary Richard Arkwright, or as Roberts's or Fairbairn's, or many others in our day. For in Wedgwood we have the example of a man who, after receiving the scanty education of a dame-school, joined a trade which retained much of its primitive rudeness; who taught himself whatever knowledge in any way belonged to it, and was thus able, not only to extend the applicability of his trade, but to do much towards raising it to the rank of a fine art; whose cheapest and most common work had such qualities as to be capable of being distinguished from that of other makers—while some of his work is thought to be so beautiful that now even fragments of it are considered precious; who was in many ways a good citizen, and who managed his business with such prudence that, notwithstanding experiments and studies and long illnesses, he was able to make it profitable.

The key to his character is, we think, found in one of the letters in Miss Meteyard's admirable *Life of Wedgwood*, in which he says that he hopes to make his work as profitable to the purse as it was delightful to the mind. The motive forces which influenced him were an intense love for his trade—or perhaps we ought to say his art—and a desire to be wealthy. Both these forces might be said to be always in operation; but looking at his life as a whole, neither obtained the ascendancy. He could smash a vase if he was not satisfied with the symmetry of its contour, although it was certain to find a purchaser, and would give up manufacturing any article, he said, rather than degrade it; but he could at the same time twist and turn old patterns rather than pay a few shillings to an artist for a fresh design. He was delighted to find his work the talk of the town, as the Russian service was, but was not desirous of orders of a similar kind where the profit he thought was not commensurate with the fame. He was always on the look-out for new applications of pottery, yet neither enthusiasm or desire to extend his trade ever induced him to carry on an unprofitable branch of manufacture, as the late Herbert Minton did with his encaustic tiles. Whatever may be the value of Wedgwood's life, or the lessons to be drawn from it, it must be owned there is little in it to call forth our sympathy, as, luckily for himself perhaps, he was not numbered amongst the brave men who have to struggle with misfortune, and upon whom, as the school-books tell us, even the gods look down with compassion. 'In the reproof of Chance lies the true proof of men,' but somehow everything was so well arranged about the works at Burslem and Etruria, that Chance had few opportunities of approaching the boundaries. Wedgwood was an inventor, but we have in his life none of those incidents which make the history of inventions as absorbing as a romance. He never was obliged, like Palissy, to make experiments by feeding the fire with his furniture, and never felt the awful depression that so often nearly overwhelmed James Watt; nor was he compelled to turn his wife out of doors for interfering with his models, like Arkwright.

From the day when, a young man, Wedgwood opened the Ivy House Works, his road to fortune seemed as straight as a

rule could make it. But if he was successful, it was not by chance, but by hard continuous work and prudence. External circumstances have often much to do with the prosperity or reverses of most men, but in Wedgwood's case everything he gained was plainly the consequence of a certain amount of exertion. It would not be easy to find anyone who answers more fully to the wise man's idea of a 'Workmaster that laboureth night and day.' Pottery seems to have been always in his mind. If he was travelling, he stopped at all the great houses along the road to examine the collections of china; in London his leisure moments were devoted to ransacking old book-shops for engravings to copy from; the most appropriate subject he could suggest for a painting was Belshazzar's Feast, because it would admit of the introduction of a number of vases; in his family picture he has one of his vases beside him—nay, shortly before his death, he had one of the latest made in his works brought to him to examine.

The variety of work manufactured by Wedgwood seems almost incredible when all things are taken into consideration. No private establishment, and we doubt if any state pottery, had at that time a catalogue approaching his in the number of its articles. In the catalogue for 1788 of the ornamental portion of Wedgwood's stock, there are cameos, intaglios, bas-reliefs, tableta; portraits of kings, or of illustrious persons of Asia, Egypt, Greece, Rome, France, and England; Roman-history medals; busts of illustrious Romans, emperors, empresses, kings, popes; busts and statuettes resembling bronze; antique vases, lamps, candelabra; painted Etruscan vases, besides such things as tea-services, flower-pots, &c. We have not enumerated the varieties of the foregoing; there are, for instance, more than a thousand different cameos, and Wedgwood did not exaggerate the beauty of some of them when he described them as being 'too good for common show.' If it is borne in mind that the materials of which these were composed might be said to have been discovered, if not invented, by Wedgwood, and that when he began as a potter the most experienced could hardly have credited the possibility of such things being made in such a style, some idea may be formed of the extent of Wedgwood's services, and why Staffordshire now honours his memory. It is remarkable how all his efforts were directed towards the one object of making pottery beautiful. He was a friend of Brindley, the great engineer, and took interest in everything he did, and his partner Bentley was a promoter of drainage works; but Wedgwood never seemed able to make his art available in their operations. In all that class of work with which Lambeth is associated, and which is so important to architects and engineers, Wedgwood would, we imagine, find little that was attractive. But, on the other hand, he was impelled by a kind of artistic instinct towards refining the materials of which pottery was made and adorning it. When he was merely an apprentice he began his improvement of materials. Knife-handles were then sometimes made in imitation of the more valuable minerals, and young Wedgwood, by a new process, was able to make them like porphyry. Some years afterwards, when he was a partner with Wheildon, he introduced a green glaze that was long famous, and which was applicable, not only to ordinary pottery, but to the fancy pottery of the time. It was, however, when he had established a business for himself that Wedgwood's greatest endeavours were made towards improving pottery. He first tried to improve the cream-coloured ware that was largely made in the district, and he set about it with a zeal that not even Palissy surpassed. Night and day he was in the workshops. He had to make experiments with various clays, to alter the methods of working and to endure many failures, before he succeeded in obtaining the proper ingredients. This was the cream-coloured ware that, after it had been for some time popular, was seen by the Queen, who ordered services of it, when it became known as 'Queen's-ware.' The next material he introduced was a terra cotta of a conglomerate character that was never thought much of; then the black unglazed 'basalts,' one of his best discoveries, which was used largely for vases, busts, and medallions, as it could be made hard enough to emit sparks when struck with a steel, and polished to any extent; then followed different coloured materials more or less resembling it; then a biscuit suited for chemical vessels; and lastly, the beautiful 'jasper,' of which the name can give no idea; his finest material, which, in addition to being as hard as the basalts, was capable of being thoroughly coloured in part, leaving the remainder white, by which it was applicable beyond any other porcelain or earthenware body for the manufacture of cameos or reliefs. He also discovered a jasper dip by which a coating was given to things formed of other materials. Wedgwood never attempted the manufacture of true porcelain. Some specimens



of clay were brought from China and placed in his hands for experiment, which he imagined were of a kind sufficient to make the porcelain without other materials, and desired that a search should be made in England for the clay, but he never appeared much interested in the matter, and allowed it to drop. It would be interesting if we could ascertain the steps taken by Wedgwood in endeavouring to obtain these materials. There is no art or manufacture in which so many improvements have been the result of accidental discovery as pottery. Were any of Wedgwood's obtained in the same way? He was always experimenting, but when he discovered—say the black basalt—was he in search of a material with certain definite properties like it, or merely after a better material than was in use, and in the course of his experiments hit upon the basalt? The 'jasper,' we know, was not so fine at first, but was many years improving. However much such information may be desired, it can never be obtained. The old potters were singularly secretive, adopting extraordinary precautions to conceal their operations, and Wedgwood, differing from them in so many things, was as close as any of them, measuring out materials in secret rooms, and keeping all memoranda referring to his processes in cypher.

It is for his efforts in making pottery an 'art manufacture,' that Wedgwood is probably most likely to be best remembered. Every improvement he made in the material seemed to him to demand a corresponding improvement in the form or embellishment of his work, although the latter was for long not so much under his control as the former. In his early years as a manufacturer it was the custom to send a great portion of the ware from Staffordshire to Liverpool to receive the pattern. This was done by what was then called Saddler's process, which consists in first taking an impression from a copper plate, on prepared paper, and then making use of the paper to print the pattern on the ware. As the printers supplied the designs, it is easy to understand how seldom they would alter them, and consequently how little variety would be found, and that one manufacturer's work resembled another's, at least as far as the patterns were concerned. The potters in general were indifferent to this: as long as some pattern was on their ware they were satisfied, but Wedgwood thought otherwise. He was at the expense of supplying patterns for his own work, but he soon found that the plates engraved from them were used for all indifferently, and he was obliged to keep up a continual supply of new patterns as the only way to secure a distinctive appearance for his ware. He took great pains in selecting patterns, and he used to have some difficulty in making the engravers merely copy them (they were generally engravings of a simple character), instead of attempting to 'improve' them. But when he was fortunate in discovering a material like the 'black basalt,' capable of being formed into vases of any form, he had the good taste to perceive that some other than this method of decoration with its Jemmy and Jessamy figures and absurd landscapes, would be alone appropriate. It is not easy to imagine the impediments that lay before him when, a hundred years back, Wedgwood endeavoured to introduce a better style of industrial art than had been previously adopted. He had command over materials that were at least of equal excellence with those used by the ancient potters, but no mixture of elays or improvement in lathes or ovens could supply the place of decorators. If Wedgwood wanted a history of pottery, with memoirs from authentic sources of Talos the son of Perdix, sister to Dædalus, Coræbus of Athens, Dibutades of Sicyon and other members of his craft, his friend Griffiths, who was for a time Goldsmith's lord and master, would have no difficulty in supplying him with 'eminent hands' for the purpose. But the case was different with designers. Those who had been trained in potteries were hardly suited for work which was to be unlike any that had previously been produced in England; and as the separation between industrial art and so-called fine art was probably broader than it is at present, there was little chance of his finding assistants amongst the young artists of the day, for one of them would hardly feel flattered by an offer of an engagement to become a pottery designer, who had been recommended by Reynolds to always aim at the *gusto grande*. Whatever may be the defects of Wedgwood's work, especially its poverty as regards original design, allowance must be made for the scarcity of designers that existed when he began what he called ornamental manufactures. It denotes no small courage that, under such circumstances, he should have thought of imitating the finest pottery of antiquity. He had a large amount of that talent for organisation which is usually one of the most prominent characteristics of our great manufacturers and contractors, and on this he would have relied, we imagine, to carry him through more difficult work, even if the available assistance had been less useful. He took some designers who had been employed by silversmiths, and some whose sole experience was in the namby-pamby ornament adopted in other potteries. Then he sought for patterns to imitate. Hamilton had published some engravings of his vases, copies of which were lent to Wedgwood; so was De Caylus' book, which became to him a mine of wealth; vases were borrowed, and he purchased every print, cast, or copy of a gem he met with and thought would be of any use. It is somewhat curious, but it indicates method in what he did, that for his best work he should lean towards sculptors rather than painters for assistance; he never seems to have taken much trouble to obtain drawings or sketches by painters (those he obtained from some aristocratic lady amateurs are hardly worth considering), but he was anxious to possess sculptors' work. In this way he was able to

make an extensive collection, but the misfortune resulted that he appeared to think that the realm of art was comprised in his portfolios and cabinets, or at least as much of it as was required for all his purposes. With the help of such patterns, Wedgwood's power of organisation was so great and his taste so fine that he was able to produce pottery that in every way surpassed all that was previously made in England. Some of his works were copies of ancient examples, and in such cases the only question is if they were accurately copied. And there is no doubt that whether it is a bust, a vase, or a gem, Wedgwood preserved, as far as it was possible, all the spirit and grace of the originals. His principal works are his vases, and in general they are not so much exact copies, as made up of 'bits' taken from different sources, varied by the introduction now and then of original design. In this lies the great defect of Wedgwood's work. There is marvellous manipulation, every part is finished with the utmost care, but there is in general a want of that unity and consistency which should characterise every work of art—a result that must follow whenever ornament is taken piecemeal instead of being worked out as a whole. We doubt if one of the vases was ever shadowed forth in any designer's imagination that Wedgwood paid wages to before it was turned into shape; this or that part might have been, but some other designer, ancient or modern, had part in it too. The extent to which this vamping has been carried may be seen even in a small collection. The ornament that is round the foot of one vase may be found round the neck of the adjoining one; in others it is merely reversed, again it will be combined with something else; a flower will be repeated with the addition of two leaves, or with merely a little ornament on a leaf; scrolls that in one place spring from something, will afterwards be found isolated; groups that surround one vase continuously will, on another, be broken up into detached figures, and so on. It is almost painful to see the extent of mechanical copying without any attempt being made at alteration. There is a little oval ornament on some of the vases over which wreaths pass—we should be afraid to mention the number of instances in which we have met with it, varying in size, but never having the slightest deviation in the shape or the number of the leaves that radiate on it. We have a curious illustration in one of his letters of the way in which Wedgwood used to get up ornament for his work. Flaxman modelled three of the Heavenly Muses at half a guinea a muse, not a very extravagant price when the subjects are considered. Some time afterwards he received an order for the remaining six. But one day Wedgwood was looking over his 'bas-relief goddesses,' in order to make new ones out of them, and it struck him that if he was able to create goddesses in this way, there ought to be no difficulty with muses. So he wrote in haste to his partner, announcing his discovery, and directing that the order to Flaxman be countermanded, as by his plan the models could be produced at half Flaxman's prices, by which means thirty shillings would be saved to the firm. Very thrifty, no doubt, and very tradesmanlike, but what value can ornament have that is manufactured in such a way? And the workmanship of all kinds of Wedgwood-ware is of such excellence that no artist that ever lived ought to feel any loss of dignity in co-operating with the potters. The extent of Wedgwood's supervision may be recognised in the care with which even the tiniest cameo for a button is made. Some of the ornament is so delicate, that it resembles more the work of the lace-maker than the potter. No engraving can give a sufficient notion of the delicacy—it may give the form and size, but it cannot alone impress upon anyone the extent to which a workman can make clay subject to him. The French have a saying that the English have two left hands: it must have little point for anyone who has seen some of Wedgwood's tablets and cameos. What a pity it is that, after all, so much of his best work should be nothing more than beautiful patchwork!

Better would it have been for English industrial art if we had the rough force and vitality of the early French and Italian pottery, where strength and nature make amends for art, than the cold correctness of Wedgwood's classical copies; better if we had the unity of design that is found in pottery made by some half-savage Indian than the elegant extracts which constitute the staple ornament of some of the vases that are most prized by connoisseurs. For wherever there is a principle, there is a possibility of growth, of art being extended and developed, of the relations between master and pupil, of traditions being handed down; but are any of these things compatible with the Wedgwood system of ornamentation? No improvement can be traced in his vases, because he could cut and clip as well in one year as in another. Take away the few things really designed by Flaxman and one or two other artists, and no difference can be discovered by which we can tell Hackwood's or Pingo's work from Mrs. Landres', or one designer's from another's. If everything was done by machinery, there could not be a more complete absence of that individuality which is one of the most essential elements of all true art manufacture. And of all branches of pottery, in none has there been so little improvement of late years as in Wedgwood ware, for the simple reason that while a pseudo-classical style of ornament is adopted, no improvement is possible. A copy from a plaster figure made in the eighteenth century may be as correct as one made in the nineteenth, and while we see the results of extended art education more plainly perhaps in some kinds of pottery than in any other kind of manufacture, a vase or a tablet of Wedgwood ware will have the same classical or childish subjects, neither better nor worse represented than they would have been in our

grandfathers' days. As long as antique subjects are held to be the most congenial decoration of the ware, it is never likely to be otherwise. It is seldom, we know, that a sculptor in any country is capable of the mental feat of giving us a statue or a relief that has any classical property except the title, but no ordinary designer receiving only ordinary wages could possibly project himself some dozen times every year into the past, so as to be able to tell heroic stories, or represent grave-gowned processions properly; the only thing he can do is to allow his imagination and invention to lie dormant and copy. There is no finer material in any trade available to the artist, and it is possible to make it the auxiliary to other branches of art manufacture; but as long as it seems heresy to introduce figures or ornament that have no precedent in the works of the man who discovered the material, as far as genuine art is concerned, it may be said to be lost. We would say, therefore, in conclusion, to all students in the Art classes of the Institute that bears Wedgwood's name, as well as to those who may employ them, remember that a pottery designer's room ought to be a studio rather than a repository; that Englishmen are capable of creating as well as of importing forms that are beautiful; and that, while they honour Wedgwood's memory, they ought not to forget that his and their art is capable of greater extension than even he imagined.

### NOTES FROM ABROAD.

(FROM A CORRESPONDENT.)

Florence, March 20, 1869.

DEAR MR. EDITOR,—As you have expressed a wish to receive such notes on architecture and its concomitant arts as I may make during my rambles on the continent, I proceed to carry out your desire, and do so with the more pleasure, as I know that amongst professional people, as in society generally, the last gossip is always welcome, and the latest impressions of our friends and acquaintances always listened to with pleasure. We at once feel our importance: we are Captain Grotes, who roam with criticising eye from one town to another; we feel disposed to say to the unwitting foreign public 'Beware! a chiel's amang' ye taking notes, and saith, he'll prent them.' I fear they would care little about that; and yet they deserve lecturing as well as any people, even on matters of art, though in their self-sufficiency they hardly think so. Even Paris might listen and learn; but 'twere vain to tell them what we believe to be decidedly true, that although the Emperor found Paris *quasi* brick, and will leave it *quasi* marble, yet the Renaissance of the Empire will never command the admiration of future generations of artists, and not even that of the educated during the present age. It is poor, inartistic, and pitifully monotonous; one is oppressed with the idea that Baron Haussmann, besides his other numerous and arduous duties, designed all the houses himself. This has always been to us a serious drawback to our profession, viz. that none but an educated architect can properly appreciate the works of the great masters, and that we address ourselves only to the initiated. The great public is utterly incapable of appreciating the delicacies and beauties of a refined style of architecture, such as that of Greece; and indeed for the matter of that, we question if there are a dozen living architects who feel its wonderful superiority in point of refinement to any architectural style ever produced. But to return to our 'moutons' at Paris, where 'moutons' are scarce, but 'loups' and 'reynards' abound. We must not leave the imperial city without one word about its last great ornamental work, the new Opera-house. Most of your readers, perhaps, will have seen it outside, and for those who have not I will just state that it is a large, fine, florid piece of work, toned down to look interesting, and coloured on the façade between the columns in a sickly style; and that, to my mind, it bears about the same relation to pure, healthy architecture as the *Dame aux Camelias* does to Sophia Western. Paris has, indeed, been Haussmannised; that is to say, as those lively people express it, you go to sleep in one street at night and wake up in another in the morning. But let us give the Baron his due; like a well-known autocrat in the south-west of London, he knows how to carry his point, so bears all opponents down; he has survived the last great combined attack of the Opposition, and has wound it up with a *bon mot* on the leader. 'Ce pauvre petit Thiers,' said the Baron, 'what a fuss he makes! yet he spent millions on the fortifications of Paris, which are of no use, whilst I at least build houses that people can live in.' But let us away from Paris with its painted architecture and painted people to the more decorous and dull precincts of Orleans, celebrated for its maid, its plums, and its great cathedral; if any of your readers desire to know more about Haussmann and his works, are they not written at length in the 'Paris Nouveau Illustré,' especially the No. 15, which can be got at any foreign bookseller's, and which contains an interesting *résumé* of all the Baron's doings, which I strongly recommend to your notice, and require you to thank me for not turning into a valuable article on the subject, as I believe is the fashion now-a-days with *littérateurs*? And now for Orleans. Big as the cathedral is, I am almost afraid that Bishop Dupanloup is the most interesting thing in it—when he is there; but it is large and imposing, with much carved work, and it seems like self-conceit to tell people, when they admire it—as you must, when they admire Milan also—that it is bad architecture. If they admire it, it *must* be good,

so your objection is regarded as mere professional pedantry. Yet it is a fact, that to appreciate and know what is good architecture is the result of education, entirely and wholly; there is no heaven-born sense in this matter, though there is greater capacity in some than in others to find it out. But if the cathedral is uninteresting, not so is the town itself, and there are some few late Gothic and Renaissance domestic buildings which are very picturesque and good; amongst which I would especially mention the *soi-disant* houses of Agnes Sorel and Diana of Poitiers—though that either of these notorieties of old had anything to do with them seems more than doubtful. The best building, however, is the old Town Hall, now used as the museum, the contents of which are very interesting; some of the Roman bronze antiquities found in the neighbourhood being, indeed, quite unique in their way.

The Museum at Orleans, full as it is of works of artistic and historic interest, puts us in mind how much has yet to be done both in England and France to render such collections as useful as they ought to be to the public. I would suggest that it is not enough to gather together such objects, and leave them to speak for themselves—the place being often supplied only with the briefest of catalogues, and often with no catalogue at all. These museums require, moreover, an extended scope; they should be industrial as well as artistic and archaeological, be furnished with full descriptive catalogues, sold at the lowest possible price, and should be open to the public every evening. Such museums in England may indeed be said to be absolutely useless to the local working public, for, at the only times they could possibly visit them, they are closed. South Kensington furnishes us with a good model on a grand scale; but I would rather see less centralization and more local institutions of the same class. From Orleans we proceeded to see the fine cathedral and stained glass of Bourges, and that splendid example of a mediæval citizen's dwelling, the house of Jaques Cœur. It is needless to dilate upon the charms and merits of the first-named; the complaint against all twelfth century glass is the same—it entirely darkens the place where it is used, though in itself wonderful for colour and effect. Of Jaques Cœur's house, so thoroughly characteristic of fifteenth century work, I cannot speak too highly as picturesque architecture. It could hardly be done now, yet there it seems quite appropriate that the owner and his wife should be sculptured leaning out of window on each side of the entrance way to welcome all comers. And it should be remembered that Jaques was not a mere merchant, but also Minister of Finance to Charles VII. Every part of the building is good, and the great round tower at the back, with stone newel staircase abutting on it, wonderfully picturesque. The architect has also cleverly introduced the *fleur de lys* in the tracery of the principal window; and the quatrefoils of the balustrade, as well as other parts of the building, contain a heart (cœur) and scallop shell, no doubt part of the owner's armorial bearings.

Our next halting-place was Nevers; where, besides the cathedral, which contains many striking points, especially a very beautifully sculptured south porch, I meet with a noble example of a grand seigneur's palace—that of the Dukes of Nevers, built in the fifteenth century. It is a really noble building, and has been very fairly restored. It is now used as the law courts, and contains also a museum, in which is arranged a very full and interesting series of the Nevers earthenware manufacture, commencing with the earliest imitations of Italian majolica. But I must hasten on past Lyons with its new streets and squares following in the wake of Paris; accompanying the windings of the arrowy Rhone—to my mind, a more picturesque river than the Rhine; past Avignon, with its frowning Acropolis of church, and pope's palace, and finely-macchicolated walls; past Arles, a city almost as Roman as Rome itself, to Marseilles, the old Phœnician Massilia, and which yet has nothing, not a trace of Phœnicia left in it, to mark the path of those ancient carriers of the ocean. But we have come some time since to the conviction that the Phœnicians were traders and nothing more. They made neither settlements nor colonies, probably only what we used to term 'factories,' at the ports where they traded. Neither in their own country, nor in Candia, Crete, Sicily, Carthage, or Marseilles, are any important traces to be found of Phœnician life; and as to England, where they undoubtedly traded for tin, probably also bringing with them most of the bronze weapons and ornaments which are dug up so often in early British graves, the only thing, after careful search, which we have been able to find, which tells of their presence, is a solitary small bronze bull, incised with the sun and moon, which I believe is to be found engraved in one of the volumes of the 'Archæologia,' and which probably belonged to some Eastern sailor, who may have worn it as a talisman. Marseilles is now, with its narrow crowded streets in the old town, its port full of the shipping of all nations, its rocky coast and islands, and forts, and noisy, many-coloured population, one of the most picturesque cities in Europe. True it is noisy and dirty, but we always leave it with regret. There is a fine new Exchange, and very fine and very dear hotels; and Notre Dame de la Garde, made spick and span new, on the hill, where all the storm-saved mariners hang up their votive offerings—and curious enough many of them are; and the old cathedral, pulled down to make way for a very pretentious semi-Romanesque new cathedral, which I doubt not is a fine work; but, to my mind, no French architect has yet been inspired with the true spirit of mediæval art: there is something petty about all they do; it is finicking, and wants that boldness and simplicity and sense of strength which is so eminently characteristic of the best works of

the men of old. From hence to Toulon, where there is a new theatre, very orthodox in style, i. e. Roman, but not effective. There is nothing to detain the architect here, after he has seen Pierre Puget's caryatides at the Town Hall, but they are not good, strained and exaggerated; there are better examples by him or of his school at Marseilles. One thing, however, we did particularly remark at Toulon, and that is the principal street or boulevard (is not that our *boulevard*?), which is laid out in three parts—a central avenue of brick squares intersected with stonework and lined with trees about 20 feet apart, and a road on each side of that, with pavement and shops: it makes a delightful walk, and dates from about the time of Louis XV., I should say. The rail now lands us at Monaco, one of the most picturesquely-situated castellated towns we have ever seen; but Nature here reigns supreme, though there is another monarch on the plain beneath, Mr. Le Blanc, who pays the worthy Prince of Monaco 8,000*l.* a year for permission to hold his gambling saturnalia at the Casino, on which, and on the grounds, we are told he has spent some 40,000*l.* This is a blot on the Prince's escutcheon he would do well to wipe speedily away. Monaco of ancient fame, even in the fabulous times of Hercules, is wretchedly degraded by this intrusion of mammon worship in its worst form.

Mentone and San Remo, with their palm trees and cactuses, are passed rapidly by; they have no architecture, and are perhaps the very dearest places on this beautiful coast; so we step into the diligence, and are kept in a constant state of delight at the splendid scenery of the Cornice road till we arrive at the first really Italian town of any note, Albenga. Now who, amongst your architectural readers, ever heard probably of Albenga? and yet, let us assure you, it well deserves a visit. It is a perfect picture on a small scale of a fortified town of the thirteenth or fourteenth century; a mixture of what Genoa and Bologna were in their earlier days. Only imagine! this town of some 5,000 inhabitants was of sufficient importance as a republic to be sought by Carthage in its palmy days as an ally! It must have retained its importance even to Mediæval times, for it was the ally also of Genoa up to the eighteenth century, when it was finally incorporated with that republic. Its streets are narrower even than those of Genoa, and its high brick towers, two of which bear the classic names of Malespina and of Guelph, are more numerous in proportion to its size than those of Bologna, probably like what Florence was before the jealous populace demanded the reduction of its seigniorial towers. Most of the streets can hardly be above 12 feet wide, and the houses are connected by arches which form ties throughout them, rendering them of great strength. The walls still remain with an inner way of similar arched buildings; nothing can be imagined more stern looking, dreary, and unhealthy. What a life must the citizens have led! What tales does it tell of party jealousy, insecurity, and isolated privacy! To appreciate the blessings of modern life you should visit Albenga. The cathedral of unknown age has been sadly modernised, but still in its façade remain some very curious early tokens of its architecture. The Baptistry is beyond conception old, and seems to be some 6 or 7 feet below the present level of the ground, which, according to the usual computation in such matters, would lead us to ascribe it to the fourth or fifth century of our era; it contains some most interesting early remains in mosaic and sculpture. The tower of the cathedral is a remarkably fine piece of brickwork, and is a good example of architecture in the eleventh or twelfth century. Albenga is still the *capo luogo* of the district, but its glory is fled, and the wild winds resounding through its deserted streets seem to speak of its present decay and of its future fall.

Wonderfully beautiful as the road, skirting the Mediterranean, is, from here to Savona, there is little or nothing to interest the architect. Nor does Savona itself present much for our notice beyond its houses, but the portals of these deserve particular attention. They are of the early Genoese style. The main body of the house is painted with various architectural and allegorical devices, and there is little architecture or sculpture except upon the doors; these are usually of black or dark coloured marble, of very good effect, with pilasters at each side, or the architrave carried round the opening. These are richly carved with arabesques, or, more properly speaking, with grotesques—a curious mixture of antique and modern subjects, ancient arms and armour combined with cannon and trophies of modern weapons. Above the angles of the door are usually to be seen two heads of the Cæsars, and in the centre, where there is no appropriate sculpture, a circle enclosing the cabalistic letters I. H. S. frequently occurs; the staircases are about five or six feet wide, with marble columns and balusters, and the doors are all plated with iron, thickly studded with large headed nails; the knockers being invariably somewhat oval, fixed upon ornamental plates. Religious subjects abound on the architraves, and the entire sculpture is always well, carefully, and yet boldly executed. The principal doors are to be found in the Via Guardia Superiore, and in the Via degli Orefici (Goldsmiths' Street), where a few of the craft still are to be found, but which is now mainly dedicated to the sale of poultry and fruit—'To such base uses may we come at last.' Like Toulon, Savona boasts of a new theatre, the two most notable features of which are—that amongst ornaments on the façade are a statue of Chiabrera, one of Italy's greatest lyric poets; a native of Savona, and a clock, from which it seems that some importance is attached to time punctuality in the theatrical amusements of the place. From Savona the rail once more takes us comfortably on to Genoa; and as we may now be fairly said to be on Italian ground, where architecture holds a prominent place,

we propose to commence our next series of notes, which we trust will be rather of a more strictly architectural character, from this most ancient busy and noisy city, the metropolis of Liguria.

W.

### PICTURES SENT IN TO THE ROYAL ACADEMY.

IN a recent number we laid before our readers a short statement of the principal pictures intended for the forthcoming Exhibition of the Royal Academy, and we now add some further particulars respecting other works which have been sent in. The public will be gratified by learning that the department of Landscape will be well represented. The veteran Creswick heads the list with four contributions. Mr. Vicat Cole, whose works have lately attracted so much attention, will exhibit two pictures generally considered the best he has yet painted. Mr. Peter Graham, whose very clever picture of a 'Spate in the Highlands' first brought him into notice at the Royal Academy, has this year sent two very admirable pictures, decidedly finer than anything he has yet attempted; and Messrs. Leader, Moore, and other popular favourites will be well represented. In addition to the above, one or two leading French landscape painters have sent contributions which will give us an opportunity of comparing the respective aims and achievements of the two schools. Sir Edwin Landseer, we are happy to learn, will after all be represented, and that by a picture which, if we may trust the report of the privileged few who have been permitted to see it, equals, if not transcends, anything which he has yet done. It represents a combat between eagles and swans on the bosom of some inland lake. Several foreign artists have forwarded pictures to the Exhibition this year. Middle Rosa Bonheur sends two; Edouard Frère two; and the same number have been sent by that rising Belgian artist, M. Alma Tadema; one, a party of Roman patricians witnessing a species of war dance of gladiators previous to the combats of the arena; the other, a classical *virtuoso* displaying to his admiring friends some choice specimen of metallic sculpture. So that we may repeat our statement that the forthcoming show will certainly equal in interest, if not surpass, any previous Exhibition that we can remember.

### DRAWINGS SENT IN TO THE FORTHCOMING ARCHITECTURAL EXHIBITION.

THE Annual Exhibition of the Architectural Exhibition Society will open to the public at 9, Conduit Street—the Architectural Galleries—the first week in May. We understand that in addition to the usual amount of drawings sent in, will be exhibited an interesting collection of water-colour drawings by the late Rev. J. and Petit, made by him during various tours in England, Scotland, Ireland, France, Italy, Spain, and the Holy Land, &c.—numbering some 300 in all. Amongst other contributors are, Mr. Blomfield, who sends a drawing of his Basilica church at Oxford; Mr. Seddon, who, amongst other drawings and sketches, will exhibit two drawings of the large parish church of St. Nicholas at Yarmouth, now in course of restoration under his superintendence; Messrs. Godwin and Crisp, who send their last design for the new Assize Courts at Bristol, and a view of Glenbegh Towers, Killarney.

Mr. Lamb will be represented by a drawing of a Memorial Church in Clerkenwell, and Mr. Ewan Christian by a view of a house at Combe End, and a new church at Folkestone, lately erected by him. Messrs. Blackmore and Withers, Johnson, J. W. Fowler, &c., will contribute various competitive designs for churches; and Messrs. Fowler, G. C. Clarke, Walford and Evill, Chamberlain, &c., sketches and drawings of mansions and villas lately erected. Mr. Phipps will exhibit a drawing of the decoration for the new Gaiety Theatre, together with Mr. Marks's cartoons for the lunette and proscenium frieze for the same building; and Mr. Robert W. Edis a small study for new premises in Oxford Street, proposed to be built principally in terra cotta. Mr. Robson sends the Municipal Buildings in Liverpool, and Messrs. Adams, Corson, Kempson, and others will send drawings and photographs of various works lately erected in the provinces; and Mr. Emerson forwards from Bombay drawings of various works in progress, &c. Beyond these there will be a good collection of sketches of ancient work by Messrs. T. H. Watson, R. Phéné Spiers, A. Darbyshire, J. Foster, &c., so that we may fairly hope to see an average collection of drawings, although we are sorry not to hear of more drawings from the senior members of the profession.

### LONDON AND PARIS.

[SECOND ARTICLE.]

THE Parks of London are, perhaps, the next features of prominence which call for notice. In these we certainly possess a great advantage over our neighbours, for the Champs Elysées, which in summer soon becomes a dusty desert, is the only great open space running into the centre of the city which at all corresponds with the chain of parks extending from Kensington to Charing Cross. But, on the other hand, the eastern part of Paris is far more open than is the east of London; and there is not that perceptible difference between east and west that there is with us—the east for the poor, and the west for the rich.

The Square du Temple and the little gardens on the Boulevard Richard Lenoir are as well kept as the gardens in the Champs Elysées; and the Parc Monceaux and the Buttes Chaumont are certainly quite unrivalled.



The Place du Châtelet, again, is charming. There is a prevailing taste amongst our French neighbours, making the most of an opportunity, which puts us utterly to shame; and yet London is not deficient in opportunities of a similar nature. The dismal yard on the north side of Westminster Abbey might be planted with trees, as has been done behind Notre Dame, adding immensely to the effect and apparent size of the building. There are several squares and open places which might be turned to account, and laid out for the benefit of the people, instead of being reserved for cats and broken bottles. No doubt the residents at the West End would object to have their squares interfered with, as they are, in fact, private gardens supported by the surrounding inhabitants, and the Parks being so near, the people have no need of other open places; but eastward the case is quite different. If we take Finsbury Circus for a centre, there is not a park or open playground within two miles in any direction, and yet this part of London teems with poor children, to whom the open space and the sight of flowers and a pleasant garden, such as that in Park Lane, would be a wonderful boon; tending also to civilise and refine the poor, and bringing decency and order into their midst, where now there is nothing but squalor and filth.

The inhabitants of such places as Red Lion Square, Charter House Square, Finsbury Square and Circus, could not, we should suppose, object to the care of their very shabby squares being taken off their hands by Government and turned into such pleasant places as we see in Paris. And if a few persons did object, the People should gain the day. Lincoln's Inn Fields is another open space, nearly useless, and yet what a charming little park it might be made! There are, too, the dismal grass plots before the British Museum. Compare these wretched and forlorn-looking places with the cheerful and well-laid out gardens round the Louvre, where happy children play to their hearts' content, without in the least disturbing the visitors to the Museums.

It appears to us that this subject is one which may well be recommended to the new Liberal Government.

In comparing London and Paris, we must not pass over the two chief places of the respective capitals, Trafalgar Square and the Place de la Concorde, although the subject is so worn to death that we almost feel it absurd to mention it.

The Place de la Concorde is certainly very fine, but extremely flat, and wants definition; neither the Tuileries Gardens nor the Champs Elysées form any decided boundary. The Corps Législatif is a low and tame-looking building, and the side towards the Madeleine is the only architecturally commanding view to be obtained, by no means equal to the view from Trafalgar Square down to the Palace of Westminster. And if we stand in the centre and take the view up or down the grand avenue, the Place itself is lost in the Champs Elysées or the gardens of the Tuileries.

The site of Trafalgar Square being on so decided a slope is much superior. A very little would make this dismal desert of asphalt into certainly one of the noblest squares in Europe.

As we have been before speaking of the natural grouping of buildings which still remains to us in London, but has been almost destroyed in Paris, we will merely name a few views, which in our opinion are very fine, and are to be equalled by our neighbours.

There is the view of St. Paul's as we approach it either from Fleet Street or Holborn; the Victoria Tower from Waterloo Place; the Abbey from the front of Marlborough House; and several others nearly as fine.

The transition from groups of buildings and public places to streets and houses is easy, but the two subjects are so intimately connected and intermingled that it is somewhat difficult to keep them at all distinct. And there are in London, as yet, but few new streets to put in comparison with the ever-increasing number in Paris; while there are many collateral circumstances, such as restrictions imposed by the legislature and various exigencies of locality and custom, which must of necessity exercise considerable influence on the laying-out of a street, and the designing of the houses in it, and with all of these it is hardly possible we can be acquainted.

Uniformity is, as the lawyers express it, of the essence of a French street, wherever it may be built—Paris, Rouen, Marseilles, or Algiers, all display the same rows of balconies, renaissance, rococo, or semi-Greek details and identity of general design, without much consideration of climate or other local influences.

If we take any new street in Paris—it really matters very little in what quarter of the town—we shall find it to be a repetition of its neighbours. The houses are almost alike, with the exception, as we have before said, of a little variety in detail, or a balcony more or less.

Unquestionably, as a *coup d'œil*, there is a grandeur in the lofty houses and regular lines which is at first impressive, but the more we look the less we find to look at. There is nothing to induce us to go down the street to admire this or that building; having arrived at the end, we look back, and see precisely the same vista as before, and, on looking to the right or left, we see interminable avenues, all resembling the one we have passed through. If we start from the Hospital of Lariboisière and walk down the Boulevards Magenta and Prince Eugène to the Place du Trône, we shall pass between more than three miles of houses almost identical in general design from end to end—the monotony could hardly be exceeded.

The Rue Lafayette is nearly as bad.

The Rue de Rivoli is certainly far superior, because it is not all new. It owes little enough, as we have before said, to the new buildings at its western extremity. It is impossible that a city such as Venice or Nuremberg could have been formed on such a model.

M. César Daly ('Architecture privée au XIX<sup>e</sup> siècle') gives the following reasons for this uniformity:—Whilst the "hôtel privé" demands a character of individuality, showing that it is a special construction, intended to form a lasting residence for its inhabitants, the "maison à loyer," destined for every one—that is to say, for a multitude of inhabitants, changing from day to day, as the necessities of work, position, or fortune demand, inhabited from basement to attic by tenants of classes socially different, strangers one to another—does not admit of any marked originality of treatment. Neither the exterior, nor the internal arrangements, can

show character; but must correspond as well as possible with the tastes and necessities of the great mass of the population.

There is, no doubt, a great deal of truth in M. Daly's remarks, but we may place ourselves in much the same position. The new streets, or rather the streets of new houses, in the City of London are built to fulfil nearly the same requirements as are those of Paris. They are composed of buildings, used, almost without exception, as shops on the ground floor, and offices above, let to various tenants. They have each been built by some large firm for its own use, or partly to let; and this must be the case with many of the French houses, which cannot all be constructed merely as speculations. During the wholesale demolitions perpetually going on in Paris, numbers of large firms must have been dislodged, and compelled to build for themselves fresh quarters, and yet the prevailing type of domestic architecture is always maintained. We need scarcely point to the different appearance between a Paris and a City street; the one all monotony, the other all variety. It may be argued that an office and dwelling-house are not the same, but (unless we restrict our comparison exclusively to private residences) for all external purposes of design they are. They are all houses. We are subjected to building regulations as are our neighbours, but do not seem to find it necessary to carry a cornice for half a mile or more in an unbroken line, nor to make every building a repetition of its neighbour. In fact, none of our main thoroughfares can be accused of monotony. Victoria Street, at its western extremity, is most open to this accusation, and a sad failure it is. Anything more depressing than the row of huge smoke-grimed barracks cannot be imagined, and unfortunately the new houses on the north side of the street repeat the roofless sky-line of their opposite neighbours.

If we take any of the new streets in the City, the buildings with which it is lined are, as it were, the embodiment of the great banks, insurance offices, or large firms which occupy them, as, for example, Throgmorton Street, Lombard Street, or Cannon Street, or if we go westward we find large shops, clubs, or mansions, still bearing more or less of individual character about them.

Some of the buildings are, no doubt, very remarkable specimens of architecture, to which it would be impossible to point with any degree of satisfaction, but in most cases they fulfil their purpose, and show that they do so. The French have certainly a 'style.' We have not. Strand Music Halls, slices of Greek temples, all styles and no style at all, succeed each other in endless variety, and new and startling developments of the Victorian seem growing in Southwark Street with alarming rapidity: indeed this street would appear to be the trial-ground for the New Style we so often hear about.

In comparing our ordinary streets—those lined with houses in the 'vernacular' style—with those of Paris, the French have unquestionably the advantage over our stucco terraces, although very many of their houses owe quite as much to the fine material of which they are built as they do to the goodness of the design, and much is due to their always honestly showing their roofs. The eye is satisfied with the sky-line of the building, although in most cases nothing more than a very commonplace mansard, with scarcely any design about it; but nevertheless it is a good honest roof, and pleasant to see. We shall probably before very long have a good opportunity of comparing a roofed and roofless building in Parliament Street—the Duke of Buccleuch's on the one hand, with its lofty and prominent chimneys, roofs, and dormers, and the New Home Office, which will be no doubt like the Foreign Office, a great roofless box, with miserable little chimneys fearing to show themselves, possibly because they are not classical; but on that score the tower should certainly be suppressed—it would be hard indeed to say what style that belonged to. We should have hoped that so great and able a champion of the Gothic revival as is the architect of this building would not have adopted the expedient of hiding the roof, even to please Lord Palmerston. Why not have a good cornice and low roof, as in the purest Italian style, in which useless parapets are not found necessary?

We may, however, point with great pleasure to the new buildings on the Marquis of Westminster's estates, very preferable, as we think, to much of the street architecture of Paris. The roofs and chimneys are in many cases very striking, and there is a reasonable diversity between the various blocks of buildings, without any straining after effects of variety, although they must certainly be accused of imitating the effect of large public buildings instead of blocks of houses.

One of the most remarkable features of the newest houses in the chief quarter of Paris is, that they are decidedly worse in design than those built some time ago. Many of the older houses are excellent specimens of street architecture; but the perpetual call for new streets has evidently exhausted the architects, and they have at last come back to the old cut and dried arrangement of an order running through two stories and a little bit of entablature squeezed in between the windows, the cornice serving for the inevitable continuous balcony, which seems a *sine quâ non* in all French houses. There are numbers of new houses treated thus to be found round the New Opera, on the Place St.-Michel, and at various other points.

But, as a set off to all this, what a grand solidity there is in almost all the French buildings, whether public or private, compared to anything we find at home! Stucco is unknown. Stone, brick, and iron construction are the rule. Not only the floors of most of the new houses are of fire-proof construction, but in many cases the steeper portions of the mansard roofs are also formed with iron rafters filled in with concrete. The vast sub-structures of the New Opera House, and the new buildings of the Tuileries and Louvre, are quite unparalleled in any of our public works. One has but to walk through the sculpture galleries of the Louvre, more particularly the new entrance from the Place Napoléon III. and the new staircase, all grained in stone and built with the most magnificent solidity, to feel the extremely flimsy construction of such a building as the South Kensington Museum; not even the British Museum can at all compare with it. Nevertheless it is impossible in many respects to defend the new buildings of the Louvre erected by the present Emperor. Everything has been sacrificed to uniformity, so that the north and south sides of the Place Napoléon III. may exactly correspond. Although it has been always intended that one portion should be used as a picture gallery, and the other for various pur-

poses, still windows have been made only to be stopped up, and a pretence that the building is two or three storeys high all round, when in fact the north side has nearly all its grand windows divided horizontally by floors across the middle, and the south side has no floors at all. A grand *coup d'œil* is not so difficult to attain when such architectural questions as these are entirely ignored. It is not true architecture; indeed, it is very probable that a more magnificent or gigantic sham does not exist in Europe than this great pile. The whole side of the building towards the Rue Rivoli, new and old, is all a sham of the same sort. And again, anything more ridiculous than the Mairie in the Place du Louvre, with a portico to match St.-Germain-l'Auxerrois (a sham St.-Germain), can scarcely be imagined. We have the consolation that our wretched stucco shams will soon fall down, from their poverty of construction, but it will take centuries to overthrow such buildings as we have mentioned.

When, however, we come to look into matters of detail, we find our neighbours far ahead of us. We have before remarked that they take advantage of every opportunity for some little display of taste, planting here and there a few trees, or placing a little fountain and plot of grass at a vacant corner. Even their arrangement of a shop-window shows an innate love of beauty and elegance, which amongst the mass of our population is absolutely wanting.

The thing may be ever so elegant, and the British public actually do not seem aware that it is beautiful at all. A hideous or an elegant lamp-post is a lamp-post, and there it ends, otherwise how could the Signal Lamp-post at the bottom of Parliament Street be tolerated for a moment? A worse thing was never seen, and yet it seems to have passed almost unchallenged. The shape of the lamp and utter vulgarity of the capital which supports it are perfectly monstrous; the shaft can only be compared to a huge screw-jack that has wound its way up from the sewers. The pedestal suggests the Gothic (?) of sixty years ago. Nearly all the other lamps in London—indeed, we may pretty safely say in England—are as bad, and yet the Paris lamps are very ornamental, and also give a far better light than ours.

If we turn to larger things, we find a refinement and delicacy in the architectural mouldings, and a grace and beauty in the carving, which we seek for almost in vain in this country.

Whether in stone, wood, or ironwork, in ordinary houses or in the richer quarters, although there are many things not very pure in style, there is not that lamentable vulgarity which we so perpetually see on this side of the Channel. We may attribute this partly to the fine climate which the French enjoy, permitting delicate detail to be well seen, which with us would be almost obliterated; but this does not excuse vulgarity. The truth is that men run in herds much like sheep; even the man who thinks himself most original is influenced far more than he may be willing to imagine by his predecessors and surroundings, and those who do not aim at originality are of course influenced to a much greater extent. A French artist and workman sees daily refinement of detail about him, and naturally moves in the same groove; an Englishman sees, alas! very different things.

The English iron-founder who sees the lamp in Parliament Street, and the French one who sees those in the Place du Palais Royal, must have very different ideas as to what he should imitate. And to refer to larger things, how different is the detail of the iron columns in almost any French railway station from the miserable things at the Victoria or London Bridge Stations, or indeed almost anywhere else in England?

What must a Yorkshireman's idea of an iron column be when such things are provided for him to look at as those in the Winter Garden at the Leeds Exhibition, where art might have been expected?

Or, to turn to stone-work, what clumsy detail, ill-shaped balusters, and coarse heavy pediments we find in the Junior Carlton Clubhouse, numbers of the City banks, and other buildings, which we shall not see in Paris!

If we turn our attention to the shops, what a difference there is between the internal fittings of those in Paris and those which we consider even our best! The French display a vast amount of fertility of invention in the decorations of the ceilings, show-cases, and walls—indeed, we may truly say that there is more taste visible in an average French shop than in an English drawing-room. It is quite a treat to walk through the Boulevard des Italiens or the Rue de la Paix when the shops are lit up, in order to examine the ingenuity with which such small apartments, as many of them are, are so tastefully arranged and richly and variously decorated.

And these decorations are, of course, not produced by artists of note, but by ordinary house decorators, and any little novelty is thoroughly appreciated by their public.

As a specimen of English ingenuity, we were lately struck by a wonderful effort at shop-decoration, in the 'Gothic taste,' just finished in the Buckingham Palace Road, near the Victoria Station—one of the newest developments, indeed, let us hope, the last in this style. It is to glorify a grocer's shop that this effort has been made. There is a Gothic window all over little nobs and bosses, and within is a sort of bookcase, with flaming pillars and adornments, holding rows of tea-canisters, which are all painted vermilion, with an enormous chevron on each canister in gold or some light colour. The effect at night must be seen to be appreciated. The chandeliers, too, are 'Gothic,' with little twists and brass balls stuck on in every part but the right one. The artist (?) of the Parliament Street lamp-post must surely have been here. We feel very little hesitation in saying that such an exhibition is not to be found in Paris.

The little kiosks, again, for selling newspapers, are many of them very ornamental; and so are the pretty little sheds on the Champs-Élysées for the omnibus passengers, very different to the ugly things on the landing stages for the new Embankment. Compare the elegant preparations made by a Frenchman for a public fête with the clumsy attempt of an Englishman. However, we might go on comparing for ever. Let us hope for improvement.

**Proposed New Police Station at Wath.**—It is proposed that the sum of 500*l.* be granted out of the police rates for erecting a police station at Wath, for the division of Halikeld (Yorkshire), on a site to be given to the Biding by the Marquis of Ailesbury.

## IMPROVED DWELLINGS FOR THE INDUSTRIAL CLASSES.

BY THOMAS CHATFIELD CLARKE.

*Read at the Ordinary General Meeting of the Institution of Surveyors, April 6, 1869.*

Mr. JOHN CLUTTON, President, in the Chair.

(Concluded from page 193.)

The munificent and repeated gifts of Mr. PEABODY next claim some notice: indeed, such an amount as the total of 350,000*l.* put in trust for this object must impress every one as an unexampled instance of a generous and high-minded man seeking in what way his great wealth can be devoted for the permanent good of the community of which he is not even a country-man.

In reviewing the action of the trustees hitherto, it is difficult to go into much detail as to the results, inasmuch as the accounts presented annually to the public are so meagre in character, no revenue account being published, and no analysis being given of the interests obtained on distinct blocks of building. It is much to be wished that the trustees would consider the advisability of furnishing more detailed accounts, as great interest is felt in the matter, and it might serve to remove from the public mind by explanations false results, possibly otherwise arrived at.

As to the scale and substantial character of the buildings, there cannot be a question, that their large and airy secluded playgrounds, laundries, and other conveniences, all must add very much to the comfort and convenience of the dwellers therein; but, judging by the recent letter of the secretary to the trust, it is a source of regret that it has been hitherto impossible to realise a larger rate of interest than 2½ per cent.—'a sum,' as he justly says, 'much too small to induce those actuated even partially by a view to investment, to follow the same example.'

The capital hitherto expended has been about 150,000*l.* with a total population of 1,971 persons, the rents demanded being at the rate of 2*s.* 6*d.* for one room, 4*s.* for two rooms, and 5*s.* for three rooms. The health statistics show a mortality of about 15 to 16 per 1,000.

The average wages of the working-men in these buildings are stated to be about 21*s.* per week, and occupants are as carefully selected as possible to avoid a class who could pay higher rents.

The buildings erected by the Corporation of London in Farringdon Road next claim notice, as a large and spirited undertaking, which sets a good example to like corporations.

These buildings are on the model (with some modifications) of those erected by The 'Improved Industrial Dwellings Company,' with the addition of shops on the ground-floor.

The outlay on this property has been about 54,000*l.*, showing, on the average of three years, a clear nett receipt of rather over 4 per cent., beyond which there is a portion of the site not yet utilised.

The population in these buildings amounts to 872 persons in 168 tenements, and the average number of deaths is at the rate of 22 per 1,000, showing only a difference of 1 per 1,000 over the whole of the metropolis; but, as compared with a small property not far off, this shows a very favourable result; there the death-rate is 31 per thousand.

The Society for Improving the Condition of the Labouring Classes claims to rank with The Metropolitan Association as setting up models for imitation, and as having led this movement. This Society, at the present moment, is not extending its operations, and does not consider itself committed to any continued series of erections. Its properties are various in character, several being occupied by single men and women, and it has also a public washhouse, which occasions the Society considerable expense and loss; it has also adapted existing houses with every needful comfort, which yield, the Report states, a fair average balance.

It is almost to be regretted, I think, that the mode of conducting the operations of this Society does not seem to provide a clear balance to accumulate for the extension of their operations, or a sinking-fund to redeem the leaseholds, as is the case with other societies, and the expenses seem large; but this Society is working with a large amount of borrowed capital, obtained as to a considerable proportion at 5 per cent.; several of the blocks of buildings show in the accounts a considerable surplus of from 4 to 5 per cent., after deducting the charges upon same.

The capital account, not including a freehold property at Hull, shows an expenditure of about 37,000*l.*, an entire population of from 1,600 to 1,700 persons, and a death-rate of 15.5 per thousand.

Miss COURTS, whose name is so universally respected for her long and generous interest in the welfare of the poor in the metropolis, has also aided this movement by the erection, in Columbia Square, Shoreditch, of a large pile of buildings, giving every facility for healthy living, and on a scale superior to others as to external decoration.

The outlay upon this undertaking has been in land and building about 45,000*l.*, the gross rents amount to about 1,840*l.* per annum, and the deductions upon the same to about one-third, yielding, therefore, according to Mr. Darbshire's Report, about 2½ per cent. per annum.

There are 189 tenements, let, I am informed, at very moderate rents, which Miss COURTS will not permit to be raised, and commencing at 2*s.* per week. The number of inhabitants is about 716. These buildings have the advantage of laundries, drying-rooms, baths, and other conveniences, and are much valued in the poor neighbourhood in which they are placed.

Mr. GRIBBS has also erected a large pile of buildings, on the scale of those erected for the trustees of the Peabody Fund, in Rochester Row, Westminster, and it is a gratifying fact, that after a large outlay in buying up the leases of old properties, so good a result comparatively should be derived; but here, also, taxation presses heavily on the success of the scheme in a financial point of view, the taxes, rates, gas, superintendence, and repairs amounting to about  $\frac{1}{10}$  of the gross rental derivable.

These buildings consist of 166 tenements, housing about 650 persons, at rents varying from 2*s.* 3*d.* for a single room to 5*s.* for a 3-roomed tenement.

The total outlay has been about 32,000*l.*, and a nett dividend derived of something over 3 per cent.; the death rate averaging for two years: 9 in 1,000.

Sir SYDNEY WATERLOW, with great boldness, before initiating the company with which his name is connected, experimented in this matter in the erection of a block of buildings called 'Langbourne Buildings,' at a cost of nearly 8,000*l.*, containing 78 tenements, with about 390 inmates, and these (partly on account of the less cost of building when they were erected) yield, after deducting all expenses, and providing for repairs, a nett result of over 9 per cent.; and these figures are obtained after a trial of five years.

The Right Honourable RUSSELL GURNEY, M.P., has also made a most interesting experiment in his own neighbourhood, which has a special value that not only does it locate the poor near to their work, but combines the element of retaining poor families in the neighbourhood adjacent to their richer brethren, in whom they may justly take a special interest.

The outlay was 2,500*l.*, giving accommodation for ten sets of dwellings, and from fifty to sixty persons; the rentals being 7*s.* 6*d.* for three rooms with conveniences attached, and yielding a full 5 per cent. on the outlay.

These buildings are constructed on the same design, and with similar material to those carried out by the Improved Industrial Dwellings Company.

Before closing this Paper there are other associations for this object in the metropolis which it is right to refer to: among others, the Marylebone Association for Improving the Dwellings of the Industrial Classes, and the Highgate Dwellings Improvement Company. With respect to the former, I am hardly able to present many particulars, but with a capital of about 27,000*l.*, spread over six properties, doubtless a considerable work is being effected. The dividend on the ordinary shares last declared was at the rate of 4 per cent., and 4½ per cent. on the preferential stock of the company.

With respect to the Highgate Dwellings Improvement Company, built also on similar plans to the Improved Industrial Dwellings Company, it provides on a total capital of about 6,000*l.*, though the expenditure of the same is not fully defined, for ninety-six rooms, and the company have been enabled to pay a dividend of 5 per cent. on rentals varying from 2*s.* to 2*s.* 3*d.* per room per week, and for two and three rooms in a somewhat less proportion.

In giving this sketch, I ought not to omit some other kindred societies and persons who have worked out schemes of the kind, and amongst others the Strand Buildings Company, the Central London Dwellings Improvement Company, the London Labourers' Dwelling Society, the Rev. Mr. Burgess, Mr. G. Barker, Mr. J. H. Harlowe, the Rev. Thos. Ainsworth, Mr. John Newson, and Mr. Hillard may be mentioned; nor ought the labours of the late Prince Consort in this direction to be omitted, as tending probably more than any other person, by his high position and his pure and disinterested motives, to have infused energy and excited inquiry in many minds that might otherwise have been directed into other channels. Of the results of some of the above operations, it may be briefly noted that the Strand Buildings Company, on an expenditure of 5,000*l.*, pays 4½ per cent.; the Central London Dwellings Improvement Company pays 3 per cent. on a capital expended of about 10,000*l.* The London Labourers' Dwelling Society pays 5 per cent. on about 30,000*l.*, spent chiefly in renovating old buildings; and that of the Private Owners, Mr. Hillard receives from 6 to 7 per cent. on an outlay of about 14,000*l.*, and Mr. Newson is reported to have received a nett 5½ per cent. on an outlay of 13,000*l.*, or thereabouts.

I am aware in this Paper I omit altogether any notice of cottage dwellings, both suburban and agricultural; but I should like to mention the Metropolitan Association have an interesting experiment in suburban dwellings at Penge. I trust some other Member of the Institution may be found willing and more able than myself to deal with this question. It is by no means second in interest and importance to the subject considered in this Paper; it also abounds with similar problems as to the difficulty of providing adequate accommodation for the humblest classes, at fairly remunerative rates.

With respect to the general results obtained from this Paper, I trust they may be looked at as on the whole encouraging. With a total sum expended in the metropolis of about 650,000*l.*,\* housing approximately from 15,000 to 16,000 persons at moderate rents, giving an average return of 4½ per cent. on fifteen ascertained returns, with a death rate, in a great proportion of reported cases, much below the average rate of mortality in the metropolis, and considerably below the rate in the poorer districts taken singly, and with a rate of interest derivable not varying much from that receivable for freehold property elsewhere, I trust we may look to the future with hope.

In our varied relations as professional men, we may do much to help this work; and though of course we do and must acknowledge that no material and social progress can supply the place of higher influences, we can and do, I hope, recognise that the one should go hand in hand with the other, and I trust, as a body, we may ever be found taking a deep interest in such questions.

A discussion ensued, in which Sir Sidney H. Waterlow, Messrs. H. A. Hunt, F. Vigers, C. Gatliffe, H. A. Darbishire, J. B. Denton, and others took part.

The meeting then adjourned till Monday, April 19, when a paper will be read by Mr. W. Menzies, on the 'Sanitary Treatment of the Refuse of Towns, and the Utilization of Sewage.'

[NOTE.—The author of this Paper desires to express his warm thanks to those who have furnished him with statistical information.]

\* Not taking into account the 300,000*l.* further given by Mr. Peabody, not yet expended.

The Operative Stonemasons in the employment of the principal masters in Manchester struck work on the 10th inst. They refuse to be paid by the hour, and they claim a reduction of time from 54½ to 48½ hours per week.

## SETTING OUR SOLDIERS TO WORK.

AS will be seen from our Parliamentary Report, the question of the employment of our soldiery on civil and military works has been mooted in the House, and the War Secretary has gone so far as to express a hope that this subject may receive the favourable consideration of the Commander-in-Chief. We trust we shall not be accused of being unpatriotic or protectionist, or averse to progress, when we avow that we do not share in Mr. Cardwell's wish.

The soldier is entirely free from all the risks and uncertainties of the life of the civilian. Everything is provided for him at the country's expense. He is paid by those who desire to live in peace and safety to fight for them, and to hold himself in constant readiness to do this whenever called upon. For the sake of being able to command his entire services the other members of the community tax themselves heavily. They provide him with necessaries while on active service, and they provide for him—what too many of them are unable to secure for themselves—a provision for old age when active service is over. This being the position of the soldier in this country, it is easy to see that an injustice of a serious kind would be committed were his services as an artisan brought into competition with those of tax-payers who have no daily pay, no quarters, no clothing, and no pension, beyond what they can provide for themselves by the sweat of their brow.

There is, no doubt, another aspect of the question. If the expense of a standing army can be in any way *lightened*, as it might be, by the judicious development of the militia system, so that men in England may be, as they are in Prussia, at once soldiers and engaged in civil life—liable to perform some military duty, and paid in respect of that duty only—well and good. Such soldiers need not cease to be operatives in their own trades; but it is not now a question of any such arrangement as this. The proposal now mooted would not diminish our taxation or lighten our financial burdens, but it would introduce the labour of men who could afford to work for a shilling a day, in competition with the work of men who cannot afford to work for less than five or six—the very men who pay taxes in order that their competitors may be free to do something else. Professional men have sometimes had occasion to feel keenly when Government has placed secular works in the hands of Engineer officers drawing pay, in lieu of Civil Architects living by their work; and now it is proposed to carry the same system further.

There is another objection to the proposal on a ground which the most enthusiastic reformer cannot fail to appreciate. It would lead to no economy in the works in hand. The labour of soldiers working under military regulations, however well organised and however cheaply paid, though it might drive out of the field that of artisans under a foreman, would be a very inefficient substitute, and progress would be slower, consumption of material more wasteful, and superintendence more costly to such an extent as precludes the idea that solid advantage could be reaped by the public.

The true mode of utilising the labour of our soldiery lies, in all probability—and will lie for long to come—in the employment of their spare time in constructing earthworks for the protection of our vulnerable places, and in training them to use the spade in trenching themselves when in active service. There can be little doubt that pits and mounds will, for the future, replace all masonry fortifications, and that the army which can use the spade most adroitly stands an excellent chance of having the best of it in any future campaign.

## REVIEWS.

### GREEK ART BEFORE PERICLES.\*

M. BEULÉ, with admirable reticence, has condensed into one modest octavo materials and arguments which a less conscientious writer would have distended over interminable volumes. M. Beulé is an enthusiast, but he is also an earnest and patient student; he writes fluently, but thinks deeply; and if he indulge in an occasional crotchet, who can blame him? He has claim to a hearing, by virtue of services rendered to art and archaeology, and by right of official position; he possesses, moreover, the merit of meeting difference of opinion with courteous liberality. To give a thorough criticism of the work now before us, would require more space than lies at our command: we may only endeavour to indicate, as succinctly as possible with justice, what are the contents of the book, in the hope that our readers will seek further for themselves.

M. Beulé begins, as in duty bound, at the beginning, and refers us to the Oriental parentage of Greek art, to elements and applications in the architecture of Egypt and of Asia which, later, were resolved into the Doric and Ionic orders. The living power of Greek genius clothed the dry bones of Eastern art with beauty, and infused into dead forms the spirit of life, and thus emerged into light and developed into perfection that wondrous creation which we call 'Greek Art.' To the Greek belongs the glory of having invented European art. The epoch from which our author dates the distinct spring of Greek art, properly so called, is the sixth century before Christ, during the period of Pisistratus, and prior to the era of Pericles. Greece had then calmed down into comparative tranquillity; borders became defined, and everywhere a young society felt its way upward to freer, nobler life. The Tyrants occupied their conquered subjects, and signalised their rule, by the erection of grand monuments; rival peoples strove for mastery in the arts of peace.

First of birth among the arts is architecture; with the first order in Greek architecture M. Beulé commences his treatise. He finds the Doric temples, in mass and in detail, own their parentage to imitation of constructions in wood. Wherever were trees, he argues, there men first built of wood; wherever the Hellenes migrated or dwelt they found forests, therefore of wood they first constructed their habitations and temples. The Etruscans—a branch of the Greek race—built the entablature and

\* L'Histoire de l'Art grec avant Pericles. Par M. Beulé, Secrétaire perpétuel de l'Académie des Beaux-Arts. Didier et Cie., Paris.



summit of their temples of wood, even in the time of Augustus. Pausanias bears witness to the existence of a wooden column near the temple of Jupiter on Olympus; Greek colonists at Metapontum showed a temple of Juno with columns of twisted vine stems. Again, Pausanias speaks of a wooden temple dedicated to Neptune at Mantinea. Moreover, fires were of frequent occurrence in early Greek temples, indicating their construction of combustible material. M. Beulé brings in the Lycian tombs to aid his argument, combating, by the way, Sir Charles Fellowes' theory of their Ionic origin, and finally sums up satisfactorily:—'It is not Art itself which has presided over the construction of these tombs so much as a principle—the principle of Doric art, that is, imitation of wood.'

Well put is the definition of the principle of beauty in Greek architecture; 'Its essence, its inherent genius, is proportion.' Thus, 'the temple is a being which lives, capable of development or diminution.' Again, 'the temple then was a being subject to the laws which govern human nature; on finding one only of its parts, we may divine what were the dimensions, the style, the proportions, of its other parts.' We may add that the author proves himself a very Owen among archaeologists, with rival power of inductive reconstruction! 'The ancients exalted form before all things, we elevate thought, and thus,' says M. Beulé, 'is the spirit of modern and of ancient art opposed. We seek ever something new, they turned their eyes backward, and held faithfully to great traditions, seeking to develop, not change. Thanks to this fidelity to tradition, we can trace the progress of Greek art in the monuments left to us; and especially of the Doric order, the constitutive type of all orders, can it be said, that it relates its own history with a sequence which will astonish no one.' On inference from the scale of proportion, then, M. Beulé conducts his investigations, assigns dates, and christens styles, aided by the corroborating witness of form, more especially form of the capital, 'the most characteristic and noteworthy amongst the forms of Doric temples.' In sequence to certain interesting observations on the absence of local influence on Greek art, time rather than place is assigned as our guide throughout the monuments which in detail our author describes.

We have not space to follow M. Beulé in his separate dissertations on the Doric temples of Corinth, Delphi, and Syracuse; the ruins at Selinus; the temple of Jupiter at Agrigentum; the temples of Paestum, Metapontum, Crotona, Assus, Samos, Siphos, Træzen, Sparta; the monuments of Pisistratides, and the temple of Ægina. The author's general plan we may indicate in few words. First, he gives an historical sketch, drawn from tradition and written testimony, supplemented, in a manner more or less satisfactory, by his own lively imagination; secondly, he is at pains to discover to what divinity the temple under review was dedicated, and is unhappy until this point is settled to his liking. Then he proceeds to business, furnishes dimensions, proportions, details of construction, with patient, discriminating exactness, and in a clear and manly style unfolds his inferences. Finally, with a transition always happily turned, often eloquent, he bids adieu to the present, and turns to the next subject. '*Le roi est mort. Vive le roi!*' Additional zest is given to M. Beulé's descriptions and evidence by the fact that he speaks from personal inspection of the ruins, with the exception only of the temples of Paestum and Metapontum, which are described on authority of the Duc de Luynes.

A short chapter is devoted to the Ionic order, which M. Beulé unhesitatingly places as successive to the Doric, not contemporary. Perhaps his decision may be helped by the fact that he enters lovingly into the theory which finds in the Doric and Ionic orders symbols of the two sexes: he may remember that woman came second in creation! 'In our time of eclecticism, runs the argument, we enjoy all styles because we are indifferent to all; but with a people primitive, creative, earnest, these styles succeed each other. As society grew more cultivated, luxurious, feminine in delicacy of sentiment, architecture followed the general impulse, and 'the Ionic order arose to satisfy the new needs of society.' So scanty are Ionic monuments prior to the fifth century, that our author cannot find matter for more than twenty pages, at close of which he turns to a subject on which he has put forth all his strength, viz. the Polychrome of the Greeks.

It must be confessed that M. Beulé has handled this vexed topic with a master hand; rich in material and vigorous in style, the chapter devoted to Polychrome is perhaps the best portion of the whole book. The writer states frankly the views of the partisans of absolute polychrome, partial polychrome, and no colour at all. He himself inclines to believe that the three systems, whether as applied to architecture or sculpture, were successive. The polychrome of the archaic period he finds in harmony with the spirit of the architecture—austere, melancholy, solemn—and he holds the style adopted to have been, in the general, the emphasis by colour of the lines of construction. Though an enthusiast for polychrome, M. Beulé sifts evidence soberly; he deprecates the violence done to truth by those fanatic partisans who, gathering material for argument regardless of the laws of time and place, heap all together into the balance, and point triumphantly as the counter-weight kicks the beam. It is not until the end of his chapter that he allows his feelings vent. Then, after a brilliant picture of the Greek temple, glorious in all the splendour of colour and material, he bids degenerate moderns cease to scoff at their masters, and learn rather to imitate methods miscalled barbaric. 'If,' he cries, 'one day we recover the taste for painted buildings, we shall not deserve the name of barbarians; rather shall we have regained an inheritance we had renounced, a beauty which we had lost.'

Another fruitful subject for learned discussion and disagreement has been the mode of lighting their temples followed by the Greeks. M. Beulé adopts somewhat of a compromise. It is true he puts aside that hypothesis of Mr. Ferguson, which presupposes a number of small windows in the roof, because it involves 'complications unsuited to Greek genius;' but he admits the occasional existence of the hypæthron, also of the roof wholly closed. His favour is reserved, however, for the theory of an opening or interruption in the roof, through which might fall 'the beautiful perpendicular light that we seek for our grand buildings and museums,' and which might be covered, as occasion required, by drapery, or even by glass, set in movable framework. For M. Beulé's ingenious application of historical evidence to this theory, we must refer our readers to the book itself.

We have not space to enter fully into the second portion of the volume, which is devoted to Sculpture. It is careful, yet seems to imply less thorough knowledge than marks the first division. The gradual rise of sculpture into a distinct art, the circumstances which fostered its development, its mythical origin with Dædalus, aptly named the St. Luke of ancient art—all this and much more M. Beulé writes pleasantly. He traces with care the history of the primitive masters of Samos and Chios, of the Cretan masters of Sicyon, and gives sketches—rapid, yet detailed—of the Doric schools of Corinth, Sicyon, Argos, and Sparta, allotting a separate chapter to the works of Canachus of Sicyon, and to Ageladas of Argos, whose glory it was to have formed the stars of the age of Pericles—Myron, Polycletes, and Phidias. The ancient school of Attica M. Beulé finds representative of the ideal as opposed to the realistic in treatment, and characterised by a certain Oriental immobility. The school of Ægina, on the contrary, may be considered realistic as opposed to idealistic, and, *par excellence*, the school of anatomy in Greek sculpture. Very enthusiastic does our author become over the Ægean marbles now at Munich; in these he finds a simple grandeur, an heroic truth, a grace that comes of strength, a type 'truly sculptural'—in fine, qualities 'solid, precise, geometric,' beside which even 'the ideal beauty of the works of Phidias seems to grow uncertain and enervated.' That the Ægean school was essentially Doric, M. Beulé maintains, and considers that the distinctive title of 'Ægean style' arose simply from the fact that Ægina, as rival city to Ionic Athens, was chosen by the Dorians to be their representative.

With this argument M. Beulé somewhat abruptly closes his treatise. Though the work is not exhaustive, and though it seems, here and there, to ignore the result of recent labours in the same field, it is undoubtedly full of valuable information and brilliant suggestion. At a future time, perhaps, the author may supplement any omissions, and, we hope, may devote some space to the light which is thrown by discoveries in fictile art, in coins and gems, upon the history of Greek art, even 'before Pericles.' A. D. A.

## ILLUSTRATIONS.

### THE WEDGWOOD MEMORIAL INSTITUTE.

THIS building is announced to be opened on the 21st inst. by the Earl de Grey and Ripon, the Lord President of the Council. The foundation-stone was laid by the present Premier, and there could have been no greater honour bestowed on the memory of Josiah Wedgwood, than was paid by Mr. Gladstone, when he read, on that occasion, an elaborate *written* address on the character and career of the great potter, which was subsequently published.\*

The building is erected in Wedgwood's native town, and is intended to serve the purposes of a Free Library and Reading Room on the ground floor, while the upper floors are designed for a School of Art and Science. It is so disposed, as to plan, that it can be extended hereafter, if local necessities require it, for the educational uses of the town and neighbourhood. For the present the accommodation is presumed to be sufficiently ample.

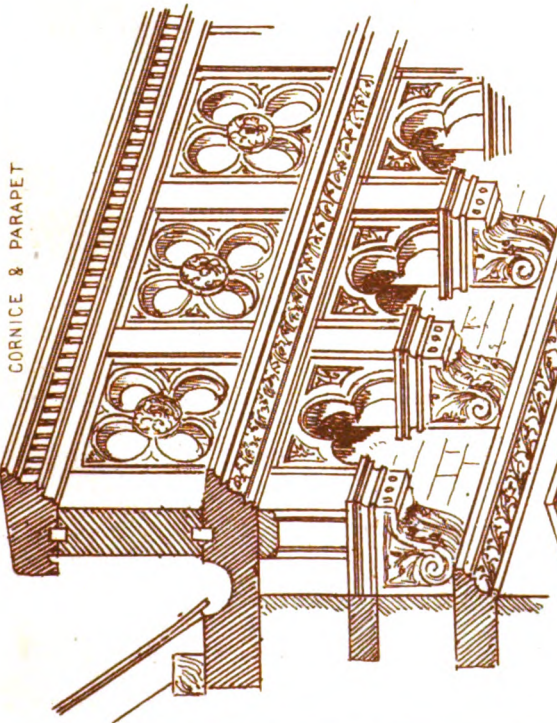
The first floor, for the purposes of a school of art, comprises a museum or exhibition room, elementary class rooms, ladies' class room, and painting room. A modelling room and a master's room are also provided; a chemical class room is placed on a second floor. All these apartments are top-lighted; the roof is carried on cast iron girders, semicircular on the soffite, and the building generally is fire-proof in its construction. The ground floors are carried on brick arches, and the first and second floors are formed in Dennett's patent concrete, carried, in the larger spaces, on rolled iron girders.

The architectural treatment of the building will no doubt carry some interest with most readers from the fact that it is composed almost entirely of the clay material, from its simplest masses of brick-work up to the more elaborate detail which composes the external design.

The idea of erecting a building of a purely ceramic character, as the memorial of Wedgwood—the father of the English potteries—was first initiated by Mr. Beresford-Hope, M.P. I have striven to realise that conception as worthily and completely as the present resources of architectural pottery will admit of. But it must be said here that any attempt in that direction would have been of a very partial and limited character, if the authorities at South Kensington had not come forward to subsidise the scheme of ceramic treatment by employing and paying the modelling work which was necessary to embody the design in the clay material. Under this arrangement two 'national scholars'—Mr. Rowland Morris and Mr. Robert Wright—were selected from the Potteries Schools of Art, and the whole of the terra-cotta details requiring modelled treatment have passed through their hands, the different varieties of ornamental detail having been executed by them from the architect's designs. The more sculptural and figure subjects were entrusted to Mr. Morris. There is unusual variety observable in the designs of the ornament; the bands which are introduced midway in the piers of the ground floor windows are very varied, and bear the monograms of the different names of persons who have been concerned in the erection of the building. The impost course and the archivolt of these windows are also designed on various *motifs*, though it is only possible to produce, by way of illustration, on the sheet of details given herewith, one or two of the varieties which the building exhibits as it stands.

\* By Murray of Albemarle Street.





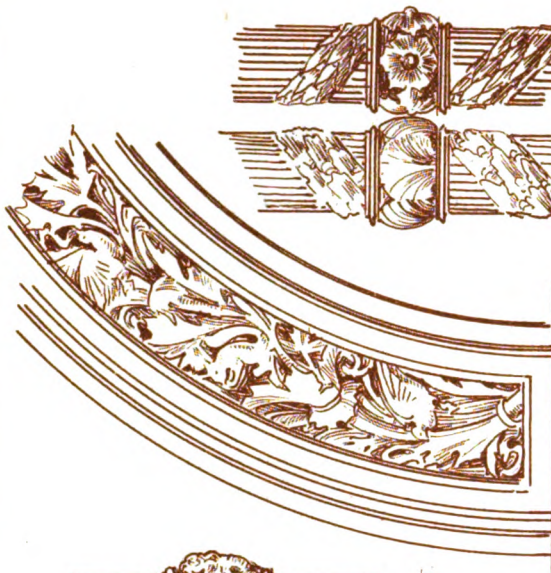
CORNICE & PARAPET



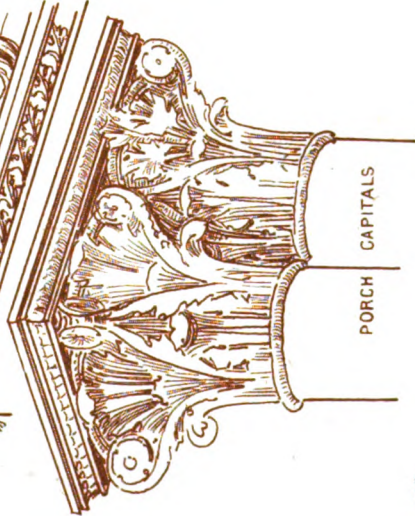
MONTH PANEL



PORCH SHAFT



FIRST FLOOR SHAFTS



PORCH CAPITALS



"PROCESS" PANEL THROWING.



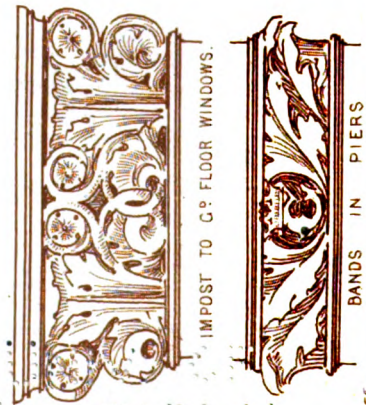
IN TYMPANUM IN 6<sup>o</sup> FLOOR WINDOWS.



WEDGWOOD ARMS



A L A X N F W



IMPOST TO 6<sup>o</sup> FLOOR WINDOWS.



BANDS IN PIERS



BANDS IN PIERS



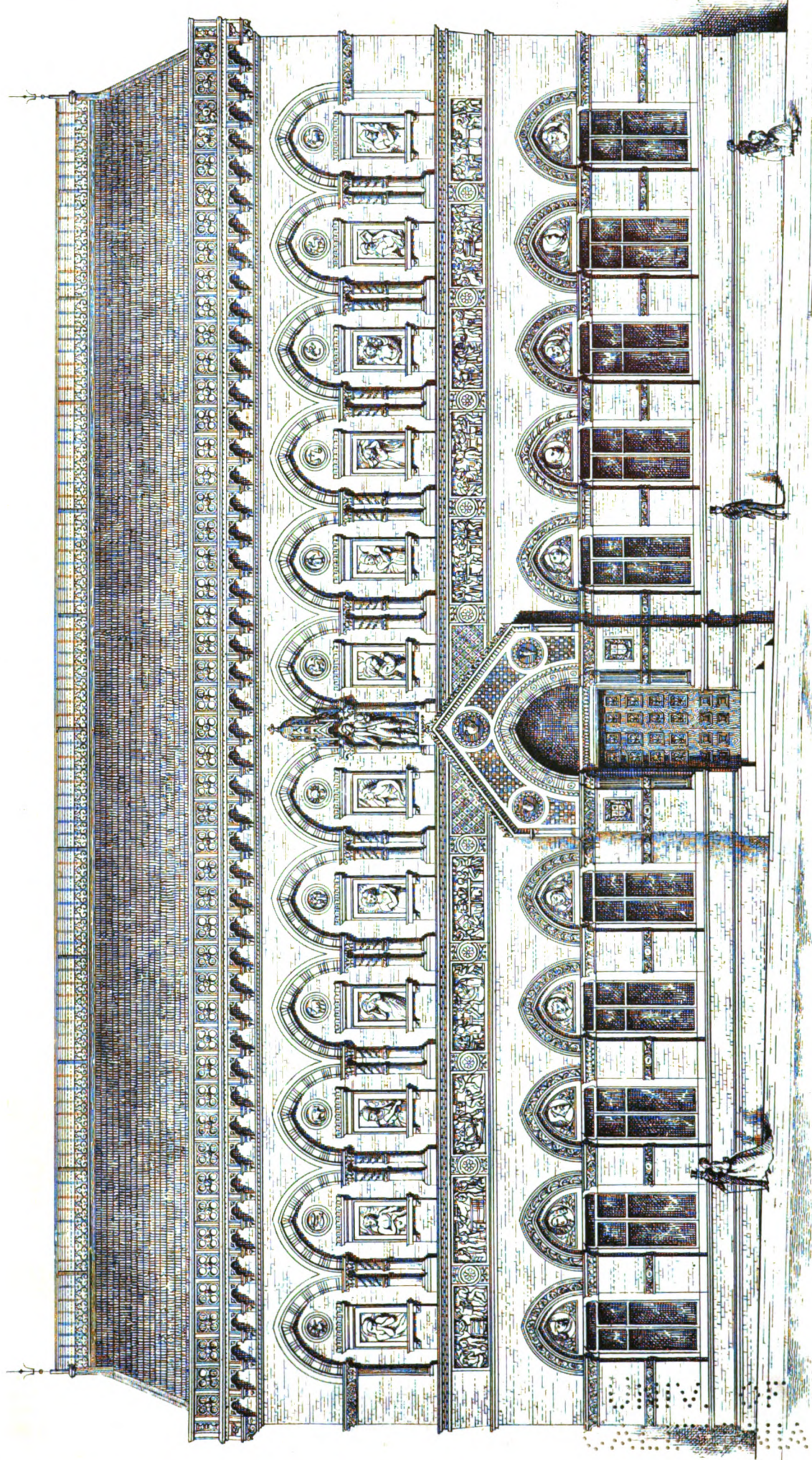
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ABSTRACT



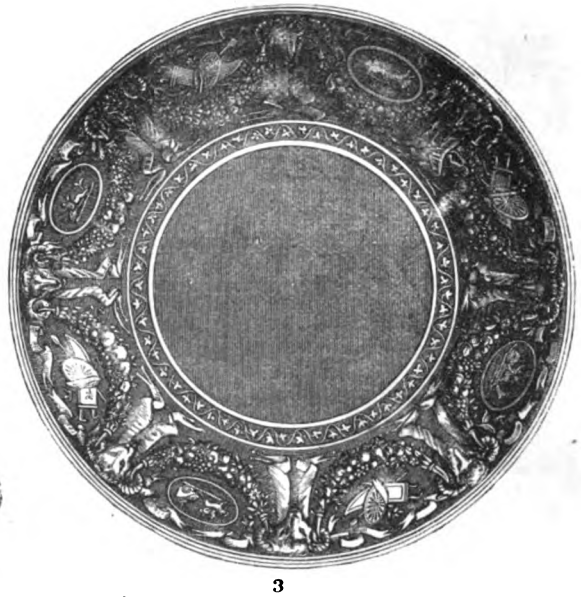


THE WEDGWOOD MEMORIAL INSTITUTE, BURSLEM.  
FRONT ELEVATION.  
ROBERT EDGAR, ARCHITECT.



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SPECIMENS OF WEDGWOOD WORK



REPRODUCED BY PERMISSION OF MISS METEYARD AND MESSRS. HURST AND BLACKETT.





Between the ground and first floor a deep band or frieze runs the entire length of the building, composed of panels corresponding to the bays given by the windows; these represent the different processes of the modern manufacture of pottery, from its first stages in the raw material to those of its finished productions. It is to be noted in regard to this frieze that, in common with all the sculptural portions of the design, the work, as placed in the building, is that of the modeller himself, and is, in this respect, an original terra-cotta work, similar to the treatment we are familiar with in the sixteenth century Italian art in the same material. It deserves also to be noted that the whole of the terra-cotta work, whether it appears as sculpture or foliated ornament, is purely and essentially constructive as part of the building. None of it is veneering, but the work it performs is as necessary to the stability of the structure as that of the bricks which compose the walls.

A reference to the elevation of the building will discover a difficulty in the way of the architect which most professional readers will readily appreciate. The whole of the exterior, above the ground-floor windows, is a blank, dead wall, the first-floor being lighted from the roof. Whether this difficulty has been successfully grappled with or not is, of course, a matter of fair criticism. The first floor is treated as an arcade, formed by coupled columns in dark buff terra-cotta, and the successive bays are occupied by sculptured representations of the months of the year, modelled in red terra-cotta clay and framed in the same material, with an architectural design which recalls the treatment, in similar conditions, of the North Italian sculptors. Over these panels, and occupying the tympani of the arcade, are inserted representations of the Signs of the Zodiac, corresponding to the month panels; these are executed in Venetian mosaic on a gold ground, by Salviati.

The greater portion of the terra-cotta detail of the building has been most faithfully produced by Messrs. Blanchard & Co., while the sculptural frieze of 'process panels' has been manufactured by Mr. Blashfield, of Stamford, to whose credit it may be stated that these pieces, weighing many hundredweights each, have been fired and fixed in their places without flaw or accident.

The general contractor for the works was Mr. Alfred Barlow, of Stoke-upon-Trent. Mr. Mathews, of Manchester, acted as Clerk of the Works, during the erection of the building.

ROBERT EDGAR.

EXAMPLES OF WEDGWOOD WARE

WE are indebted to the courtesy of Miss Metgard and Messrs. Hurst & Blackett for the opportunity of reproducing illustrations of a few characteristic specimens of Wedgwood's work.

The sheet of illustrations of Wedgwood's work includes the following:—

- 1.—Gold Bronze Pitcher-shaped Vase. Bohn Collection.
- 2.—Bust of Wedgwood, by Fontana. Presented to the Wedgwood Memorial Institute by Joseph Meyer, F.S.A., Liverpool.
- 3 & 7.—Cup and Saucer, in Blue and White Jasper. From Bohn Collection. Blue ground and white ornaments.
- 4.—Barberini, or Portland Vase.
- 5.—Vase. Blue and White Jasper. Meyer Collection. Showing Apollo and the Nine Muses, wreaths, and musical instruments.
- 6.—Group. From the Portland Vase.



THE EVANGELICAL BEASTS.

To the Editor of THE ARCHITECT.

SIR,—In his very interesting article upon this subject in your last number, Mr. Burges points out what were the symbolical beasts mentioned in the Old and New Testament, how certain animals mentioned in the Prophecies are supposed to represent certain kingdoms, and how, from the second century at least, the Christian Church has represented the Evangelists by the angel, eagle, lion, and ox, without, however, explaining *why* the Evangelists were so represented. A bit of monkish Latin, copied many years ago into the title-page of my Greek Testament, answers this question, and with your permission I here transcribe it:—

HOC MATTHEUS agens hominum generaliter implet;  
 MARCUS ut alta fremit vox per deserta leonis;  
 Jura sacerdotis LUCAS tenet ora jurenci;  
 More volans aquile celeris petit astra JOANNES.

If these lines are old, they were probably not known to the author of those quoted by Mr. Burges from Didron (*Quatuor hęc Dominum, &c.*). The latter seem to have been written by a monk who, finding upon the cover or title-page of a New Testament pictures of the Evangelical beasts, tried to account for them, in rather a lame way, as symbolising the acts of our Lord. In so doing he (very naturally) mistook a medięval angel for a *homo*, and an ox for a *vitulus*.

ALFRED STRONG.

VOLUNTARY ARCHITECTURAL EXAMINATIONS.

SIR,—An extract, that I have lately seen, taken from the Report of the sub-committee formed for the management of these intended examinations

and presented to the Royal Institute of British Architects on the subject, has re-opened an old wound that time and silence had nearly healed.

Will you kindly relieve me of part of my griefs by allowing me to whisper them into your sympathetic ear? To state my case in the shortest form, I am one of those deluded victims who passed the Voluntary Examinations during the first stage of the movement. You may, perhaps, from this, guess the burden of my complaint.

About the year 1861 the walls of the Institute rang with the eloquent and enthusiastic speeches of its leading members on the benefits that would accrue to the profession, and especially to the individuals who should prove successful in passing through the ordeal, by the young architects flocking to these examinations. Visions of the practice of architecture being placed under the protective restrictions that surround the Church, Medicine, and the Law, to prevent quacks from entering those professions, were presented to us in vivid colours. The funeral oration of that amphibious creature the architect-builder or ambitious joiner, the vampires of our profession, was delivered with feeling; and those who should dare to trespass on the hallowed domains of architecture, without the licence of the Institute in their pockets, were threatened with punishments little short of penal servitude for life. In fine the Architectural Cummings prophesied a professional millennium.

Our mentors echoed these sentiments, and urged us on to valiant deeds. No wonder that some of the most enthusiastic amongst us succumbed to these bright allurements. Fired with a holy zeal for the welfare of the profession, many of us burned the midnight gas with a vengeance, and coached up subjects, some of which I had scarcely more than heard of before. The printed 'Regulations, &c.' reached me, and have been of little or no service to me since.

At the first examinations that were held, the attendance was very fair; and many came, as the list of the successful shows, from Bristol, Belfast, Manchester, and other distant places, to break a lance in honour of architecture; of the whole number about a third only returned as victors.

Three days were spent in the rooms of the Institute, working hard against time, and then succeeded an awful fortnight of suspense (it seemed to be double that length of time), when sleep was scarcely possible on account of mental anxiety as to the result of the examination, which I then ignorantly thought would influence for good or evil my whole future career.

After waiting some time for the expected reward of my labours, and not receiving any, I, for one, wrote to ask what tangible acknowledgment of my success the Institute proposed to give me, and received in reply a letter stating that, after mature consideration, the Institute had decided not to give any regular certificate, as an improper use might be made of such documents; but that the fact of having passed, and being on the books of the Institute, was thought to be a sufficient return for our labours. What a set of scamps they must take us to be! It has been found safe to entrust all the other learned professions with degrees and diplomas, but we are to be numbered amongst the dangerous classes.

It is only petty jealousy of the 'young blood' and red tapeism, which is as rampant amongst the old fogies of the Institute as in the War Office itself, that could have submitted us to such an insult. With the exception, therefore, of being graciously allowed to pay the examination fees and heavy travelling expenses, I have as yet received no return for the hard work and hard cash expended on the venture, unless, indeed, I include the mental anxiety before described and the satirical inquiries of friends as to what good has come from my exertions.

The result of this short-sighted policy on the part of the Institute was soon apparent, as the number of candidates for these *barres* honours soon dwindled, and, according to the Report above referred to, has this year expired. In this emergency the Committee begin to look the matter fairly in the face, and propose holding out such inducements as would, if adopted at the beginning, have saved the Institute the ignominy of failure, and this important movement the consequent damaging effects.

From the experience that I have had in the matter, and from frequent conversations with professionals and others on the subject, I have reason to think that it would not be too much to ask of the Institute that they should not only give each candidate, when he passes either class of the examinations, a certificate, engrossed perhaps on vellum, to that effect; but that they should also constitute him, *ipso facto*, an associate of their body, at reduced entrance fee and yearly subscription; and, in case he should think fit to present himself as a candidate for the district surveyorship appointments, credit him with proficiency in those subjects that were included in the architectural curriculum.

I venture to say that had the above course been pursued from the first, the present committee, instead of complaining of the total absence of applications, would have to state that the accommodation at their command was insufficient for the crowd of candidates. Government and the public would by this time be prepared to place architecture on the same footing as the other professions that I have named, and in the position that it at present holds in many places on the Continent.

The discussions held by the 'Association' showed distinctly the prevailing opinion of the juniors on the subject, and these with the letters received from the successful candidates at the request of the examiners will prevent the Institute from pleading ignorance of what was really required from them.

It is not to be expected that young men who have long office hours to keep will voluntarily impose upon themselves the additional labour of preparing for such a trial, especially when they run the risk and disgrace of failure, when they will receive no prize or acknowledgment, even if they be so fortunate as to pass.

It may not yet be too late to retrieve the errors of the past, and the timely concession just announced on the part of the Institute may do much, even now, to recall the interest in the subject that it had at one time aroused. As my Father Confessor I thank you for your patient hearing, and will not impose on you the seal of confession, as I am anxious to hear what other unfortunates have to say on this great question.

Yours obediently,

A VICTIM.

## CHURCH RESTORATION.

SIR,—I venture to appeal to you and to your readers for advice in the following case; and may I add that I shall be rejoiced if my letter calls forth any material assistance also?—but that by the way.

Braunton, North Devon, is an agricultural village, of large population, and of great antiquity. To the church I would direct attention. Restoration has not yet reached it, as this seems to stop short at the estimates. The funds required are beyond the powers of the district.

The church consists of nave, with north transept, and tower, with spire opposite, and three projecting porches. The chancel and chantry beside it are similar in most respects, and form a twin projection eastward.

The internal width of the nave is 34 feet, and the roof, which was once open to the ridge, is now coved, in large plaster compartments divided by drab-coloured oak beams, at the intersection of which are some very fine bosses.

The seats are of carved oak, of great solidity, antiquity, and boldness of workmanship. They are divided into four compartments by the passages in the nave, which run west and east, and north and south also. There should be a passage by each of the walls, but west of the north and south doors; this has been blocked by very ugly and trumpery deal pews, also painted the favourite drab. A similar enormity has been perpetrated in the passage east of the south-eastern group of seats.

In these instances some carving has been cut away, to admit these modern fixtures, or for the comfort of the seat-holders.

I have mentioned these matters to show that restoration is needed, and that Braunton Church is a deserving object for the attention of all who can feel grateful that any such fine old woodwork still exists *in situ*. Although the Restoration fund is languishing, money is to be spent, I hear, upon a condemned gallery at the east end of the nave, which tops the beautiful chancel screen, but is in no way to be confounded with a rood 'lof, for it runs the whole width of the church, blocking up most of the chancel arch. The seats in it are raised behind each other, with their backs towards the altar.

The fall of plaster and whitewash and the noise of footsteps are far from edifying to those who sit underneath; and the rest of the congregation, whom the occupants of this gallery, mostly impudent boys, face and overlook, have other complaints against it.

It is to be repaired because the ancestors of the parishioners used to sit there. I would ask all those who have been accustomed to deal with galleries, can this one be got rid of instead?

If the gallery at the west of the nave which is approached from the churchyard were removed, and that in the north transept also approached from the outside, and the gallery in the tower archway, as well as this east gallery, which are both approached from the belfry stairs, the number of seats would be so far reduced that it is doubtful whether the church would contain all who would wish to come at once. The number of persons who use the seats these galleries contain would not, I fear, be considered with the question of their removal. Seats are seats, no matter how disagreeable it is to get at them, sit in them, or hear and see anything when in them more edifying than giggling and winking, or nutshells and orange-peel.

We want the least evil, not the less of two, and restoration such as architects treat us to is more often conciliatory than conscientious. Until an architect is independent of parson and people, we shall always trace their prejudices in buildings new, or newly done up. That those who use the building and pay for it ought to know what they want, is one thing; that the architect ought to be the best judge as to what kind of building is good for the intended purpose is another. I will not pretend to reconcile them, for the case of Braunton Church seems to make it impossible to do so.

I feel sure that any solution of these difficulties will be gladly considered by the Restoration Committee. Their difficulty is not with the architect, but with the parishioners, among whom I was born, and therefore beg to subscribe myself your faithful servant,

BRAUNTONIAN.

## ST. THOMAS'S HOSPITAL.

I read in your issue for March 6, with very great interest, the remarks of your 'Rambler' on the new St. Thomas's Hospital, but was rather disappointed to find that the fact of 'Gibbs's fireplace lintels' being used by the architect, Mr. Curry, in all the fireplace openings of this building, was not stated. Perhaps you will kindly notice this in one of your forthcoming numbers, and oblige

Liverpool.

Your obedient servant,  
JOHN GIBBS.

## PARLIAMENTARY PROCEEDINGS.

## Military Labour.

On Monday, April 12, Mr. HANBURY-TRACY rose to call attention to the waste of public money which arises from adhering to the system of employing civilian labour on the construction and repair of works and buildings connected with the War Department, when experience gained at Woolwich, Dover, Parkhurst, and the Aldershot and Curragh Camps shows conclusively that soldier labour can be used with the greatest benefit to the service; and to move—That, in the opinion of this House, an authorised organisation should be adopted for extending the system of 'military labour to military works' to all stations of Her Majesty's army. He remarked that an army would become efficient in proportion to the extent to which structural duties were combined with the ordinary routine. A great many military men had not yet clearly made up their minds what a really efficient army should be, but it was generally agreed, he believed, that a considerable time must elapse before we could place our forces on a par with the principal armies of the Continent. Historical students were aware that centuries ago the Romans were accustomed to exercise their troops, not only in the use of arms, but also in intrenching camps, and in other works likely to be useful to the army. More recently Napoleon declared at St. Helena that if his troops were properly trained they could, under a good general, fight as well with spades as with muskets. In America, again, only the other day, the greatest advantage was derived from having a large number

of artificers in the ranks. Lord Grey, in his evidence before the Recruiting Commission, stated this very clearly. His Lordship said:—'I would on no account take away any part of the time that was necessary for making the soldier perfect in his military drill, and I would especially require a complete knowledge of the use of his weapons, but I am told that Americans have found that the system of drill is capable of very great simplification, and that they have discovered that the efficiency of their army depends to a very great degree upon the skill of the men, not only in the use of weapons, but in the use of tools. The efficiency of the American army was increased to a degree that it was difficult to describe by the skill of those volunteer soldiers, many of whom were drawn from the western parts of America, and who had the ready habits of settlers in applying all the resources they could find to their own advantage; that the efficiency of those men in that respect was one of the great sources of strength of the American army, that it was found in that contest that entrenchments could be erected in a wonderfully short space of time by skilled men, and they had the power not only of making earthworks, but of rapidly constructing railways, and laying down electric telegraphs, and making all the arrangements for the communication with the army and carrying on all the work necessary for its advantage. Some of our own officers tell me that there was very much indeed for them to learn from what they saw actually done in the course of that contest in America.'—The motion was eventually withdrawn.

## The Central Military Prison.

On the same day Colonel NORTH also asked whether any steps had been taken to carry out the recommendation of the Royal Commission on Military Punishments, suggesting the establishment of a central military prison.

Mr. CARDWELL said that one of the questions which came before him on taking office was the first report of the Commission upon this subject, and he had been very desirous of putting into the Estimates of the present year a sum of money for the purpose of carrying into effect the recommendation as to the central prison. Upon consultation, however, with Colonel Henderson and his hon. friend the member for Truro, who was a member of the Commission, he came to the conclusion that it would be premature to do so, not from the slightest unwillingness to give effect to the report of the Commission, but for these reasons:—In their first report the Commissioners recommended many alterations in the mode of punishment which would diminish the number of imprisonments; substituting fines, for example, for drunkenness, which was the fertile mother of all imprisonment. It was thus highly probable that the number of imprisonments might be diminished. Then the contemplated reduction in the number of men might lead to the disappearance of the most frequent inhabitants of the military prisons. And, lastly, he thought it better to wait until the final report of the Commission had been presented, together with the evidence, so that Parliament might be fully informed upon the whole subject.

## The Crypt under St. Stephen's Chapel.

On Tuesday, April 13, Mr. LAYARD, in answer to questions, stated that the crypt was ready, but that, if divine service was to be established in it, it would be necessary for the House to provide an endowment for the incumbent.

## The Public Offices.

On the same day, Mr. LAYARD said that it was the intention of the Government to introduce a Bill this session for the acquisition of the property recommended to be purchased by the Treasury Commission for the concentration of the public offices.

## Metropolitan District Railway Bill.

On Tuesday, April 13, Lord ELCHO moved that it be an instruction to the committee on the Metropolitan District Railway Bill to inquire and report whether any and what provision would be made by the railway company in constructing their line from Westminster to Cannon Street, with a view to prevent injury to adjacent buildings from the vibration caused by the passage of trains. The Bill in question, he said, empowered the company to construct a line along the Thames Embankment, which it was hoped would be turned to account as one of the finest sites in the metropolis for the erection of public buildings, and the House would, he thought, be loth to see anything done which would cause danger to those buildings when erected, a danger which was to be apprehended from the vibration caused by the running of the railway. When the Metropolitan District line was being constructed in the immediate vicinity of Westminster Abbey, the Dean and Chapter of Westminster were apprehensive of injury to the Abbey from that cause, and forced the railway company to take the precaution of using a quantity of teak, which acted as a non-conductor to vibration. Again, when it was sought to construct a railway tunnel under the Observatory at Greenwich, the Astronomer-Royal made a representation to the Admiralty on the subject, because of the risk to the building which would be likely to be occasioned, and the South-Eastern Company were obliged to take another line. In the case, also, of the underground line along Oxford Street from the Marble Arch, the Vestries protested against a work which they were led to believe would be injurious to the houses on the line, and it was put a stop to.—Mr. Gilpin said the objection raised to railways on the score of the vibration which they caused he could say, from his own experience, might be brought against the ordinary traffic in the streets.—Motion withdrawn.

## LEGAL.

Court of Bankruptcy, Basinghall Street.—April 12.

(Before Mr. Commissioner BACON.)

IN RE T. G. A. PALMER.

The bankrupt, Thomas George Adams-Palmer, of 7 Sackville Street, Piccadilly, and formerly of Cawnpore, India, ironfounder and contractor, applied to pass his examination and for an order of discharge. He came before the Court on his own petition, and from his preliminary statement



it appeared that until the end of the year 1866 he carried on business in India, when, owing to depreciation of securities and commercial losses, he was compelled to suspend payment. Many meetings of his creditors were held, and ultimately he was required to execute two assignments for the benefit of his creditors. By the deeds, which were prepared by the committee of the creditors, he conveyed all his property, moveable and immovable (except his wearing apparel), to Cecil Stephenson, Samuel Bird, and another, for the benefit of his creditors. He left India in 1867, and came to England, where he had been sued by one of the non-assenting creditors, Alfred Preston. He had no funds to contest the validity of the deeds in England. He had given up all his property for the benefit of his creditors, and he was compelled to seek the protection of this Court. The accounts filed by the bankrupt returned debts of 154,980*l.*, with assets, consisting of property surrendered to the trustees, 298,000*l.*

Mr. R. T. Latley, a creditor, in person opposed, and contended that the bankrupt, having given up his property to trustees in India, might properly seek his discharge there, and he had no right to petition this Court.

From the bankrupt's evidence, it appeared that he made a post-nuptial settlement either in 1858 or 1859. The settlement comprised some houses and some land in Oude. The trustees were in India, and so was the property. He was pressed in India. He submitted all the accounts to his creditors, and then made deeds of assignment. The year before the assignment he expended 1,200*l.*

The Court held that no valid objection had been shown to the discharge, which was accordingly granted.

#### Middlesex Sessions.—April 12.

Francis Thomas Chittell surrendered to his bail to answer an indictment for stealing a number of deals, the property of M'Clymont & Co. The prosecutors are builders of the Redcliffe estate at West Brompton, and the prisoner is a lighterman; he was in charge of a barge laden with deals belonging to the prosecutors, to be delivered at Lindsey Wharf, Chelsea. The prisoner employed several boys, according to the evidence for the prosecution, to assist him in unloading the barge, and paid them by giving them some of the deals. Other deals were also missed, the whole number short being 43. For the defence it was shown that the prisoner had not employed the boys, but had tried to keep them off the barge, and also that one of the carmen employed by the prisoner to carry the deals from Lindsey Wharf to the prosecutor's works had failed to deliver one load (about 43 deals), and had since absconded.—The jury returned a verdict of 'Not guilty.'

## NOTES ON NOVELTIES.

### Indian Punkahs.

A new punkah-pulling machine has recently been invented by Lieutenant Turnbull, of the 6th Royals, which, it is hoped, will enable the punkah coolies to be in a great measure dispensed with in India. The mechanism of this contrivance is of great simplicity, and its perfect noiselessness is said to be one of its chief recommendations—the faint ripple of the linen punkah being heard amid the complete silence of the wheels that move it to and fro. A deadweight turning a horizontal shaft gives the desired motion to a slender flywheel with four spokes; a slight jerk of the punkah being caused at each revolution by the plan of making one spoke heavier, at the end next the nave, than any of the other three. This peculiar action imitates with admirable nicety of effect the movement of the wrist when the punkah is worked by an attendant. There are 12,000 revolutions of the fly-wheel, and consequently as many forward pulls of the fan, in eight hours; and this statement will exemplify the great saving of manual labour which the machine accomplishes.

### Ransome's Patent Concrete Stone.

Much has been already written and said relative to the uses to which Ransome's Patent Concrete Stone is applicable for building or decorative purposes; and probably most of our readers are already, to a certain extent, acquainted with the material, which is now to be seen in many of our more recent public buildings. To the engineer this invention has already repeatedly proved its usefulness, not only as a building material, but extensively for the beds of steam-engines, and even of steam-hammers; its solidity and toughness being such that it perfectly endures the percussive action to which it is subjected in the latter case. To the architect also it is valuable, as enabling him to produce with exactness his moldings, cornices, capitals, pilasters, and other parts of a building where repetition is required. Nor is it by any means necessary that the stone should bear upon its face the appearance of having been made in a mould, for it is as capable of being dressed with the chisel after induration as any natural stone taken from the quarries, while this additional advantage is claimed for the material by its manufacturer, that it possesses a perfect homogeneity of structure, such as can scarcely be relied upon in any blocks of the natural freestones.

Although the original idea embodied in the present process occurred to Mr. Ransome's mind so long back as the year 1844, it was not till the year 1866 that the principles now carried out in the manufacture were arrived at. About that time it occurred to Mr. Ransome that if a compound-silicate of lime could be formed in the surface-pores of natural stones, it would tend very much to their preservation from decay, and experiments subsequently proved the correctness of those views. Taking advantage of the experience thus obtained, it next occurred to him that by the adoption of a somewhat similar process applied to sand, or pulverised stone, and by forming a compound silicate of lime, artificial stone might be formed by means of a cementing agent not only possessing perfect insolubility, but which would also effectually envelope, and firmly bind together, the several particles of which the stone was composed. After numerous experiments, designed to reduce this principle to practice, he found that the application of a solution of chloride of calcium (or lime dissolved in muriatic acid) to a mixture of sand with silicate of soda (consisting of flint stones dissolved, under pressure, in caustic soda) formed almost instantaneously, by double

decomposition, an insoluble silicate of lime, and a soluble salt of chloride of sodium, or common salt, which latter substance is easily removed by subsequent washings.

Since the year 1863, when a joint-stock company was formed for the manufacture of artificial stone upon Mr. Frederick Ransome's patents, many improvements have been introduced into the process, gradually and steadily leading towards a high standard of perfection. Recently a great improvement has been introduced in the manufacture, ensuring uniformity, and removing uncertainty from the operations. This has been effected by the use of air-pumps, whereby a complete exhaustion is effected in the pores of the mass, and its perfect saturation by chloride of calcium is the more easily obtained. At the works of the Company, at East Greenwich, there are now exhaust-vessels from which pipes are conducted in every direction, so that, by means of flexible connections, all kinds of work can, at all points, be brought into communication with the exhaust-chamber. According to this process, which is the combined invention of Mr. Frederick Ransome, Mr. Henry Bessemer—so well known as the inventor of the Bessemer process for manufacturing steel—and Mr. Ernest Ransome, son of the original patentee, the stone is saturated by immersing the mass in a solution of chloride of calcium, when, by connecting it by means of the flexible pipes before alluded to, the solution is drawn through by exhausting the air from the mass. After a suitable time, water may also be drawn through the stone in the same manner, in order to remove from it any salts which remain in a soluble state. A current of air, either hot or cold, or even artificially deprived of its moisture, may then be drawn through the stone for the purpose of displacing the moisture, and drying the stone. By this process the principle of manufacturing artificial stone is enabled to be brought more generally into use, and materials, otherwise unsuited for the purpose, may now be successfully employed. Besides this, also, the above means may be employed for the subsequent saturation of the mass with waterproofing or colouring compounds.

In addition to building or decorative purposes, this same process has been made applicable by the inventor to the manufacture of grindstones, which have already achieved a notoriety for their uniformity of texture and extraordinary cutting properties. Filters are also manufactured, by the same process, of any dimensions. And the proved capabilities of the artificial stone to resist the action of the strongest acids, make it an invaluable acquisition for chemical works. The Patent Concrete Stone has now achieved a great position for itself, and is being largely employed both in this country and abroad. Amongst other buildings where it has already been employed may be mentioned the new India Offices, in Westminster, and it has been extensively used for cornices and dressings for several large warehouses in the City of London. It is also being largely introduced in the more ornamental portions of St. Thomas's Hospital. An important fountain, made entirely of the patent stone, has recently been erected in the Public Gardens at Hong Kong. It has been largely introduced in the Nawab's Palace at Moorshedabad, Bengal; it is being used in connection with the works for the improvement of the navigation of the Godavery; the Indian Government has recently established a manufactory on a large scale at Bombay; and Mr. Ransome is now engaged in preparing plans and estimates for erecting works for the manufacture of this material for the municipal authorities at Madras. Among some of the more recent novelties in connection with this stone, may be mentioned the manufacture of ashlar facings, which are so constructed that projections in rear bond firmly in with the brickwork backing. Hollow building blocks are also formed of the same materials, and so constructed with tongues and grooves that they dovetail, as it were, into one another, forming at once a very light but extremely strong building.

The applicability of Mr. Ransome's invention does not, however, stop at the manufacture of stone; it is also applicable to the preservation of natural stones from decay, and for the protection from damp and climatic influences of bricks, stucco, and cement. Space will not admit of our giving a lengthened account of the processes employed for this latter purpose. Suffice it here to state that besides the silicate process, the Patent Concrete Stone Company are in possession of a second, known as Ransome's combined process, which is in some cases preferred to the former. Amongst other buildings to which this has been applied may be specially noticed the Chapter House, Westminster, portions of Canterbury Cathedral, and the new Midland Railway Terminus at St. Pancras.

### Flooring Tiles and Slabs made from Slate Refuse.

The immense accumulation of refuse in the slate quarries has induced M. Sébille to convert it into paving tiles and other useful articles; the slate, with a certain proportion of river-sand and pitch, all reduced to powder, is heated by steam, then poured into moulds of the form of the tiles or slabs required, and afterwards submitted to hydraulic pressure amounting to 170 kilogrammes on the square centimetre. The tiles are then cooled in water, and the upper surfaces ground smooth if required. The density of these slate tiles varies between 2.2 and 2.5; they are unaffected by acid or alkaline solutions, and they will bear a temperature of about 160° Fahrenheit without suffering.

These composition slabs and tiles are not only economical, but they possess far more power of resistance than ordinary stone. M. Michelot, who has made a series of experiments with them, says that their resistance is not less than 325 kilogrammes per square centimetre, or, in round numbers, about 2 tons to the square inch.

## NEW BUILDINGS AND RESTORATIONS.

**A new Presbyterian Church** is to be erected in the Camden Road, London. It is intended to accommodate 720 persons, and is to cost 8,000*l.*

**New Church at Holloway.**—A new church is about to be erected for the district around and including the Seven Sisters' station of the Great Northern Railway. The Bishop of London's Fund has voted 2,000*l.* towards the scheme, 1,000*l.* for a site and a second 1,000*l.* towards building.

We understand that Mr. G. G. Scott, R. A., is about to erect a church at Highclere, for the Right Hon. the Earl of Carnarvon.

The attendants at Miles Street Chapel, Vauxhall (United Methodist Free Church), are arranging for the commencement of a new chapel to meet the growing wants of the church and congregation.

**New Chapel and School-room at Soham.**—Services have been held at Soham, Ely Circuit, in connection with the laying of the memorial stones. The cost of the building will be about 620*l*.

The Vicar of Mirfield has laid the foundation stone of a new parish church. The structure, which is to supersede the present edifice, will be a very handsome one, and is to cost between 12,000*l*. and 15,000*l*.

**St. Chad's, Kirkley.**—The Earl of Sefton has laid the foundation-stone of the new church at St. Chad's, Kirkley. It is to cost 10,000*l*., and he provides the funds.

Great Renovations are taking place at Worsley Hall, the seat of the Earl of Ellesmere, for the entertainment of the Prince of Wales on the occasion of his visit to that district.

**The Restoration of St. John's Church at Wolverhampton.**—The committee for this purpose have accepted the tender of Messrs. Higham, builders, of Wolverhampton, to do the main work of restoration for 1,201*l*. 3*s*. 9*d*. Other works are contemplated at a cost of 400*l*.

**The New Town Hall at Stone.**—At a committee meeting held at the Crown Hotel, on Wednesday, March 31, twelve tenders for the erection of this building were opened. That of Mr. John White, builder, of Nottingham, for 2,130*l*., was accepted. The building, after the plans of Mr. F. Bakewell, architect, of Nottingham, will be immediately commenced, and it is expected that it will be handed over to the trustees by the 1st September next.

**The New Dumfries Infirmary.**—The plans of the new Infirmary, prepared by Mr. Starforth and selected by the building committee, have been submitted to Mrs. Laurie, of Maxwelltown, who has returned them with an expression of approval. Working plans and specifications are being proceeded with by the architect, who anticipates that tenders can be procured from competent tradesmen to carry out his plans for the sum of 10,000*l*. Should this be done, Mr. Starforth will, subject to the approval of a general meeting of governors, be entitled to the prize of 50*l*. offered for a selected plan.

**The Tower Subway** is under the superintendence of Mr. Peter W. Barlow, jun., C.E.; the contractor being Mr. J. H. Greathead; the shafts are being sunk by Mr. Thomas Tilley, of 2, Bond Court, Walbrook, London. The castings for these shafts and the tunnel, which are all made in segmental rings firmly bolted together, as also the manufacture of the shield, are entrusted to the firm of Messrs. Bells, Goodman, & Co., of the Walker Engine Works and Foundry, Newcastle-upon-Tyne, and 25, Walbrook, London. It is expected to be opened to the public before the commencement of the year 1870.

**The New Grammar School at Doncaster** has just been opened. It has been erected on a valuable plot of building land given by W. H. Forman, Esq., of Sippbrook House, Dorking, who, in addition to his munificent gift of the land, presented a donation of 1000*l*. towards the building fund. The school is built from designs of Mr. George Gilbert Scott, R.A., and stands boldly out a long way back from the road, upon a fine terrace raised nearly four feet above the general level of the ground in front. The school is approached by a massive flight of stone steps, in the centre of this terrace. In style the building is of the Decorated or Middle Pointed period, and has open cloisters on the ground plan, which give a very handsome effect to the front elevation. These cloisters furnish a covered playground of 68*ft*. long, and 35*ft*. 9*in*. wide. There is also on this ground level a library 11*ft*. 6*in*. by 35*ft*. 9*in*., and staircase to the school-room and offices. The upper floor is occupied along the whole front of the building by the school-room—a large hall of good proportions and considerable ornamentation. It is 82*ft*. long, by 35*ft*. 9*in*. wide, and 42*ft*. high. The roof is massive and beautiful—being a fine specimen of the open king-and-queen post roof, with moulded hammer beams, and circular wall braces and ribs, forming the principal rafters, which spring from great stone corbels and form grand trefoil-headed spans. There is an immense amount of work about the roof, and, except the common rafters, which are square, the whole is handsomely moulded. The timber used is Baltic fir, and is stained. On the upper floor, at the back, there are also a class-room 26*ft*. by 14*ft*., and a master's room 14*ft*. by 12*ft*. 6*in*. Above the master's room and the staircase, and at the west and entrance end of the school, is erected a gallery, which extends right across the room, leaving the roof open to the end of the building. The school-room is heated by hot-water pipes, and lighted by plain gas-pendants hung from the end of each hammer beam of the roof. Throughout, the fittings are substantial and complete.

Viewed from the playground in front, or from the high road beyond, the new school has a fine and imposing effect. Below, rising just above the terrace, are the five pointed arches forming the open front to the cloisters, flanked on each side by a window—the library and staircase windows. Above these are moulded string-courses, and then seven large, handsome, three-light windows, divided by transome heads, giving six lights to each window. The mouldings of the windows are deep and massive. Over the window heads is a moulded corbel tabling, and projecting eaves of the roof, which is of very high pitch and covered with Brossely tiles. At the west corner there is an ornamental smoke turret carried a little higher than the ridge of the roof. The upper part of the turret is of Ashlar stone, with traceried shallow niches, terminating in a short spire, surmounted with a gilt vane. In the spire part are eight trefoil apertures for the escape of the smoke from the warming apparatus. The ends of the building contain small pointed windows in the lower part, and two large six-light windows, of rich and elegant design, above. Over these are quatrefoil louvres, acting as ventilators through the roof—this important matter of ventilation being amply provided for throughout the building. The total cost of the building has been about 6,000*l*.

**The Proposed Gymnasium at Ashford.**—A meeting has just been held at the Public Rooms to forward this project, and the necessary committee appointed. The gymnasium will cost 43*l*.; reading and dressing rooms, 97*l*.; drill shed, 39*l*. The proprietor of the premises (Mr. J. S. Burra) was present, and showed a desire to meet the views of the promoters.

**Marlow (Bucks) Bridge.**—At the Bucks Easter Sessions, the County Surveyor reported that 'the deal planking of this bridge, which was put down in the year 1860, at considerable cost, has become decayed from dry-rot, and has been consequently replaced. The committee think that the deal platform should be restored or repaired, and that the layer of felt and asphalt, which was placed between the upper platform, constructed of deal, and the lower one, which is constructed of oak, should be discontinued.' If the whole of the deal platform should be found defective, it will involve an outlay of from 250*l*. to 300*l*.

**A Wesleyan 'High Church.'**—The Metropolitan Memorial Methodist Church recently erected in Washington (U.S.), at a cost of 50,000*l*., is in the Gothic style of architecture, and is built in two storeys—the ground-floor being used for Sunday-school purposes, and the upper as the chapel proper. There is to be a tower and spire 240 feet in height, to contain a peal of bells. In the chapel all the windows are filled with stained glass illustrative of the life of the Rev. John Wesley, and of various leading Wesleyan ministers, whilst those in the schoolroom beneath are devoted to incidents in the Life of Our Lord. The panels of the pulpit, or platform, are of olive-wood from the Garden of Gethsemane, and are carved into crosses, with the sacred monogram and the symbolical ivy-plant. The keystone of the arch to the recess in which the pulpit is placed is of stone from Solomon's Temple, and upon it is carved, in Hebrew, the name of God.

**The Contract Work at Chester Cathedral,** under the direction of Mr. G. G. Scott, R.A., has been let to Mr. John Thompson of Peterborough. Mr. Thompson has executed the work at Hereford and Ripon Cathedral, under Mr. Scott, and is building the new University of Glasgow under the same architect.

**The Parish Church of Pontefract** was reopened last week. The cost of the alterations is 2,000*l*., including a new chancel, which has been added at the expense of the Earl of Harewood, the lay rector.

**The Bristol Cathedral Nave Restoration** had its first anniversary a few days since, by the holding of divine service in the cathedral.

**Sedgefield Asylum.—New Wing.**—The new wing being erected at the Durham county asylum for the accommodation of 200 additional patients will soon be ready for occupation.

**Shildon Police Station, Durham.**—The plans of this police station have been approved, and tenders will be at once advertised for and the works commenced. The estimated cost is 400*l*.

**Stanhope Police Station, Durham.**—The plans for the proposed additions to this station have been approved. The estimated cost of the work is—450*l*. for superintendent's house, stable, and gig-house, and 50*l*. for improvements to police-court. The Clerk of the Peace is instructed to take the necessary steps with the trustees of the present town hall and police building at Stanhope, to enable the county architect to proceed with the new building as early as possible.

**The First British School in Breconshire** was opened on Easter Monday. For years this portion of the county has been destitute of the means of education to children of the neighbourhood.

**New Chapel at Syke.**—A small chapel (belonging to the United Methodist Free Connexion) has been erected at Syke, in the Rochdale Circuit, at a cost of upwards of 1,200*l*.

**The Corner-Stone** of an edifice at Sheffield, to contain 'thirty-six almshouses for the accommodation and subsistence of forty-eight aged and indigent persons,' has just been laid with some ceremony. For the erection and endowment of these almshouses Mark Firth, Esq., has appropriated 26,000*l*., 'as an expression of gratitude to Almighty God for His favouring providence, and as a means of benefiting so many of the aged and indigent of his native town as may be deemed eligible for the charity, and as the charity itself may be able to support.'

**The Chancel of the Parish Church of Olney** is about to be restored at the expense of the Right Hon. the Earl of Dartmouth. Mr. G. G. Scott, R.A., has made a survey and report. The estimate of Mr. Tait, of Melton Mowbray, has been accepted.

**Mechanics' Institute, Durham.**—A few years ago the committee of this institute expressed a desire to have the present building enlarged, to meet the wants of the members. Plans were prepared, the extra ground was given by the President, Earl Durham, and several liberal contributions were made by the local gentry. A year has elapsed, and up to a few evenings ago, the whole matter was left in abeyance. We are glad, however, to report that an effort is about to be made to raise the remainder of the required money in the shortest possible period.

**The Stockton Water Scheme.**—A meeting of the Parliamentary Committee of the Stockton Corporation was held last week, when it was resolved to recommend the Council to withdraw from the further prosecution of the water scheme, on the ground of the difficulties presented on the question of compensation to the millowners and others.

**A New Protestant Church** is to be erected at Sulina, Turkey, at the Sulina mouth of the river Danube, in connection with the works of the European Commission of the Danube.

It is in contemplation to restore and enlarge the church of St. Peter, at Mansfield.

**The Parish Church at Shadoxhurst,** after some extensive repairs costing 600*l*., has been reopened. The builders are Messrs. Bourne and Blackman, of Woodchurch; Mr. Gordon M. Hills, of the Adelphi, is the architect.

ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

Opening of the Wedgwood Memorial Institute at Burslem.

This interesting ceremony is announced for Wednesday, April 21, and will be performed by Earl de Grey and Ripon.

His Lordship is expected to reach Burslem between one and two o'clock. On his arrival he will be received at the Town Hall, where an address from the local governing body will be presented to him. He will then be escorted to the Wedgwood Institute, where, after walking through and so formally opening the Exhibition, he will preside at the luncheon in the Lecture Theatre.

The Exhibition itself is expected to be one of real and possibly remarkable merit. The collection of oil paintings and water-colours will be admirable. The pottery collection will contain examples of every stage from the earliest period up to Wedgwood, and a large display of the works of Wedgwood himself; and besides this there will be a miscellaneous collection of artistic productions, chiefly contributed from South Kensington.

Memorial Statue to the Late Prince Albert.

We understand that the matter of the Memorial Statue of the late Prince Albert, to be erected in the City of London, is shortly to be brought before the Common Council.

The New Guildhall, &c., at Plymouth.

As our readers are aware, a public competition has been instituted in the case of this intended structure. According to the programme issued, the building is to consist of a Guildhall, with Law Courts, a Police Court and Station, with Council and Committee Rooms; and Offices for the Town Clerk, Treasurer, Surveyor, &c., &c., at an intended outlay of some 25,000*l.*

The drawings required for the purpose are pretty numerous; and will, for so comprehensive a building, involve no ordinary degree of skill and application on the part of competitors. Still, the printed instructions run coolly as follows:—

'Competitors must look solely to the premiums for their remuneration; as the Town Council will not engage to employ any of the architects whose plans may be accepted.' (!)

We are sorry to see a clause such as this in connection with what should be an important competition. The premiums offered are three in number, amounting altogether to 225*l.*, which sum falls short of the professional value of one good set of plans, sections, elevations, and a general specification and estimate; to say nothing of (or rather for) 'a perspective view, 34 inches by 23 inches.' Let us suppose twenty designs sent in: their mere cost 'out of pocket,' leaving nothing for their authors, will most likely exceed twice the amount of all the premiums added together; so that what the competing architects are to gain by entering into such a competition is not very clear. Thus much we feel impelled to say, in the interests of the profession. If the Town Council are wise, they will withdraw their objectionable clause; and, instead of offering a premium for the first, second, and third best design, they will offer for the best design the customary commission only, and reserve their 100*l.*, 75*l.*, and 50*l.* premiums for the unlucky authors of the second, third, and fourth designs. The time allowed for the preparation of the designs (July 14) might, we think, be with prudence extended.

Notes from Germany.

Professor Wilhelm Camphausen, of Düsseldorf, is engaged upon a large historical picture, being a commission of Prince Alexander of Prussia. The subject is the meeting of the Crown Prince and Prince Frederick Charles on the heights of Chlum on the evening of the battle of Sadowa. The positions chosen are said to be well rendered and full of life and vigour, whilst every figure upon the canvas is a portrait.

Mr. C. Puscher in the last number of Dinger's (German) 'Polytechnic Journal' describes a very simple means to retard the process of hardening of plaster of Paris, which for many purposes takes place far too quickly. To the burnt and pulverised gypsum he adds from 2 to 4 per cent. of the root of the yew tree, very finely powdered, and kneads the whole into a plastic paste by the addition of 40 per cent. of water. The gypsum in this state is of the consistence of stiff clay, and, commencing to harden in about an hour, remains sufficiently tough to admit of cutting, boring, turning, or filing without breaking. By adding 8 instead of 4 per cent. of yew tree root, the hardening may be postponed still further and the mass is rendered much tougher. As the brittleness of hardened plaster of Paris has hitherto prevented its being used in many ways, it is probable that this simple invention will be found a welcome hint to the decorative artist.

'Judicious Restoration' in Belgium.

The Belgian Minister of the Interior has just issued a circular to the governors of provinces relative to the native monuments of the Middle Ages, which at each fresh restoration are exposed to suffer more or less alterations of style. 'The interest of the Art,' he says, 'and the maintenance of traditions require that the Government should prevent, by all the means at its disposal, any alteration in style during the execution of such necessary works as the ancient monuments of the country may in future stand in need of. To this end the greatest possible number of authentic fragments of ancient national Architecture should be collected, so as always to be able, at the time of the restoration of any edifice, to preserve the peculiarities and character of its original style and period.' In order the more effectually to attain this object he thinks that it will suffice to oblige all contractors, about to undertake works of this nature, to have casts taken (at their own cost and by a skilful workman) of all such objects as the competent authority, which shall be appointed, shall require; such casts to be carefully and neatly made prior to the restoration being commenced. The casts, he advises, shall be made by means of gelatine, which permits as many as four good casts being taken from an impression made on the spot. These four copies he orders to be disposed of in the following manner: one

to be retained by the State, the second to be sent to the museum of the town or province, the third the builder will keep himself, whilst the fourth goes to the artist who took the impression, and who is at liberty to produce further copies for sale as models or for other purposes. The order closes by requesting the Provincial Governors to issue the necessary instructions to Communal Administrations that this clause be inserted in future specifications of works coming within their jurisdiction, and to see that such clause be properly carried out.

Notes for Connoisseurs.

The sale of M. Edouard Fould's collection has created even more interest than was expected; the pictures and drawings formed a small part of the whole, but they were mostly choice, and fetched great prices. A drawing by Bida, Maronite Preaching in Lebanon, 186*l.*; Decamps, Samson Engaged with the Philistines, formerly belonging to the Duchess d'Orléans, 600*l.*: this picture cost M. Fould about 36*l.* more than it sold for; \* Gerôme, Rembrandt at Work Etching a Plate, a charming picture quite out of this artist's line, exhibited five or six years ago, 600*l.*; Marithat, Courtyard of a Mosque, 364*l.*; Meissonnier, Visit to the Atelier, 568*l.*; iem, View of Venice at Sunset, from the De Morny collection, 300*l.*; Lancret, a Group around a Fountain, a picture sold at the Earl of Pembroke's sale for 1,400*l.*, fetched the enormous sum of 2,520*l.*, a high price for such a whistle; Pater, a Party in a Park, which sold at the same nobleman's sale for 1,360*l.*, high enough in all conscience, 2,080*l.*; A. Ostade, Dutch Interior, from the De Morny collection, 230*l.*; Weenix, Dead Game, 380*l.*; and Womverman, The Stag at Bay, from the Elysée collection, 808*l.*

At the sale of a private collection in Paris last week, a Seapiece, by Backuysen, The Coming Storm, from the King of Bavaria's collection, fetched 204*l.*; Portrait of a Burgomaster with his Dame, by F. Bol, 304*l.*; The Geographer, by Gerard Dow, a well-known work, 212*l.*; Van der Meer, a Concert by Three Persons in a Dutch Room, from the Van Leyden gallery, 204*l.*; a well-known little picture, by Velasquez, The Infanta Maria Theresa, from the collection of Louis Philippe, 33*l.* 12*s.*, a small price for anything by this artist nowadays; a Van de Velde, Landscape with Animals, 284*l.*; and two works by Vetter, The Compliment and the Reception, 236*l.* and 272*l.*

Twenty water-colour and other drawings, by M. V. Pollet, were sold the other day here in Paris, and fetched the relatively large sum of 945*l.* 4*s.*

On the 27th of the present month of April are announced for sale, three pieces of the famous so-called Henri II. ware, so dear to amateurs; and two remarkable specimens of Bernard Palissy ware; the subject of one being Temperance, the other bearing the cyphers of Henri II. and Catherine de Medicis, both famous examples.

Those who are curious to know the condition of industry and art in the North of France would do well to pay a visit to Beauvais, one of the famous seats of the tapestry and carpet manufacture, in the month of June, when there is to be a large exhibition, artistic and archaeological as well as industrial. The nearness of Beauvais to Calais and Boulogne is an extra inducement.

Compensations Awarded to Tenants in Paris.

The following is the account of the indemnities awarded by the expropriation jury to four tenants of a house in the Rue de la Bourse, about to be abolished for the formation of the new Rue Réaumur, which will form a straight line from the Bourse to the new Opera House:—

A restaurateur . . . . .	Francs.
A café keeper . . . . .	90,000
A hairdresser . . . . .	80,000
A glove maker . . . . .	17,000
	18,000
	£8,200 = 205,000

All the tenants of condemned houses do not certainly hold leases, and thus obtain indemnities, but the greater portion in the best neighbourhoods, and especially in the great commercial streets, hold their apartments on lease, and the total amount of indemnities paid to tenants, to say nothing of landlords, is enormous.

Austrian Railways.

The total length of railways now in working order in Austria, including the Italian system, amounts to 1,228 miles, of which 624 miles are on German soil, 351 in Hungary, and 253 in Italy. In course of construction are 299 miles, of which 159 are in Austria proper, 121 in Hungary, and 19 in Moldavia. Concessions have lately been obtained for 530 miles more. This will make a total of 2,057 miles of railway. The railways of Great Britain and Ireland amount to 2,144 miles.

Abyssinian Relics.

Great interest has been excited by the exhibition in the window of Messrs. Elkington & Co., of Liverpool, of a unique specimen of art manufacture, in the shape of a coffee tray, which was 'looted' at Magdala, and is believed to have belonged to the late King Theodore. It was brought to Liverpool by an officer of the Transport Corps, by whom it was presented to Mr. Eberlé, of the Alexandra Hotel. The tray is a very fine specimen of workmanship, and is 25 inches in diameter. The centre ornamentation is somewhat in the Byzantine. The centre panel is framed by concentric circles, each one being varied in design, showing great taste in the regular arrangement of ornamental scrolls *en suite* with the centre panel. The outer border is raised and very simply fluted. It is difficult to assign an epoch or country to this rare work of art, but with other specimens of the goldsmith's art from Abyssinia to guide us, we may—with some degree of plausibility—attribute its production to native talent. However, judging from the method of its production, which is technically styled *flat chasing*—a favourite manner of working with the Arabs—it may, with equal safety, be attributed to the latter. The metal of which this 'Theodore tray' is composed is copper, most skilfully and effectively overlaid with gold.

\* Decamps' works have lately obtained such large prices that this result is curious; the cause of it is a very unpleasant one, namely, that so many forged imitations have been made that connoisseurs and dealers have become suspicious.



## General.

**Technical Instruction.**—The Committee of Council on Education, on December 21, 1867, passed an important minute for the encouragement of scientific instruction. In accordance therewith, it is proposed to graft on to the science and art instruction already imparted at the Training College for Schoolmasters, Culham, Oxon, such higher branches as are required for fitting persons to be teachers of technical schools throughout the country. Classes were opened on February 1, in all branches of practical drawing, mathematics, mechanics, hydraulics, electricity, chemistry, geology, applied sciences, &c., to prepare students for the examination in May next, when several exhibitions of 10*l.* each (to meet those offered by the Committee of Council) will be offered for competition. After May next, a separate department will be opened for carrying on students mainly in those branches of study which will render them efficient teachers of technical instruction. All further information will be afforded, and all suggestions from Chambers of Commerce, local committees, &c. received, by the Rev. James Ridgway, M.A., F.S.A., Principal of the College.

**Metropolitan Board of Works.**—At the weekly meeting held on the 9th inst. eleven tenders were received for the construction of sewers, subway vaults, and paving the foot and carriage way between the west end of New Earl Street and the Mansion House. That of Messrs. J. Mowlem & Co.—19,750*l.*—which was the lowest, was accepted. The highest tender was 24,100*l.* The Works and General Purposes Committee have reconsidered the memorial from inhabitants of Vintry Ward, praying the board, in laying out Mansion House Street, to leave the plot of land adjoining the south side of the church of St. Mary Aldermanbury unbuilt upon, and they see no reason to depart from the recommendation which they previously made.

A Series of sketches, drawings, and pictures, the property of Mr. John Ruskin, have been sold this week by Messrs. Christie, Manson, & Woods, at their rooms, in King Street, including the celebrated picture of the Slave Ship, by J. M. W. Turner, R.A.; forty beautiful drawings and sketches, illustrating the different periods of the same great master's work; two fine examples of Copley Fielding; four fine works of W. Hunt; and specimens of D. Cox, Duverger, and J. Brett.

M. Costa, the eminent musician, received the honour of knighthood on Wednesday last.

Petitions in favour of the removal of the site of the Law Courts to the Thames Embankment have been lying for signature at the Westminster and other stations of the Metropolitan Railway.

**Metropolitan Street Tramways.**—The committee have agreed that a case for the promoters of the bill has been established only so far as regards the construction of the southern line, less the loop between Hercules Buildings and Westminster Bridge. 2. That some limitation must be placed on the proposed monopoly. 3. That, after a period to be fixed, the street authorities are to have the power of purchasing the tramways. 4. That the power of the police to regulate the traffic shall be reserved. 5. That the bye-laws shall be subject to the approval of the Home Office. Witnesses have been called to prove the preamble of Bill No. 2, called the Pimlico, Peckham, and Greenwich Tramway Bill, who said that the Pimlico portion of the Bill had been abandoned, and that the line would commence near the railway station in Kennington Lane.

The Government will probably not take legislative action upon the Report of the Trades Union Commissioners. The main features of the proposed Bill on the subject are the repeal of the Combination Acts, and the protection of trade funds under the provisions of the Friendly Societies Acts. While permitting workmen and employers to organise themselves and make rules with respect to the persons by whom, or the mode in which, any particular work shall be done—or with respect to any terms and conditions under which it shall be carried on—the Bill provides that no association shall be formed or maintained for the commission of any offence against the common law. Conditions are also stipulated for the registration of rules and bye-laws, and the furnishing of annual accounts to the Registrar of Friendly Societies.

A full-length Portrait of the Archbishop of Canterbury (Dr. Tait) has been presented by a number of laymen to Dr. Jackson, Bishop of London, to be placed in Fulham Palace.

**Manses for Foreign Missionaries.**—The scheme originated by the Free Church of Scotland for providing manses or dwellings for the foreign missionaries continues to progress, and it contemplates the raising of 50,000*l.* The Established Church of Scotland has started a similar movement since Dr. Norman Macleod's return from India, but the sum to be raised in this case is only about half that contemplated by the Free Church.

**Church Building.**—The fifth annual report of the Board of management of the Bishop of London's Fund, just issued, contains some interesting information respecting the working of this movement. There have been seventy mission districts in connection with the Fund since 1863. In eighteen of these the permanent church has been already built, in five the church is building, while four districts, though they have not churches, have still been endowed by the Ecclesiastical Commissioners as Peel districts. In seventeen districts, local church-building committees have been formed to raise funds to meet the large grants made towards this object by the committee of the Fund. In order to provide for the mission districts, and for those populations that, having been displaced by metropolitan improvements, are rapidly settling down in thinly inhabited suburbs, the committee has secured or contracted for a large number of sites for churches, schools, and parsonages. Many of these sites are occupied by their respective building works, while in several cases sites have yet to be secured.

**Our Sewage.**—At the present moment the question of sewage irrigation versus the manufacture of artificial sewage manure is being vigorously discussed at Kingston-on-Thames.

The New Station at West Brompton, on the Metropolitan District Railway, was opened for passenger traffic on the 12th instant.

At the National Gallery the six rooms hitherto allotted to the national collection are supplemented by the five rooms formerly devoted to the annual exhibitions of the Academy, forming altogether a gallery opening out from end to end of the long edifice in Trafalgar Square.

Locomotion is all very good, but are we to have our houses shaken to pieces by subterranean trains? That very important question Lord Elcho has put to the House of Commons with reference to the proposed extension of the Metropolitan lines, and the subject demands most serious consideration. What is to be done? We must have Metropolitan railways, but possibly we may have to employ, as Mr. Hawkshaw suggests, a different kind of engine.

At an early hour on Wednesday morning the premises of Mr. Wilson, furniture dealer, High Street, Camden Town, were partly destroyed by fire.

The Extensive Block of Buildings occupied as seed and hop warehouses in Kentish Buildings, High Street, Southwark, tenanted by several firms connected with the Hop Exchange, were destroyed by fire on Monday night. Several of the adjacent houses are much injured. The loss is estimated at 30,000*l.*

The Family Mansion of Mr. J. Grimes, of Balham, was destroyed by fire on the 12th instant. The inmates were rescued.—The Junior Carlton Club also caught fire about the same time. There was little to burn except the building itself, as most of the furniture had been removed to the new club-house, just erected in Pall Mall.

The Hunting Catastrophe in Yorkshire.—Instead of a pyramid or obelisk, a North Riding magistrate has put forth a proposal for a memorial bridge across the Ure. The cost will be great, but the funds are thought easy of reach.

The Flour Mill of Mr. C. S. Dickinson, on Brayford Wharf, Lincoln, is no more, it having caught fire on Tuesday last. A great portion of the mill was new, and the building was filled with machinery on the best and most approved principles. The fire is supposed to have been caused by the overheating of a stove.

The New Church in course of erection on Southernhay, Exeter, belonging to the Independents, was destroyed by fire on Monday last. The building was nearly finished, and while the men were engaged varnishing the roof, flames burst from it at the west end near the tower. The fire rapidly extended to the other end of the roof, which became one mass of flames. The roof fell in with a great crash, and the woodwork inside, including the large galleries, was burnt up speedily.

Fall of a Bridge.—On Monday last an accident happened at Saltburn-by-the-Sea, causing the death of three workmen, through the falling of a bridge. Messrs. Hopkins, Gilkes, & Co., of Middlesborough, are building an iron bridge of 700 feet in length across the famous glen along which the Skelton beck runs at Saltburn-by-the-Sea, for Mr. J. T. Wharton, of Skelton Castle. A strong force of workmen was employed fixing a pair of girders upon two of the piers (which are eight feet in height, reaching about 130 feet from the ground), when suddenly one of the girders slipped from its holding, and struck against the other pier, smashing the two girders and one of the piers absolutely into fragments. Upon the pier which was broken were the three deceased.

### QUESTIONS.

#### The Cost of Contract Deeds.

To the Editor of THE ARCHITECT.

SIR,—Having been a subscriber to your paper from its commencement, may I beg through its columns a reply to the following?

What is the understood and acknowledged rule amongst architects and builders as to who pays for preparing the Deed of Contract—the contractor or the contractee, as for the latter's security only is it in the majority of cases drawn up?

I have been led to ask this question from the fact of having been called upon to pay upwards of ten guineas solicitor's charges for drawing up a contract where the total amount involved was under 1,100*l.*; and upon demurring to such a charge, being told it is always the rule in this part of the country for builders to bear the cost of drawing up the contract. Though in this case the solicitor was employed solely by the contractee, and there was no understanding of any kind as to who was to pay the solicitor.

An early reply will much oblige yours obediently, SOUTH WALES.

#### Flitch Girders.

SIR,—Will you please allow me to ask through your columns what the best proportions are for a flitch girder of 20 feet span, and to carry a load in centre of ten tons? I should like to have the best practical formula for working the same out, giving thickness or proportion of the iron flitch to the timber on each side the flitch plate.

Yours respectfully,

J. BRID.

39, King William Street, April 14, 1869.

### MEETINGS OF TECHNICAL AND LEARNED SOCIETIES.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—On Monday, April 19, at 8 P.M., Wyatt Papworth:—'A Notice of the Professional and Literary Works of the late Arthur Ashpelt, F.S.A., Fellow.'

INSTITUTION OF CIVIL ENGINEERS.—On Tuesday, April 20, at 8 P.M.—1. Adjourned Discussion upon Mr. Kirkham's Paper: 'Standards of Comparison for Testing the Illuminating Power of Coal Gas.' 2. Mr. William Shelford, M. Inst. C.E.: 'On the Outfalls of the River Humber.'

ARCHITECTURAL ASSOCIATION.—On Friday, April 30, at 7.30, Mr. G. H. Birch, on 'The Domestic Architecture of London from the Sixteenth to Eighteenth Centuries.'

ASSOCIATED ARTS INSTITUTE.—On Saturday, April 17, at 8.15 P.M., Exhibition of Sketches.—Subjects: 'The Tempest,' Act III., and 'Found.' Discussion—Question: 'Is Competition a desirable Feature in Art Training?'

SOCIETY OF ARTS.—On Monday, April 19, at 8 P.M., John Anderson, Esq., C.E., on 'Applied Mechanics in Relation to Natural Properties of Materials.'

# The Architect.

## THE EMBANKMENT SITE FOR THE LAW COURTS.



Learn, with the greatest satisfaction, from Mr. Lowe's speech on Tuesday, that Her Majesty's Government has formed, and has by his mouth pronounced, the most decided opinion possible in favour of that site for the Law Courts which has been uniformly and steadily advocated in the pages of *THE ARCHITECT*—the Thames Embankment.

After a six hours' debate, the House adjourned the question for a month, but there can be little doubt, had a division been taken on Mr. Gregory's motion, what the decision would have been; while no shadow of a doubt as to the intentions of the Government was allowed to remain. Nothing could possibly be more uncompromising than the declaration made by Mr. Lowe, with the concurrence and in the presence of Mr. Gladstone and Mr. Layard; that the Government proposed to adopt the Embankment site. It is true the whole proposal as advocated in these pages is not taken up by the Government. Mr. Lowe accepts the frontage to the Embankment, but declines to touch the Strand. But this is simply because he also intends to contract the whole scheme, and to erect a smaller building than at present contemplated; and, therefore, as this building will only require a site of some six acres, the Government adopts that which is the essence of our proposal,—a frontage to the Thames, but they intend not to come further towards the Strand than the line of Howard Street.

We feel that the country is to be congratulated on this great success. We, and those with whom we have laboured, have had in many respects an uphill battle to fight; but the victory of good common sense over strong professional prejudice has been complete; and a most unexpected surprize accompanied it. The advocates and authors of the Carey Street site have suffered that kind of discomfiture which befel the Spanish Armada—they are wrecked and brought to nothing by a superior and irresistible force. *THE COVERS OF JUSTICE COMMISSION* is to be DISSOLVED; not, of course, on account of its selection of Carey Street, but on account of its extravagance, and the extent to which it has pushed what Mr. Lowe termed 'a frenzy for concentration,' and indeed because, in the opinion of Government, it has now discharged all the functions it was created to perform. The advocates of the Carey Street site, if they have heart left to continue the contest, will now have to make good their case, not before a tribunal of legal men—none the less professionally biassed that they are the heads of the legal profession—but before the Government itself, while the funds to be expended will be furnished from the Imperial treasury.

This in a few words is the result, but the course of proceedings in the House did not for hours give the least clue to the prospect of so startling a solution.

There were three notices of motion on the paper—Mr. Gregory's, advocating a reconsideration of the site with a view to occupying the Embankment; Sir Roundell Palmer's, negating this resolution, and substituting one to the effect that the additional land, if wanted, was to be bought adjacent to Carey Street; and Mr. Tite's, to the effect that a site for additional buildings should be acquired on the Embankment, and two distinct buildings should be erected.

Mr. Gregory began at five o'clock, and spoke for an hour. His arguments were the same with which the readers of this journal have been made familiar, and were based on the same facts. In one conspicuous instance, he quoted verbatim one of our attempts to put the kernel of the matter before our readers, and said that the struggle was 'Lincoln's Inn against All England.' Mr. Gregory wisely gave great prominence to the financial part of the advantages obtainable if the Embankment site were secured, and though his figures and estimates were attacked in every kind of way, they came out of the ordeal triumphantly, proving, in fact, to be below rather than above the real amounts as stated from official sources by Mr. Lowe. This part of the case caught the ear of the House, and was not forgotten through the entire evening.

Sir Roundell Palmer, who occupied fully a second hour, exhausted

all the arts of the advocate in his warm and, we had almost said, uncandid support of the Carey Street site; and yet, though the full House which had listened patiently to Mr. Gregory remained to hear out his long and painfully elaborated account of what would best suit the lawyers, he seemed to rouse little sympathy in his audience; and his concluding passages, in which he ridiculed the proposals of his opponents as 'the visionary dreams of dilettanti gentlemen' possessed of the 'demon of good taste,' well merited the severe rebuke administered by Mr. Lowe when he rose to speak.

For three more hours the debate was prolonged without much being added to the exhaustive speeches of the two leaders. Lord Bury and Mr. Locke spoke, and spoke well, in favour of the Embankment. Lord Bury's brief, emphatic, and pointed speech was especially a happy contribution to the debate. Mr. Beresford Hope supported the occupation of both sites, as proposed by Mr. Tite. After this Mr. Denman, and following him a succession of other speakers, advocated the legal side of the matter, and displayed that pertinacity in stating and restating what they did understand, and that easy and airy inaccuracy in handling what they did not understand, which seem inseparable from the eloquence of gentlemen of the long robe.

It was positively refreshing when some way on in the debate Mr. Tite rose, and in a few short, pithy, hearty sentences, greeted with a kind of running fire of cheering by the members, brought back the attention of the House from the details of legal convenience to the practical bearings of the question.

Lord John Manners, in the course of a long, not to say wearisome speech, contributed to the Carey Street advocates the remarkable argument that the buildings, if placed on the Embankment, would have so very had a foundation to stand upon, that their cost would be raised by no less a sum than half a million! It was in reply to him that Mr. Locke made the short speech we have already noticed, and by that time the attendance had rapidly risen, and the House, which the lawyer's speeches and the dinner-time hour had emptied, had become tolerably full.

When Mr. Locke sat down, Mr. Lowe rose, and began in a style which at once showed that serious business was in hand. He told the House that the whole matter of the New Law Courts had already engaged his most serious attention, and that he had already had to take upon himself heavy responsibility in respect of them.

He then explained that a statement had been laid before him very soon after he first took office, making out a total outlay, past and prospective, of 3,350,000*l.*, which Mr. Lowe considered might really mean 4,000,000*l.*, accompanying an application that 600,000*l.* of that sum might be advanced by Government to buy extra land. Then, reading the clauses of an Act which, with unusual measures of precaution, limited the outlay to one and a half million, he said, 'it seemed to me as if the ground had given way under my feet when we compared the two statements.'

To the proposal to advance this money Mr. Lowe said 'NO;' and he drew a humorous and perhaps overcharged picture of the excessive agglomeration of department upon department which had led to the vast increase of the proposed structure with which this increased estimate corresponded. Showing next that there was not really an available separate fund out of which to build the Courts, but that the money must in effect come out of the public purse, Mr. Lowe concluded by making the startling proposal that the Commission, which he considered had done its work, should be relieved of its power, Government undertaking the whole matter. Mr. Lowe went on to state clearly what the Government, if empowered to act, would do. It would adopt a site on the Embankment with Howard Street as its northern boundary, would build thereon a building of moderate size, and would take its time about selling the Carey Street property. We regret to add that the right hon. gentleman contributed as a suggestion of his own the notion that the elevation of Inigo Jones's design for Whitehall should be adopted for the façade of the new structure!

The not unnatural complaint of Mr. Henley (who moved an adjournment), that the House was taken by surprise, elicited a short explanation from the Premier. The adjournment seemed to be eagerly accepted both by him and by the First Commissioner of Works (Mr. Layard), and it is understood that a month hence, when the subject comes on once more for discussion, the Government is to bring forward its definite proposal.

So ended this debate, which was carried on in a way that cannot be considered as other than creditable to the good sense and judgment of the House. We believe the public advantage will be in the end served by the alteration now proposed, though loss of time is inevitable. We

believe, too, that the time will come when, either in consequence of required extension of the Law Courts, or to meet some other public want, that part of our proposals which had reference to widening the Strand, and rectifying its line of frontage, must be carried out, though it may perhaps not be in this generation. Of one thing there can be no doubt; the decision of Government to throw the weight of its enormous influence into the scale, will render certain the adoption of the proper site for this great public building. This will of course influence largely the decision to be taken as to the western part of the Embankment, and makes it reasonable now to hope that this great opportunity will be worthily employed, and that the northern bank of the Thames will be formed into an architectural feature unparalleled in Europe.

### OUR RAMBLER

IN AND ABOUT THE HOUSES OF PARLIAMENT.

[SECOND ARTICLE.]

THE Rambler left off his first notice of Sir Charles Barry's masterpiece with a reference to the Royal Gallery, where much new work, chiefly of a decorative character, has been recently carried out under his son, the present architect of the Palace. Leaving this fine apartment to proceed northward, or along the interior, one is more than ever struck with the absurd scale of the marble group by Gibson, which fills the whole view in passing from the Royal Gallery to the Throne Room. This room is small and *petite* in its parts, as compared with the chamber one has just left, and the figures of the Queen and attendant Virtues are colossal, out of all proportion, while the incongruity of the effect is only intensified by the white colour of the marble.

Will Mr. Edward Barry give ear to our petition, when we pray, in common with many other critics, that this group may be removed to the end of Westminster Hall? Placed under the great south window in that noble chamber, and crowning the flight of steps by which Sir Charles joined the Hall of Rufus to the Parliament House of Victoria, this work of Gibson would not only have justice done to it as a fine sculptural group, but the exigencies of scale and proportion would there be amply satisfied, while the historical proprieties of the place would be brought into harmony.

The Throne Room itself, denuded of this heavy marble group, would assume its proper effect. It is one of the most elegant apartments in the building. The very interesting and excellently-scaled portrait-figures of the sovereigns of England, painted by Mr. Burchett (the present head-master of the schools at South Kensington), give a highly decorative effect to the room. They form a kind of pannelled frieze, which holds its own as against many more recent and more ambitious efforts in mural decoration.

Of the House of Lords it is unnecessary to speak. The Rambler has seen some of the more conspicuous among the legislative chambers of Europe, but none to compare with that at Westminster, which seems thoroughly to embody, in its general design and detailed decoration, the historical traditions of an old nation. We should judge, from some remarks made incidentally in the late discussion on the new House of Commons, that the day is not far distant when some reconstruction of the Peers' Chamber must be made for the accommodation of the Commons, who may have occasion or desire to visit the Upper House. The present 'bar,' to which Her Majesty's 'faithful Commons' are bi-annually summoned, is most literally named, for it resembles nothing so much as a prisoner's dock or a witness-box in any of our law courts.

The Rambler in the House of Lords could not suppress a hope that Mr. Barry may adopt the same happy treatment of the figures which occupy the niches between the windows, which has been applied to those in the Royal Gallery. The gilding of the statues would not only give a more sumptuous appearance to the chamber, which the present dark mass renders somewhat dingy and sombre, but would give a prominence to the figures themselves, which, both in their subject and treatment, they fully deserve. Their dark bronze effect, as they show at present, places them at great disadvantage between large surfaces of brilliantly-coloured glass.

The House of Commons, in its more sober character, seems to develop some of the spirit of the old sumptuary laws, when compared with the gorgeous chamber which has been allotted to what may be classed as the patrician element in the Constitution. The distinction, however, is not one which can offend the average English instinct, for it is most truly said that 'John Bull loves a lord;' and the superior style in which the peers are housed at Westminster only expresses that national affection for the lordly character.

Apart from criticism of this kind, the House of Commons is, in the Rambler's estimation, the more perfect of the two Chambers in an architectural aspect. It appears, however, to possess the fatal blot of very insufficient accommodation for the 658 members who have a right to seats in it. Nothing can be more absurd than to visit this defect on the architect, for it seems he only obeyed his clients in shaping the dimensions of the House. Barry is not the only architect who has been made the scapegoat of mistaken instructions. If his son and successor is to be engaged in the reconstruction of another and larger House, we hope he will follow, as religiously as possible,

the general design and architectural character of the present one, even down to details. We mean detail of design, not of arrangement; for we should be sorry to see, in a new and more commodious House, such scanty accommodation for the outer world as the present Stranger's Gallery affords. We should still more regret the perpetuation of the 'Ladies' Cage,' which, when filled, is dreadfully suggestive of the Zoological Gardens. We say this, of course, with all respect for its fair occupants, whom, indeed, it is impossible to distinguish there as human beings, not to say as ladies. It is no slight reflection on the gallantry—nay, the civilisation of the nation—that we should confine the fair visitors to the House of Parliament within the bars of an unlit cage. Parliament means a place for talk, and it is surely penalty enough to condemn the gentle sex to *silence*, without superadding the deprivation of sight and sound. It may be that the present arrangement was resorted to from a somewhat exclusive consideration for the feelings of susceptible members, whose effusions may be apt to become disturbed by too prominent a display of the fair element of creation. Such an idea speaks badly for our modern gallantry, as compared with those chivalric times when men were moved to their highest deeds of prowess by the presence of fair women. In sober truth, the arrangement of the 'Ladies' Gallery' in the present House is much more suggestive of Oriental than of Western civilisation.

Leaving the 'Houses' proper, we find our way downwards to the Crypt or St. Stephen's Chapel. The restoration of this historical fragment as an integral part of the Houses of Parliament is as creditable to the architect who has controlled it, as it is to the 'powers that be' who commissioned it. The only element of difficulty attending a work so complete and admirable is the speculation as to its probable future use. There will be small credit due to the religious and churchman-like feeling of our legislators if they allow so beautiful a chapel to become a mere 'fancy' work for the delectation of Saturday visitors to the Palace.

Coming outside, and into New Palace Yard, the Rambler was naturally attracted to the new works which Mr. Edward Barry has designed in this quarter. The arcade recently built as a convenience for communication from the Embankment to the Palace—chiefly intended, we presume, for City members of the House—is certainly not a work which can be honestly praised. It has nothing to do but to carry itself, and yet its scale and masses of material are more Egyptian than Gothic. It is difficult to understand why such Cyclopean proportions were resorted to for a mere passage, while the result is such as to dwarf the façade which runs from the Clock Tower on the east side of New Palace Yard. A structure composed entirely of metal and glass could have been erected with as much regard to architectural style; and by proper design adapted to the material much of the unfavourable criticism which one hears on the work as it stands, might have been prevented.

The new boundary railing, in metal chiefly, which defines New Palace Yard, is also a fair subject for criticism, and has already been referred to in these pages. The stone piers which occur at intervals in the length of the high and cleverly designed metal railing are a mistake from first to last, and nowhere look more absurd than at the entrances, where they jumble together at points at which, in the case of a stone construction, they would have been most obvious and appropriate. If the same treatment which has been adopted for the lamp pillars on the space westward, adjoining St. Margaret's Church, had been adopted here, the effect of the railing round New Palace Yard would have been consistent as to material and much more agreeable as to design.

There is more serious criticism to be made on this arrangement of solid stone piers in street railings. A more aggravated form of the same evil is to be found at Charing Cross Station, where foot passengers in the Strand are hourly placed in peril of their lives by the impossibility of seeing the cabs or carriages which necessarily come pretty rapidly down the slope from the station to the Strand. As if stone piers were not obstructive enough to sight, small houses have been built at either gateway. It is not difficult to foresee serious and fatal accidents resulting from this treatment of carriage-ways in our public thoroughfares.

The statues which fill the niches in the stone arcade which extends from the Clock Tower to the Commons' Entrance, are not such as one can speak of with unmixed admiration, though their author, Mr. Armstead, is admitted to be a sculptor of original, not to say daring ability. His work has the recommendation that it is never common-place; but in that very quality lies the danger of its failure. The reader will judge for himself (apart from any criticism which the Rambler might be disposed to offer) what actual value should be placed on this series of figures representing grand historical personages.

Within the precincts we are speaking of, another statue, and by Marochetti, was placed, intended to represent the late Sir Robert Peel. It made its appearance in New Palace Yard, in a place of honour, at the very entrance to the precincts of the Legislature; and before the outside public had had time to see it, it was condemned to removal and oblivion; nay, to total destruction; for we learn that it has been in great part melted up to supply the material for Mr. Woolner's new statue of Lord Palmerston! 'Peel est mort! vive Palmerston!' will be the cry which must be expected to salute the coming statue of the late popular Premier. And yet, if rumour be true, the same kind of treatment, in a sculptural sense, which in-



curved the dismissal of Peel, has been adopted in the design of the statue of Palmerston. The figure of Peel, as far as head and features may be considered, was probably true enough as to artistic portraiture; for the rest of it, we all saw that it was conceived and modelled on a pattern which the artists of Saville Row must have envied. Coat and trousers were represented in the most unexceptionable cut, while the boots of the period were tenderly imitated. What was the result of all this 'naturalistic treatment'? Every man who passed this 'realistic' figure during a wet and stormy day—a condition of climate not very uncommon with us—naturally felt that the figure of Sir Robert Peel should at least have had a hat upon his head. The sculptor, however, evidently did not dare to venture so far as that. So, in the absence of that necessary appendage for personal comfort, the conscientious display of superfine broadcloth only suggested ideas of bronchitis or rheumatic fever to every passer-by, who, it may be supposed, or hoped, was much more seasonably costumed. There was no real *art* in such sculptural treatment as this, and the popular instinct rapidly discovered it. Hence the consignment of the figure to the melting-pot without protest or discussion. Some useful inference may be drawn on this point by a reference to the statue of George Canning, which stands not far distant from the position which that of Peel occupied. A conventional, as opposed to a 'realistic' treatment of the subject, was employed in that case. There was no attempt at tailoring, and so the statue remains as a worthy memorial of an historical personage, which is not a whit the less real in its true meaning, as a public statue, because its author ignored all consideration of coat and trousers. This is a subject to be laid to heart by the apostles of that 'naturalistic' school of sculptors whose 'initial force' is so highly lauded by friendly critics in these days, and whose works, ignoring the intrinsic beauty of simple *drapery*, apart from fashion, threaten to bring our public statues into a phase of caricature from which the boldest of living celebrities would shrink if he could possibly foresee his living presentment modelled into the 'realistic' mould which marked the departed statue of Sir Robert Peel.

From New Palace Yard and its accessories the Rambler crosses over the road to the newly formed enclosures, supplanting the begrimed and stunted efforts at vegetation which were called trees formerly on that spot. Mr. Barry and the Office of Works have laid the public under a debt of gratitude for the improvements which have been effected in this locality. The fine, healthy-looking, open space now railed round by way of affording convenient thoroughfare, is an appropriate adjunct to the more imperial conveniences which have been demanded by the Houses of Parliament on the other side of the way. The new enclosures are evidently designed to receive flowers, and generally to be rendered pretty and ornamental—qualities which are rare enough in the external aspect of our cities in these utilitarian times. If the spaces now railed round north of St. Margaret's Church are to be looked on as a sort of flower-garden, the design of the iron work becomes very natural and good; as a mere railing it has a novelty of effect which scarcely recommends it.

To recur to the 'Houses' themselves, one cannot but regret that the equestrian statue of *Coeur-de-Lion* in Old Palace Yard was ever placed in such proximity to the building. The scale of the one is so utterly out of all proportion to the other, that Sir Charles Barry's work is reduced by *Marchetti's* to the appearance of a one-storied building. Of the sculptor's work, *per se*, one cannot speak too highly. It has a very noble character, and it is one of the few equestrian groups we know in which the historical personage looks rather the master than the servant of the horse. In the case of the ever-to-be-remembered statue of 'The Duke' at Hyde Park Corner, the figure has much more the character of a groom—cocked-hat notwithstanding—than of 'the hero of a hundred fights.'

Wandering 'in and about' the Houses of Parliament, the Rambler could not help asking himself whether the public, so called, ever dream of the work, intellectual and physical, which the architect of such a building must accomplish before even a single brick is laid. Such a query raises a matter on which the popular mind is, not only profoundly, but cruelly ignorant. The mere fact that Sir Charles Barry produced, from his own hand, more than one hundred different drawings, *to scale*, for the Clock Tower alone, should give our non-professional readers some conception of the enormous expenditure of mental and physical life which is entailed by the design and supervision of such a building as the Houses of Parliament.

#### OPENING OF THE WEDGWOOD MEMORIAL INSTITUTION, BURSLEM.

THIS building, which was illustrated in our last number, was opened on Wednesday by Earl de Grey and Ripon, with much *éclat*. An Exhibition of works of art, deposited on loan by various private contributors and the South Kensington Museum, has been established in the building, and the ceremony of Wednesday consisted in a public presentation of addresses and the formal opening of this Exhibition, followed by a luncheon in the building.

The day was fine, and a large concourse of visitors was assembled, while the greatest interest was evidently taken in the proceedings by the inhabitants of the town.

The address, and Earl de Grey's reply, touched upon the subject of primary education as essential to form the foundation of all good

training in art schools, and the same subject was more than once referred to in the very interesting speeches at the luncheon. Mr. Adderley and Mr. Cole both spoke excellently well; and a long and interesting speech by Mr. Smiles was listened to with marked attention. The other speakers included Sir E. M. Buller, Mr. Melly, Colonel Roden, Mr. W. S. Allen, the architect of the building (Mr. Edgar), the chief bailiff (Mr. Hulme), Mr. Davis, Mr. Davenport, Mr. C. M. Campbell, Mr. Wedgwood, the indefatigable Secretary (Mr. Woodall), and Mr. Roger Smith. But the speech of the morning was, of course, that of Earl de Grey, who spoke at some length, and with an earnestness, force, and judgment which well became his position as a member of the Government and as chairman of the meeting.

The building has been so recently illustrated in our columns that we shall not need to attempt any criticism or description of its original and effective exterior. Of the interior it may suffice to say that it appears excellently contrived and well-built, and that the unusually good lighting of the pictures and other works of art was referred to in the very highest terms of praise by Earl de Grey and others.

Of the Exhibition itself we can speak with great satisfaction. As was to be expected, a large and very choice collection of Wedgwood-ware forms a prominent feature in it. Seldom, if ever, has a more copious series of illustrations of the best work of our greatest potter been brought together; and a small selection of other specimens of ancient and modern pottery, including some fine Worcester, is also exhibited. A display of metal work (including the famous treasure of Petrossa) and of various other branches of art workmanship has also been got together, to which South Kensington has contributed largely. As there is, in addition, a good though small collection of oil paintings (including a fine Gainsborough), and another of water colours, it will be seen that this Exhibition is very complete, and speaks much for the energy and diligence of those who have got the various objects together. It is proposed to keep the Exhibition open three months, and at its close the regular work of a school of art will be commenced in the building. We heartily wish it success.

#### ARCHITECTURAL DRAWINGS AT THE INSTITUTE OF PAINTERS IN WATER-COLOURS.

THE annual Exhibition of this Society, formerly known as the New Water-Colour Society, opened this week in Pall Mall. This exhibition is always of interest to architects and lovers of architecture, because it is the one selected by several painters who habitually choose architectural subjects for their pictures.

Want of space compels us to postpone all examination in detail of the works of this class exhibited here this year. We must content ourselves with remarking generally, that while grand architectural subjects are fewer in number than they have been, there are yet enough exhibited to make the gallery well worth a visit to any architect. The veteran Louis Haghe heads the list with a fine interior of St. George's Chapel, Windsor, and sends some other subjects, which, though less ambitious, are hardly so successful. Carl Werner exhibits several subjects, the one most likely to attract being an Egyptian moonlight scene; though for powerful rendering of architecture this picture falls behind another effort of the same artist, in which the entrance to a mosque is given with all the force of nature. A fine view, also by Carl Werner, of the 'Castle of Chillon,' several sketches by Skinner, Prout, and contributions by Deane, Cattermole, and one or two other artists, who understand and care for buildings, enrich this exhibition, even if regarded solely from an architectural point of view.

#### BELLEEK PORCELAIN.

THE eighteenth century was the great period for the establishment of schools of Ceramic art. Not that the actual progress then made was more marked than that which has distinguished the manufactures of our own country, as well as of France, since 1851; but the characteristic of the modern advance has been development rather than originality. As the three famous divisions of Grecian ware mark a long course of connected labour rather than a series of distinct efforts, so the beautiful productions of Minton and of Copeland are more instinct with talent than with genius. But in the last century manufactories were reared by Royal care, and systematic efforts were made, in different kingdoms of Europe, to establish these national sources of wealth. The Dresden manufacture dates from 1706 for the soft ware, and from 1715 for hard porcelain. The Capo di Monte manufactory was established by Charles III. (Don Carlos), in 1730. The soft Sèvres porcelain was first manufactured in 1740, and the hard, or true porcelain, in 1769. The factory of Buen Retiro, near Madrid, owes its origin to the same prince who endowed Naples with the factory of Capo di Monte, and dates from 1759. The great English potter Wedgwood, about the same period, did as much for the Ceramic art in England as was effected by either of its Royal patrons on the Continent in their own dominions, and originated as distinct and admirable an order of *faïence* as that of any earlier artist. Nor should we omit to refer to the various schools of old English china, the productions of which are well known to amateurs as the work of Chelsea, Derby, Plymouth, Bristol, Rockingham, New Hall, Worcester, and Colebrook Dale.

As we retrace the history of the potter's art, we find the impress of original genius to be more and more decided. Bernard Palissy, who

covered his dishes and plates with reptiles, fish, and crustacea that almost counterfeited nature, died in 1589. Madame de Hangeat, under whose auspices the ware made in her Château of Oiron, near Thouars, known as the 'Henri Deux faience,' became famous, died in 1537. Luca della Robbia, the inventor of that embossed and enamelled ware known by the name of his family, died in 1481. Maestro Giorgio, the most celebrated manufacturer of the iridescent majolica, known as the ruby lustred ware (the secret of which died with him), lived between 1470 and 1552. Thus in pottery, as in so many other branches of human art, history records the advance of general excellence, accompanied by the increasing variety of individual or creative genius.

A regard to these considerations leads the lover of art to welcome with the greater heartiness such a phenomenon as the establishment of a new school among ourselves; and no lover of England, whatever be his nationality, can fail to experience the utmost satisfaction at the announcement that it is in that portion of the British Isles to which we look with the greatest anxiety that this new school has been established. The Belleek Pottery, to the productions of which we now call attention, is situated on the confines of Donegal and Fermanagh, in the vicinity of Lough Erne.

It was during a stroll through the South Kensington Museum that the eye of the writer fell on one or two specimens of earthenware altogether unlike any other articles in the long ceramic series exhibited in that place. They stood modestly apart in one of the cases of the portion of the building devoted to the loan collections; and it was only by an investigation of the written labels that one arrived at the conclusion that the graceful specimens were products of the skill and taste of the Ireland of to-day. The first impression produced on the mind was, that some very fine shells of the nautilus, or some congeneric mollusc, had been mounted in china. Then it became clear that the brilliant iridescence of the ware was the work, not of Nature, but of the art which had caught from Nature one of her most inimitable perfections.

In chemistry, indeed, we rather guide and control, than attempt to imitate, the productions of nature. We produce a natural effect by following, as closely as possible, the procedurè of the great Artificer. To cause an iridescent lustre by any mechanical process would be pure imitation, although even this has to some extent been effected by machine engraving on steel. But to compound and burn in such a flux as that which coats the Belleek porcelain with an indestructible nacre, is only to call in the aid of Nature herself to simulate some of her most delicate works.

The material employed in the Belleek porcelain is a fine white felspathic local earth, almost identical with the basis of the ware of China itself. On the borders of large granitic formations, the several elements and constituents of this ancient rock are often to be found in a state of disintegration. Delicate variations, which it is hard for the chemist to detect, make all the difference in the adaptability of the various forms of what we generally term felspar for the work of the potter. In this case it happens that slightly dissimilar productions are found in such close proximity, and in such rich abundance, that the most famous wares of the East and of the West may be closely reproduced at Belleek, while, at the same time, a class of porcelain has been perfected which is peculiar and unique.

This Irish porcelain is of a pure creamy white. The surface is either that of the finest biscuit, or that of mother-o'-pearl. The two methods of finish, that with and that without the iridescent gloss, may be combined, and that with the happiest effect. Figures in biscuit may project from an enamelled background; or lustred forms may be relieved on dead white. Gilding is readily introduced with more or less profusion.

The artists employed at Belleek have rather followed those of the old Plymouth china than any other masters of their craft. Shells and sprays of coral are reproduced with a fidelity to nature that is almost magical; the peculiar lustre of the ware giving a truthfulness to the representations of these natural objects such as has never before been attained by the Ceramic art.

The Belleek designer has the further merit of having laid under contribution, as affording models, a branch of the great Fauna of our planet which has hitherto been unaccountably neglected. Shells and corals have been long seized upon by the artist, both as affording a material for camei and other ornaments, and as yielding graceful forms for the imitations of the modeller. But the novelty of the Belleek designs is, that they are taken from among the Radiate animals. It is only necessary to reflect on the enormous variety of forms which this great province of Zoology comprehends, and the wonderfully fantastic and yet symmetric figures into which some of the echinadæ and asteriadæ run, as it were, *into flower*, to see that an endless store of beautiful forms is here offered to the artist. A few only, and these extremely well selected, have as yet been reproduced in porcelain, but the capabilities of the field are inexhaustible.

One point of critical value should be insisted on. The only inferiority we have as yet observed in the Belleek ware arises from a neglect or an ignorance of a very simple canon of art. Few things are more certain to preclude a work of art from receiving permanent admiration than **CONFUSION OF SCALES**. In sculpture this is eminently the case; and the Belleek ware almost pretends to the dignity of sculpture. Neglect or confusion of scales is a sure mark of the decadence of art. We have a well-known instance in the inexplicable confusion of the elements of the group known as the *Tro Tro Farnese*—a piece of sculpture of which the workmanship is as wonderful as the design is perplexing and faulty. We have an approach to the same fault in the Laocoon. In some of the Belleek articles we have this fault in its most rampant form. A dolphin, or a triton, or a nereid, very gracefully modelled, as a single figure, is represented as supporting the shell of a sea urchin, or some well-known univalve, rather larger than itself! The effect may be very well for the uneducated eye; but when once pointed out, it is shocking and inexcusable. We insist on it with the more urgency because, unless it is at once admitted and abandoned, it will prevent the attainment of that permanent degree of merit and of excellence which, in almost every other respect, this beautiful earthenware may justly claim.

The only articles which, with the exception of this grave sin against the laws of design, are other than admirable, are one or two very poor statuettes,

in which the hands and feet are out of all proportion. On the other hand purely conventional forms, such as Greek vases, or simple natural forms, such as shells and corals, are rendered with a truth and beauty deserving of the highest encomium. It is only the guidance of the eye and of the rules of the sculptor that is required in order to enable this new Irish ware to take a very proud position among the ceramic products of our own or of any other country or age.

Specimens of the same ware may be seen at Messrs. Mortlock's, in Oxford Street. Dessert and tea services have been ordered by Her Majesty the Queen and by H.R.H. the Prince of Wales. The Belleek ware only needs to be known in order to become highly popular.

### TURNER'S LANDSCAPES.

THE interest still felt in Turner's art has been tested during the past week by the sale of a portion of Mr. Ruskin's collection of sketches at Christie's, together with one finished drawing belonging to another property; and the day after, by the sale of Mr. Dillon's collection, including many of his very finest drawings. It has often been a matter of speculation in late years whether the high prices which Turner's works have at different times reached in public sales would be maintained if a large number of them were to be again exposed to competition. The answer has now been given. Of thirty-nine mere sketches thus sold, the average price was nearly 40*l.*; a finished drawing of the early period went for 350*l.*, and the well-known 'Lucerne' for 980*l.*—prices which works of the same class, scale, and finish have perhaps never reached before. Mr. Ruskin's property was certainly sold at a great advantage, being accompanied by critical descriptions from the owner; and the prices did, in most cases, follow the guidance thus provided for purchasers. In the whole number of pictures which have been visible at Messrs. Christie and Manson's there are some which call for special notice, and suggest reflections which we shall attempt to make as brief as possible.

We wish to ask, is the admiration indicated by the prices paid for Turner's water-colours honestly felt by most of those who profess it? We ask this especially with reference to the works of the so-called 'middle' and 'later' periods. If the world really enjoys these works, the ordinary motives of human action will set many of our younger artists at work to imitate them. What cannot be denied, but stares every one in the face who considers them, is that they show extraordinary ability, a profound knowledge both of nature and art, and an imagination of the highest order. These things are past question for every one who is competent to judge in such a matter. It is no less evident, however, that they are the results of a bold experiment, or rather of a series of bold experiments, in pictorial art. As Mr. Ruskin has abundantly shown, they depart from all precedents in several respects, but in none more than this, that they set aside all the conventional limits prescribed by traditional systems of light and shade and of colour.

The gradations of light and the modulations of colour being infinite in nature, and contrasted with each other for the most part by indistinguishable refinements, this great artist set himself to reflect that infinite delicacy by a directly corresponding treatment. So many square inches of surface being given on which to picture the coloured surface presented to the eye, he represents the highest light by passages of white or bright yellow, and modulates downwards from that, following as faithfully as possible the subtle changes of nature, and purposely disregarding the consideration that on this scheme it will be impossible to display the contrasts which the luminousness of light produces in nature. By the conventional system of treatment, on the contrary, this contrast is broadly expressed. The painter knows that his light falls far short in brilliancy of that which it imitates. But he recognises the aim of setting before us that which is, after all, the main impression made by the varieties of light on a coloured surface—viz. that of a contrast in masses between light and shade. With this view, he must, at any rate, reach the shade, and to do this it is necessary to neglect many of the slighter modifications which fill the interval. The inferior limit of the scale at his disposal is the same as that which nature employs—absolute black, corresponding to the absence of all light-rays, if that were possible, from any portion of the coloured surface seen by the eye. But in the superior limit nature has—not a relative, but an absolute superiority, which extends downwards in a diminishing ratio—the luminousness of open-air light being unapproachable by any pigment. As an illustration of these remarks, we would compare the magnificent drawing of 'Norham Castle,' painted before Turner had begun these revolutionary experiments, with—to take one example among many—the sketch 'On the Rhine,' No. 24 of Mr. Ruskin's set. The former has two centres of grave and intense light—the glowing west and the lake's responsive surface traversed and environed by shadowed masses over which the mystery of their presence moves with calm swiftness of retreat. The sketch, 'On the Rhine,' was an attempt, it is true, at something very different, but it was an attempt at something which could not be attained adequately for the purposes of enjoyment. Where the light falls, the landscape is of a singularly bright pea-green, with shadows of brick red. The shadowed part is in the same key of red, and the sky—the really luminous portion of every view—is dingy by comparison with the gaudy lines of earth. Here is conventionality, though of another kind from that which is rejected. Shadows are never brick-red to the eye, unless on a scarlet surface; but it is true that they must be so represented if your highest light happens to be a bright green, and you refuse to miss even the slightest step in modulating downwards. If it should be objected that the 'Norham Castle' gives an evening effect, and the sketch one of full daylight, the finished drawing of the Lake of Briens might stand instead of the former; though it appears to us less excellent in work. We cannot think that the ordinary picture-buyer would hesitate between the older conventional system of treatment and this strange later manner of Turner, which is unlike anything in art before or since. Nothing but the eloquence and insight of a true enthusiast as well as profound critic could have interpreted those dark sayings to the ordinary sense.—*Pall Mall Gazette.*

## OPENING OF FREEMASONS' HALL.

**T**HE NEW FREEMASONS' HALL, in Great Queen Street, Lincoln's Inn Fields, was, on the 15th inst., the scene of a very imposing ceremony—that of the dedication to the Order of Ancient, Free, and Accepted Masons of England of the new grand hall and offices. The hall is a fine building, and presented a gorgeous sight when opened for the first time in a Grand Lodge. None except full Master Masons, in craft attire, were allowed to be present, and the Grand Master, when seated on his throne, was surrounded by upwards of a thousand officers of lodges from all parts of the United Kingdom. The addresses relative to the building were heard, and then a choir chanted selections from the chapters of Solomon's dedication of the Temple, 'I have built thee a house to dwell in,' &c. The dedication in solemn form was then proceeded with, according to ancient rites, with corn, wine, and oil, and the Grand Master proclaimed the building to be dedicated to pure Ancient Masonry. The Grand Chaplain (the Rev. Robert J. Simpson) delivered an oration upon the Order; an anthem was chanted by the choir; and the Grand Lodge procession having re-formed, the distinguished column left the Hall in the same order in which it had entered. The Architect of the Hall, and the whole of the buildings connected therewith, is Mr. F. P. Cockerell.

## THE STRIKES IN THE BUILDING TRADES.

**T**HE masons of Manchester are still on strike, and, as a consequence, many bricklayers have had to be discharged. All the important new buildings are suspended, and large numbers of joiners and men employed in the other branches of the trade will necessarily have to be discharged if the strike continues. The masons of Coventry are now on strike, and notices have been given in twenty-six other towns, which, it is expected, will lead to similar results. The end of the month of May will probably witness more strikes in the building trades than ever have been known at one time before, the chief point of dispute being a determination on the part of the employers to pay the men by the hour. This system has been acted on in London for some years, but has been resisted in the provinces, the men preferring to be paid by the day, which every now and then has been shortened, until an attempt is now being made to make the working time forty-eight and a-half hours for the six days, only a few minutes over an average of eight hours a day in summer, and of course still less in winter. The towns in which notices have been given include Bolton, Bradford, Halifax, Liverpool, Leeds, and York. Most of the notices expire on May 1 and 3, with the exception of that of Liverpool, which expires on the 22nd of that month.

An attempt is to be made to settle the dispute in the Manchester building trade by arbitration, and Mr. Rupert Kettle has consented to act with the endeavour to bring about an arrangement. All agitation on either side is to cease pending the inquiry.

## PARLIAMENTARY PROCEEDINGS.

## Kensington Sick Asylum District.

On April 15, Mr. J. TALBOT asked the President of the Poor-law Board whether it was his intention to recommend the dissolution of the Kensington Sick Asylum District; and, if not, how soon it was likely that the plans for that asylum, which were submitted to the Poor-law Board for their approval in December last, would be approved.—Mr. GOSCHEN replied that the Board had no power to dissolve a sick fund district, but such powers were asked for in the Bill introduced for the amendment of the Metropolitan Poor Act of 1867. With regard to the plans for the Kensington Asylum, a site had been offered for 15,000*l.*, and a further expenditure for drainage, enclosure walls, and so forth. It had been represented to him that that expense might be saved by utilising the land at present belonging to the Kensington and St. Margaret's, and St. John's, Westminster, boards of guardians, and the delay had been occasioned in the endeavour to secure their co-operation with that object.

## Waterloo and Whitehall Railway.

On Friday, April 16, Mr. GREGORY asked the President of the Board of Trade whether his attention had been called to the piling in the river Thames between the Charing Cross Railway and Westminster bridges; and whether he could state when it would be removed, or who was responsible for the continuance of it.—Mr. BRIGHT replied: I believe that no Government department has at present any power to deal with the obstruction. The piles are connected with the works of the Waterloo and Whitehall Railway, and the time permitted to that company has been extended to July, 1870. Until that time no one can legally interfere with the piles; but after that date it will be in the power of the Board of Trade and the Conservators of the Thames to take steps for their removal.

## The Metropolitan Railway Bill.

In the House of Commons, on April 16, there was a short debate on the Metropolitan Railway Bill. Mr. Sheridan succeeded by a majority of eight (175 to 167) in carrying a clause repealing the exemption in the Act of last year, and compelling the company to provide smoking carriages in each train, but this decision has been since reversed.

## Durham County Courts.

On April 16, Mr. HENDERSON asked the Secretary to the Treasury if he was aware that 2,000*l.* was paid two years ago for a site on which to erect suitable offices for the county courts in the city of Durham, and that the present premises did not contain the requisite accommodation for transacting the business of the district, and if he would state when the erection of the new offices was likely to commence.—Mr. ARNOLD was sorry to say that he was aware of the facts mentioned by the hon. member, which rendered it necessary for him to introduce an item into the Estimates for the

present year. The buildings would be entered on as soon as the money was voted, and they would take some time to construct.—On the 17th inst., in reply to a question, Mr. ARNOLD stated that a sum of 2,000*l.* will appear in the miscellaneous estimates for the erection of the said offices.

## Irish Monuments.

On Tuesday, April 20, Mr. AGAR-ELLIS asked the First Commissioner of Works whether Ireland would be included in any measure he might bring in for protection of ancient monuments, as indicated in his answer to the hon. member for Buckingham on April 2.—Mr. LAYARD said the Commissioner of Works had no control or jurisdiction in Ireland. The monuments there were under the Treasury. He was aware that there were many important and interesting historical works in Ireland, and he should be very glad if anything were done for their preservation. He had received many communications from Ireland on the subject, and particularly one from Lord Talbot of Malahide, who offered in the kindest way to be of what assistance he could in preserving those monuments. But he must repeat that the question did not rest with him.

## The Site of the New Law Courts.

On Tuesday, April 20, Mr. GREGORY having presented a petition signed by 7460 persons in favour of placing the new Courts of Justice upon the Thames Embankment, moved, 'That in the opinion of the House it is desirable to reconsider the question of Carey Street as the site of the new Law Courts, inasmuch as the Thames Embankment between the Temple and Somerset House now offers many advantages for the erection of such buildings.' The petition presented had been signed by 560 members of the learned professions, by 131 gentlemen, by 591 clerks, by 733 persons of the building profession, and by 2840 tradesmen. Petitions in favour of the Embankment site had also been presented by the Middle Temple and by the Inner Temple in their corporate capacity, while the benchers of Lincoln's Inn had not presented any petition in favour of their site. This was the best reply to all the audacious paragraphs and assertions which had been inserted in pamphlets and sent round to hon. members. The gentlemen of Lincoln's Inn said that both branches of the legal profession were nearly unanimous in favour of the Carey Street site, and that as the funds were supplied chiefly by suitors, it was unreasonable that the site should be changed in opposition to the wishes and interests of the suitors. The real truth was that the opposition to the change of site originated, not with the mass of the legal profession, but with the Lincoln's Inn solicitors. That was the whole story. He wished to remind the House that the motion he brought forward pledged the House to reconsider this subject, and served to express this opinion, that the Thames Embankment presented great qualities and advantages as the site for the New Palace of Justice. He did not advocate any committee or Royal commission whatever. He thought they had information sufficient, and he was content to leave the matter in the hands of the Government. The structure of his motion offered no impediment to those gentlemen who thought that a portion of the Law Courts should be on the Carey Street site, and a portion on the Thames Embankment. That was advocated with great force by his hon. friend the member for Bath (Mr. Tite), and he believed his hon. friend the member for Cambridge University (Mr. Beresford-Hope) was of the same opinion, as he advocated a high sky line, and lofty towers carrying the eye along the Strand. These advantages might all be realised if the House accepted his resolution. The Court of Probate and the Register Court would require a large building with lofty towers, and they might be placed in the exact position which his hon. friend required. Great stress had been laid on the subject of concentration, and he agreed in the importance that was attached to it; but they must remember that contiguity would answer all the purposes of concentration, and that the fact of the courts being separated by the breadth of the Strand, with a sub-way connecting them to pass through which would be the work of seconds, not of minutes, would not militate against the scheme of the commission instituted by Sir G. Lewis. For himself, he preferred such a scheme to that great building which the commission contemplated, that terrible pile which weighed upon the imagination like a nightmare. No doubt they would now be told that they had no right to re-open the question. But he contended that the Government had already advanced considerable sums of money on the site, and they were bound to see that it was laid out to the best public advantage. By the Act of 1865, constituting the commission for building the courts, it was provided that the compulsory powers contained in the Act should not be exercised till a certificate was given that the whole cost should not exceed 1,500,000*l.* Of this sum, 1,000,000*l.* was to be advanced from the suitors' fund, and 500,000*l.* from the Government. But that estimate had proved greatly below the mark. The certificate was given, but fresh demands were constantly made. He did not blame those who were originally responsible for this estimate, for new offices had since been added. But he reminded the house that Parliament had already been called upon to sanction an additional vote of 700,000*l.*, and that was only the beginning of the expense. The Thames Embankment had never been considered when the present site was determined on. There were only Westminster, Lincoln's Inn, and the present site in competition; and he was bound to say that of these three sites, the selection actually made was the right one. With regard to the expense there could not be a doubt that the country would reap the benefit of an enormous saving by the adoption of the Embankment site. The money already expended on the Carey-street site taken along with the costs was very nearly 850,000*l.*, while the additional sum required was 700,000*l.*—thus making 1,550,000*l.* as the cost of the site alone before a single brick was put into the ground. But then there were the approaches. It was agreed on all hands to be necessary that the Law Institute must be removed. Mr. Street, the architect, was of that opinion, and he put down the expense at 100,000*l.* Then, on the north-west end of Carey Street there was the King's College Hospital, which dominated the site, and so close was it that Mr. Street had actually been obliged to cut off an angle of his own plan in order to effect a separation between them. Everybody knew that, sooner or later, the hospital must be removed. However, he would not estimate that—he would leave it in futuro, though he felt satisfied that for the purposes of air and light



the hospital would require to be removed. But then he came to matters that were absolutely necessary—to the fresh approaches that would be required for the Law Courts. Mr. Street had made a carefully prepared report on the subject, accompanied with plans, and he made new approaches part and parcel of his scheme. He stated that while the greater portion of the persons attending the courts would come from the Strand, the judges or those who held high station connected with the courts would probably come from the west, or would enter the building from the north-west by Carey-Street, so that it was essential, in his opinion, that important alterations should be made in the roads on the north-west agreeing with the site. Mr. Street accordingly laid down four such roads, and the expense of them he estimated at nothing less than a million. But he had not touched the approaches from the City side, though a portion of the business and of those who attended the courts would come from the City. Mr. Street had now modified his views and given it as his opinion that the existing approaches would be enough for the present, but he (Mr. Gregory) would pin him down to that one word in his report, that these alterations were 'essential.' As an additional authority he might cite the opinion which had been published as a parliamentary paper, given by Mr. Shields, the civil engineer. There was much in Mr. Shields' paper of a speculative character with which he did not agree, but he was emphatic in his opinion that the great defect of the Carey Street site was its want of leading thoroughfares on the north-west side, and he proposed a new street which would lead from Carey Street by Lincoln's Inn Fields to Farringdon Street and St. Paul's. Mr. Shields put the expense of the approaches from the east at 600,000*l.* Now, the *résumé* of the whole was—for the Carey Street site, without a brick being put upon it, there had already been expended 850,000*l.*, and there was required 700,000*l.* The Law Institution would cost 100,000*l.*, the approaches from the west would cost 1,000,000*l.*, and the approaches from the east 600,000*l.*, or altogether 3,250,000*l.*, as the total cost of the Carey Street site. On the other hand, if they took the Thames Embankment they knew that the cost of the site would be 1,500,000*l.* The houses on the Strand side would no doubt be costly, but the houses towards the river side were of an inferior description, and would be had cheap. In fact, nobody estimated the cost above that amount. So that the question here was the difference between 1,500,000*l.* and 3,250,000*l.*, making a difference of 1,750,000*l.* for the Chancellor of the Exchequer. As to the approaches, they had got all that required to be constructed already. They had the great thoroughfare of the Strand. They had the Embankment itself; the river steamers, and the railways running all round London. But then it was alleged that if they were now to resell the land which had been acquired at so much cost, they could only do it at a loss of 500,000*l.* This was an absurd exaggeration. A gentleman, whose name he would have no objection to communicate to his hon. friends on the opposite side in private, told him only yesterday that he was prepared at the instant to give proofs to the Government of the most satisfactory character that a company would be ready to take the Carey Street site off their hands at the price paid for the land irrespective of the law costs and the drainage. Yes, but the gentleman said that if this resolution in favour of the Thames Embankment passed, such would be the value of the Carey Street site that it would be a gain rather than a loss to the Government. Therefore he denied the allegation that Government would lose a shilling. In fact, the Corporation of the Law Institution stated that the rise in the price of land in the neighbourhood was such that the value of their ground had been raised to the extent of 50,000*l.* He now came to the question of convenience—the convenience of the lawyers and the convenience of what were called the suitors, who were in reality the public. It was said that the Thames Embankment would be inconvenient to the lawyers. That might be so, but the inconvenience was infinitesimal. There would be a subway under the Strand which would enable the lawyers to pass to and fro with sufficient expedition. In the petition it was alleged that the lawyers would be obliged to change their chambers, owing to the distance of the Embankment site from the places where they were located. But he had tested the amount of inconvenience by walking from Lincoln's Inn to the Embankment site, and had accomplished the distance by the present circuitous route round by Carey Street, crossing the Strand, in four minutes and twenty seconds. He had no doubt that when the subway was made, the time occupied by traversing the distance would be reduced to three minutes. It was said that at present the lawyers paid 12,000 visits a-day to the Law Courts, and that if they were placed 50 yards from the crossing of the Strand, they would have to go an additional 600,000 yards, and then it was said, only conceive what an additional amount of shoe-leather there will be, and what an expense will fall on the suitors. In a letter written by Mr. Whitmore, the treasurer of the Temple, he showed that the suitors would gain so far as regarded shoe-leather, and that great convenience would be derived by the distant solicitors from the construction of chambers and offices on the Carey Street site, and that such employment of the site would be highly profitable. If the Carey Street site were devoted to chambers, counsel would be within easy call, and in three minutes they could be with their clients in the law courts. That was the view of Mr. Webster, the great champion of the Carey Street site, who admitted that any one who had experienced the great obstructions in the eastern and western arteries of the metropolis must be convinced that the nuisance which now existed would be increased when the new courts were placed on the Carey Street site, and he stated that Carey Street must be extended to Farringdon Street on the east and to Covent Garden on the west. Mr. Webster stated that the Strand, and Fleet Street, and Holborn, might be relieved by subways under the Strand near St. Clement's Church, under Fleet Street, under Chancery Lane near the Rolls Court, under Serjeants' Inn, and under Holborn near Gray's Inn. Now, if the Carey Street site should be selected, the whole district would be converted into a kind of rabbit warren. He now came to the question of the convenience of suitors. Lawyers seemed to think that suitors were made for attorneys. Now, who were the suitors? Why, they were all suitors, and consequently the convenience of the suitors was the convenience of the public generally. Another important point was the necessity of some direct communication north and south. This could be obtained by means of a street from Little Turn-

stile in Lincoln's Inn Fields, running down to the Strand. There was another objection, that although the Embankment might be large enough for the courts, it did not admit of expansion, and that more room might hereafter be required. The real answer to that was that the whole tendency of law reform at present was not to expansion, but to contraction, as was shown by the report of the Judicature Commission presented to Parliament a few days ago. Another objection to the Carey Street site was that for the next seven or eight years the Strand and Fleet Street would be blocked up by the conveyance of materials, whereas all the materials for the Embankment site could be conveyed by water. To show that the Embankment site presented greater advantages than the Carey Street site he would refer to the opinion of Mr. Barry, who said, that as regarded the Law Courts, there could be no question that a great central building, flanked by the Temple on one side and by Somerset House on the other, was the only satisfactory way of settling the question. He believed that the proposed change of plan would not involve a single month's delay, and he sincerely trusted that the House would adopt the resolution which he had proposed.

Sir R. PALMER rose to move the following amendment to the motion:—  
 "To leave out all the words after "desirable" in order to add the words "to proceed as soon as possible with the erection of the new Law Courts, and the offices connected therewith, upon the site appropriated for that purpose by the Act 28th and 29th Vict. c. 49; and that if additional land be necessary for the proper erection of such courts and offices, such additional land ought to be acquired in immediate proximity to that site." The Thames Embankment site was not a new question before the house. Before it was made or laid out—before any determination was come to about it—the site was brought forward and considered on its merits as a suggested site for these buildings, and at that time, when there had not arisen this inflated structure of architectural fancies, it was rejected by the house on its merits at the instance of the then Government, to which belonged almost every member of the present Government. Parliament was then of opinion that the Carey Street site was better than the Thames Embankment site on grounds of public convenience, and for the purpose for which the building was intended. The subject of the concentration of the Law Courts was first agitated by the solicitors so far back as the year 1832, and through their exertions a committee of inquiry was appointed in 1840, and made its report in 1842. A royal commission, presided over by Sir George Cornwall Lewis, was appointed on the subject in 1858, and made its report in 1860, recommending the Carey Street site. It was true that at the time that commission reported, the Thames Embankment was not in existence. The Act for making the Embankment was not passed until 1862, but Parliament did not legislate upon the report of the Law Courts Commission till 1865, so that both sites were then before the house, and Parliament was able to make an unprejudiced choice. He felt much regret and disappointment at the success which had attended the efforts made to induce those who lived in the Temple, and to whom, in point of local convenience, the Embankment site and the Carey Street site would be much the same, to separate from the rest of their profession on this question, and to support the Embankment site. He felt the more regret because that was not the way in which they were dealt with when the question of a site in Lincoln's-inn-fields was under consideration. At that time the Lincoln's-inn-fields site would have been more convenient to the Chancery practitioners than the Carey Street site, but for the sake of general convenience and the proximity of the courts to all classes of practitioners in the law, it was thought wrong to choose a site more remote from the Temple, even though it would have been more convenient to other members of the profession from its proximity to Lincoln's-inn. The legislation which had taken place upon the question had been proposed entirely upon practical grounds. It was necessary, for the sake of economy of time and the despatch of business, to bring the courts into the best centre of the legal business and population, and that could only be effected by putting the courts in such a position as they had been most fortunate to find in the Carey Street site, midway between the Temple and Lincoln's-inn, and not so far from either as to make access to the courts irreconcilable with access to the chambers of barristers, and conveniently accessible, without the constant crossing of great thoroughfares, to the great body of the general practitioners of the law. When the courts sat at Westminster the business of suitors in the preparation of pleadings and other work, which had to be transacted at Lincoln's Inn or the Temple, was often delayed for weeks or months because of the delays occasioned to barristers in waiting at the courts for cases which did not come on, and that was especially the case with juniors who had large business in chambers. Of course the clients had to pay for all those delays, which formed one not inconsiderable source of the delays complained of in Chancery. The Carey Street site had been supported by such hard-working members of the commission, who thoroughly understood the question, as the right hon. member for South Hampshire (Mr. W. Cowper), the present Lord Chancellor, and the First Lord of the Admiralty; and he believed their opinions were still the same as his own. That site was also supported by one whose authority must command some weight with hon. gentlemen opposite—he meant Lord Cairns, who, while sitting in this House as Sir Hugh Cairns, spoke on the subject on March 30, 1865. He (Sir R. Palmer) was at a loss to understand what new elements they had now to determine upon in this question which did not exist then. What was the opinion of the solicitors upon the point? They were nearly unanimous in favour of the Carey Street site, and the Incorporated Law Society had passed a resolution, with perfect unanimity or the nearest approach to it, declaring that the Carey Street site was obviously the best, and that it combined so many advantages possessed by no other site that no one competent to form an opinion upon the subject could for a moment think of proposing any other. It was true that at present a considerably larger expenditure was proposed for the Carey Street site than that which was originally contemplated by Parliament. But as the bill passed through the House two things were done which resulted in the enlargement of the scheme: one was that on the part of the Temple especially it was insisted that it was desirable the Government should not retain in their own hands the exclusive control over the execution of the work; but that on account of the immense importance of making it as well adapted as possible to the

administration of justice, a commission should be appointed to confer with the Treasury and to advise them with respect to the plan of the building to be erected, and the best mode of carrying it into effect. Moreover a clause was inserted during the passage of the bill through Parliament which provided not only that those courts and offices which it was originally proposed to concentrate should be erected, but that it should be competent to the Treasury and to the commissioners to consider whether other buildings might not, with public advantage, be added, and also what approaches it might be expedient to make. There was, however, no reason to suppose that if there had been no enlargement of the original design the estimate of the expenditure would have been exceeded. Sir R. Palmer concluded by an explanation of how the commissioners proposed to provide for the additional outlay on the Carey Street scheme, by ridiculing the sanguine hopes and statements of his opponents, and contemning the great cost of the new site; urging that in the recent publication of Mr. Street's views in the discussion at the Society of Arts, it was clearly proved that the figures of Sir C. Trevelyan were not accurate and could not be made the basis of his conclusions. Mr. Shields, an engineer, had reported on the approaches and the two sites, and he said that the Carey Street site would cost much less than a building on the Thames Embankment, and he, too, regarded the figures of Sir C. Trevelyan as inaccurate. He would not pursue the matter further, for it was enough for him to say that, in the opinion of the architect, the level of the Carey Street site was much the best when considered with reference to public convenience. The courts, if erected on the Carey Street site, would be surrounded by buildings worthy of the neighbourhood. As to the Law Institution and King's College Hospital, there would be no necessity for their removal. In his opinion and belief the original reasons for preferring the Carey Street site remained in full force. The hon. and learned member concluded by moving his amendment.

Mr. G. DENMAN seconded the amendment.

Mr. B. HOPKINS admitted that the Carey Street site had great practical advantages, for it stood well elevated, and a large building upon it would be as much above the water as St. Paul's. At the same time the advantages of having a building on the great roadway alongside the Thames were equally undeniable. The question had been treated too much as one between partisans. They must bear in mind that they had the certainty of having a grand building upon a very good site in Carey Street, and that the Embankment was considerably lower than Carey Street, and would cost more for foundations. The house ought to be informed of the views of the Government on the subject. Whatever the result might be, he hoped the Carey Street site would not be abandoned to speculative builders.

Lord BURY said, though he confessed to small acquaintance with the details of architecture, he thought that some who were not lawyers might be permitted to give an opinion on this question. Speaking as a ratepayer of the metropolis, and looking at the question in an economical point of view, he confessed to a predilection in favour of the Thames Embankment site. It had a broad roadway, with good approaches, and a river frontage, which would secure them plenty of air and light. A building on such a site would be seen to the best advantage, and the inhabitants of it would not be in any degree removed from the haunts of legal men. But what did they find on the other side of the Strand? There they found a large space of land that had been cleared, and that another space of considerable size would still be required; while the public buildings already adjacent to the site would block up the new courts, and it would be difficult under any circumstances adequately to develop their architectural proportions. In the matter of approach the Carey Street site was open to the gravest objections; to get at it you must penetrate through some of the densest slums of London, come from what quarter you might, unless indeed a new arterial communication was to be opened, at an unknown cost. In the Embankment a great arterial communication east and west already existed; for the Carey Street site it would have to be made, and to be made at the expense of the ratepayers of London. As one of that body he thought this was a very serious matter. No doubt, as the hon. and learned member for Richmond had said, the expense of constructing such an outward communication ought not to be put upon the Carey Street site; but that very argument told in favour of the Embankment. The Metropolitan Railway would soon be running along it, and he had seen a scheme for constructing a railway right through the centre of London from Cromwell Road straight to the Law Courts. In regard to the comparative artistic merits of the two sites, he admitted that Carey Street did offer great architectural opportunities, provided that free means of access were to be opened up to it. But if that part of the undertaking was to be left *in nubibus*—left to chance—to be done some day or other—then he maintained that after the Law Courts had been erected on the Carey Street site, nobody would be able to see them. Some of the arrangements connected with that site were really ridiculous. According to the proposed method the *coup d'œil* would be this—barristers, in their gowns and wigs, would be seen approaching the courts from all quarters; suddenly they would disappear from sight and be working their way through the burrows and tunnels leading to the court. It would be still more ludicrous to see a venerable and learned judge, full of years and honours, and arrayed in the garb of office, being hoisted up, body and bones, to his place of justice. But if any of them should object to such an undignified and uncomfortable method of transportation, he would have to walk up 70 or 80 steps, and not only would he have to do this, but all the suitors and barristers to the end of time would have daily to do the same. Surely such an inconvenience ought, if in any way possible, to be avoided, and it could be avoided by building the courts on the Embankment level. As to the argument that the question had been settled and ought not to be re-opened, he replied that it had been decided in the absence of a most material witness. When Sir G. C. Lewis made his report, the Thames Embankment did not exist, or certainly its claims would at least have been taken into consideration. The Carey Street scheme, moreover, was by no means in a completed form. The original plans had been rejected, the original estimate had been exceeded, the money spent, or to be spent, upon it amounted to 1,500,000*l.*, and he believed that the cost of the Embankment site would compare very favourably with that expense.

Mr. G. DENMAN said that he objected to the motion because it would involve a waste of money, a waste of time, uncertainty as to the result, inconvenience to the profession, and expense to the suitors. If the Courts of Law were raised on the Carey Street site, they would be within two or three minutes' walk of the chambers of almost all barristers in practice, whether they were in Lincoln's Inn or in either of the Temples, and within a very short time there were sure to be either subways or covered passages leading from the inns to the courts, so that barristers could pass to and fro in all weathers without inconvenience. Barristers were now compelled to waste hours upon hours in court waiting for their cases to come on, a loss of time full of inconvenience to themselves, and of expense to their clients, but which would be entirely obviated if their chambers were close to the courts. They would then be summoned within a few minutes of the time when their attendance was necessary, and in the meanwhile they could be doing work in their chambers. But place the courts on the Embankment, and half of those advantages were sacrificed. Lincoln's Inn would be isolated; barristers having chambers there would find it a walk of seven or eight minutes across an open and crowded thoroughfare, before they could reach the new courts; and however trifling a matter a few minutes more or less might appear to the hon. member for Galway, every lawyer knew that they constantly made all the difference in the world, and might be the occasion of a cause being postponed for weeks. To solicitors the superior convenience of the Carey Street site was equally beyond dispute. It by no means followed that if the courts were not built on the Embankment, the space must be occupied by poor and mean edifices. It could and ought to be secured by the Government and reserved for important public buildings worthy of the position, and he quite felt, with the hon. member for Cambridge University, that it would be highly desirable if the House was informed what the plans of the Government in that respect were. As to questions of beauty and effect, he thought the arguments on each side might be used as a set-off one against another. But there was one thing of which there could be no doubt—that where the great mass of the legal profession was gathered together, there the new courts should be placed. It would be an extravagant waste of time and money to throw the whole question back indefinitely, and plunge the profession into its old state of doubts and difficulties. He understood the building might now be completed in the course of the next two or three years, and he hoped the house would not agree to the question being postponed any longer.

Mr. G. GREGORY said he would not have obtruded himself upon the house if it had not been for the allusion made by the hon. member who introduced the motion to that branch of the legal profession to which he belonged. The hon. member intimated that the opposition to the Embankment site originated with the solicitors of Lincoln's Inn. Now, he denied that. No doubt those solicitors did object, but it was only in common with the other members of their profession. The opposition originated with the Law Institution, of which 2,000 solicitors were members, and it originated there because they had devoted much time and labour to the question, and in the Carey Street site they thought they saw an end to their labours, while this Embankment site tended to dissipate the expectation. His hon. friends who preceded him had left him little to say, and he rather tendered himself as a witness than appeared as an advocate. The hon. member for Richmond had referred to a pamphlet giving some details as to the cost of the new site. He knew the author of that pamphlet, and he could certify that the figures were correct, for they had been tested by two or three eminent surveyors. Then, if they did abandon the Carey Street site, it was estimated that the Government would lose 500,000*l.* He thought too much had been said on the subject of approaches. They did not want grand approaches to courts of law. If they opened the Turnstile out of Holborn, and widened the corners of some of the streets leading from Long-acre to Carey Street, they would give all that was wanted. He did not know that it was desirable to make the courts very convenient for the public to attend. If they provided a large space for their attendance, they were apt to indulge in expressions which disturbed the course of justice. Much had been said of the necessity of employing lifts for the judges, but in fact the average rise would not be more than 18 feet, while on the Embankment site the fall of the ground was 30 feet between the Strand and the Embankment. He entreated the house to settle this question at once and for ever. It had too long been made the subject of discussion. Even if the new courts were commenced at once, there were many in his profession who could not hope to do business in them, but they wished to leave them to their successors as buildings where justice could be administered with something of the decency, not to say the dignity, that was due to the administration of the law.

Mr. W. COWPER said that nothing had occurred to alter his opinion that the Carey Street site was the most convenient and economical, and afforded the best opportunity for grand architectural effect. The 800,000*l.* which had already been spent was a matter of account and not of estimate. With regard to the demand for 700,000*l.*, that demand was not absolutely required for the erection of buildings, but it was considered that it might be required for light, and air, and approaches, and ultimate extension. The estimate of the cost of the Embankment rested on no responsible authority, and was open to great doubt. He believed that if the site in Carey Street were to be sold in the ordinary way, the 800,000*l.* which had been paid for it would not be realised, and Mr. Pownall estimated that the loss would be 500,000*l.* He did not believe that the money would be recouped by the erection of buildings for barristers and solicitors, for he did not think they would be inclined to leave their present places of business. With respect to the expenditure on the sites, there must be a large expenditure on the Embankment which would not be necessary on the Carey Street site. The Carey Street site was a level surface, but the Embankment had a slope of from 30 to 32 feet. That would involve the building of a basement like that at Somerset House. It was well known that the foundations on the banks of the river were bad, and that in erecting buildings it was necessary to go to a greater depth than in any other part of the metropolis. It would be necessary for the purpose of avoiding vibration from the railway to carry the foundations of the building below the railway level—probably down to a depth of forty feet. The additional expense that would be thus caused

had been estimated at 500,000*l.* Then there was the question of approaches. The two sites varied very little with respect to approaches. The Strand was common to both. On the Embankment side there would be a roadway. On the Carey Street side there was Holborn. An enormous preponderance of the legal profession came from the north and not from the south, and of the ordinary public who came to the Strand, the large majority also came from the north. Supposing the law courts to be erected on the Carey Street site, there would be an easy communication through Norfolk or Essex Streets from the Embankment and the Underground Railway. On the other hand, there would be the access from Holborn, and an improved communication might be made by breaking through the Turnstile. With respect to quiet, the advantage was entirely in favour of Carey Street, for on the north side there was no great thoroughfare for vehicles. On the score of economy and convenience, he considered the Carey Street site highly preferable, for so far as the convenience of the legal profession was concerned, the courts would be in the heart of their places of business. On these grounds he opposed the motion of the hon. member for Galway.

Mr. TRINA, advertent to the fact that the estimate for the Carey Street site had been doubled, said that the area which the Commissioners began with was, if he recollected rightly, 376,000 feet, or about seven and a half acres, and now they asked for 276,000 feet more, to make ways around it. With regard to the Embankment site, every one was enamoured of the wonderful work which had been done, and filled with a desire to make the Embankment worthy of the metropolis. If things, however, remained as they were, there was danger that instead of an ornament, they should have a disgrace. Owing to the original provisions of the Bill, the Metropolitan Board had no power whatever to take an atom of the dirty, unsightly streets that ran down from the Strand to the Embankment. But there was a small portion of ground between Essex Street and Arundel Street which might be put to very good use. If he was asked to vote for one site as against another, he should hesitate before voting against the Thames Embankment. He would not venture to put his experience against that of the lawyers as to which site was the more convenient and better for them. But he would ask, how was it that a large number of eminent lawyers who practised in the City had contrived for so long a time to get from one Court to another? The question of Lincoln's Inn and the lawyers' chambers adjacent, that so much had been made of, appeared to him a very small matter. With regard to the estimates, he was not going to say a word, after the reproaches which had been addressed to him the other night. But when they saw that lawyers had the making of the estimates, and it was suggested that what had begun at a million might possibly become 3,200,000*l.*, he thought architects need not be very much ashamed of themselves. He had only suggested doubling the estimate, and that was very natural and very usual. But looking at the matter as a man of business, it appeared to him that the building itself, from its enormous size, was a mistake. Last session he was of opinion that if they were to divide the building it would be possible to get rid of the difficulty as to the two architects, one of whom, Mr. Edward Barry, he could not but think had been very ill-treated. If they could separate the building into two portions—one might be larger than the other,—they might have it in their power to do some justice to a man whom they had treated with some injustice. He had a great regard for both architects, and had been always on excellent terms with them; but putting the architects out of the question, he believed that the proposed building might be divided properly and economically. It was perfectly well known to the Metropolitan Board that if they should not have the inclined road between Hungerford and Waterloo bridges, they must have some communication from the Strand with the Thames Embankment; and the only other alternative was Essex Street. Now, at the bottom of Essex Street would be found a very convenient piece of ground for a handsome building which might be used for the storage of wills, and leading lawyers had told him that it would be desirable to take such a building out of the crowded streets. Such a building would lend to the Embankment a certain amount of ornament, even if Carey Street was retained as the site for the main building.

Lord J. MANNERS said that up to this time he had not heard the slightest indication of the suggestion of the hon. member for Bath for a separation of the courts, and so far as his experience went he did not think the hon. member for Bath's suggestions would find favour with the legal profession. The hon. gentleman assumed that the cost of the Carey Street site would be 1,500,000*l.*, to which he added 100,000*l.* for the purchase of the Law Institution, 1,000,000*l.* for the necessary approaches, as suggested by Mr. Street, who, however, now expressed his dissent from that estimate, and then 1,600,000*l.* for the road proposed by Mr. Shields, which made so enormous a total that he really distrusted the power of his memory to retain it. But Mr. Shields' road was entirely repudiated by Mr. Street, the architect of the building, and, even if that road was required, it would be for the general improvement, embellishment, and convenience of the whole metropolis, and the estimate for the Carey Street site ought not to be saddled with it. The item of 1,600,000*l.* ought therefore to be entirely left out of consideration. The item for King's College Hospital and the approaches, 1,000,000*l.*, was a very large one, but neither Mr. Street nor the commission proposed to purchase King's College Hospital.

Mr. GREGORY said he had not included the purchase of the hospital. His item was 1,500,000*l.* altogether, for the approaches, from east and west.

Lord J. MANNERS said he was so overwhelmed by the hon. gentleman's figures that it was no wonder he had understated them. The item of 1,500,000*l.* for approaches was not wanted for the law courts, and it was in the highest degree unfair to saddle the Carey Street site with it. His hon. friend also saddled that site with 100,000*l.* for the purchase of the Law Institution, but that was a comparatively small item, which he would not raise much question about. But the two large items which he objected to have saddled upon the Carey Street site amounted to 3,100,000*l.* The three and a half acres of land required for the approaches to the Carey Street site, &c., would cost 686,000*l.*, or, in round numbers, 700,000*l.*; but an acre of that would not be required, and could be resold, so that the total nett cost would be 418,000*l.* By that extent no doubt the cost of the Carey Street site would have to be increased, and as the site had already cost in round numbers 800,000*l.*, the total would be 1,218,000*l.* Now,

what was the expenditure for the Thames Embankment site? The hon. member for Bath spoke derisively of lawyers making estimates for the purchase of land; but it was a remarkable fact that the estimate for the Thames Embankment site was made by the same gentleman who made the estimate for the Carey Street site. The Thames Embankment site alone was estimated at 1,500,000*l.*, without anything for approaches or anything else, so that there was an excess on the site alone of 282,000*l.* Those who advocated the embankment site did so not on the ground of convenience of suitors, solicitors, barristers, or judges, but on what they called æsthetic grounds, as a great metropolitan improvement. But if that were the real reason for the change, it could not be supposed that such a gigantic building as the law courts was to be could be put up side by side with Somerset House, while Somerset House was left as it now stood, with its dumpy dome and narrow windows. Somerset House would be dwarfed and killed by the law courts, unless a great change were made in its façade and summit. He asked the house to view the question in a practical spirit, and not allow itself to be led away by architectural dreams of what might or might not happen. His object was to carry out, if possible, those works that had been sanctioned by his predecessor in office. In the present instance he thought it would be a most unfortunate event if the government were to reverse the decision of their predecessors for the last eleven years, and by their vote that night plunge this great question into confusion and architectural and financial chaos.

Mr. J. LOCKS believed that all the legal arguments used that evening came from the Lincoln's Inn side of the question. It appeared from the figures relating to both sites that the Carey Street site, if the building were completed upon it, would cost more than if the edifice were raised upon the Thames Embankment. Supposing that the question were now raised for the first time, and that they were offered those two sites only for a building of the kind, on which would they prefer the law courts to be built? He did not think that they would hesitate long before they decided in favour of the Thames Embankment. For æsthetic purposes there was no doubt but that the embankment was preferable to Carey Street, while, as to convenience, he contended that the advantage was on the side of the Thames Embankment.

The CHANCELLOR of the EXCHEQUER could have forgiven his hon. and learned friend what he had said if he had only found in him one redeeming virtue—that was to say, if he could have gathered from his speech he had the slightest regard for the British taxpayer. That was the point with which he (the Chancellor of the Exchequer) was particularly concerned. The noble lord opposite had called his attention to the subject in a very marked manner; but that was not necessary, because, when he had first come into office, one of the earliest documents presented to him was an account to the 21st of July last, stating that the actual outlay on the undertaking down to that date was 785,000*l.*, that additional land was proposed to be purchased for 668,000*l.*, that the cost of the buildings and architect's commission would be 1,650,000*l.*, that the furniture and the contingencies would amount to 147,000*l.*; making a total of 3,250,000*l.* Besides, there was a further sum of 108,000*l.* for the expenses of the royal commission, in which was included 27,000*l.* to the Messrs. Field and Co., for commissions, disbursements, and taxed costs; making altogether a sum of 3,358,000*l.* He had then been immediately referred to two documents which authorised or seemed to authorise that enormous expenditure, namely, two acts of parliament passed in the year 1866. One of those acts fixed the expenditure at 1,500,000*l.*, both for the building and the site, while the other contained a very remarkable provision to the effect that no notice should be given of an intention to purchase property under the act until the commissioners and the Treasury stated that they were satisfied that that sum was sufficient for all the purposes contemplated by the measure. On reading those documents, it seemed to him as if the ground had given way under his feet. He next referred to the debates which had preceded the passing of those acts, and he found that his hon. and learned friend who at present urged them not to stop at any expenditure, delivered an excellent speech, in which, after remarking that the cost of the site and the building would be 1,500,000*l.*, said that was, no doubt, a considerable sum of money, but that the house would think it well and economically spent if they could obtain for it so important a public benefit as the proposed building. On the second reading of the bill his hon. and learned friend returned to the charge, and stated that it would be the constant care of the Treasury so to watch the undertaking as to prevent extravagant expenditure. His hon. and learned friend also said he did not think the estimate would be exceeded; and yet the estimate at present reached 3,250,000*l.* That was enough to frighten any one after reading these acts and speeches. By the act of parliament the Treasury and the commissioners should concur in sanctioning any further expenditure, and when he was asked to agree to a further outlay of 660,000*l.*, he said "No." He then went to the commissioners and read to them that section which had appeared to him so startling; and he told them he felt it his duty to stop all expenditure until the pleasure of the house could be taken. He should next state what he considered to be the position in which they were then placed. The estimate, which, as he had already stated, was 3,350,000*l.*, was not a final one; it was, he believed, what was called a "sketch" estimate, and it would be unfair to the architect to hold him bound by it. It should be further stated that there were certain other lands, called he believed "Cook's block," which must be purchased; and there remained, besides, the question of approaches to the building. Those approaches had been treated as if they were optional; but that was not the case. The Strand was called the great artery of London, but he denied that was an approach to anything. There were persons who wished to witness the proceedings of the courts of justice, and it was impossible that the courts could discharge the purposes for which they were to be erected without having good access. It was not unreasonable if they went to this immense expense that they should provide for the safety of the people. There were to be something like 60 steps from the street to this building, and, upon the occasion of some great trial, on the verdict being given, the people would pour out into the Strand, and accidents would probably result. Now the Metropolitan Board was not at this moment rich,





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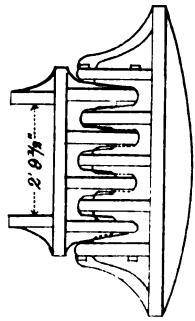
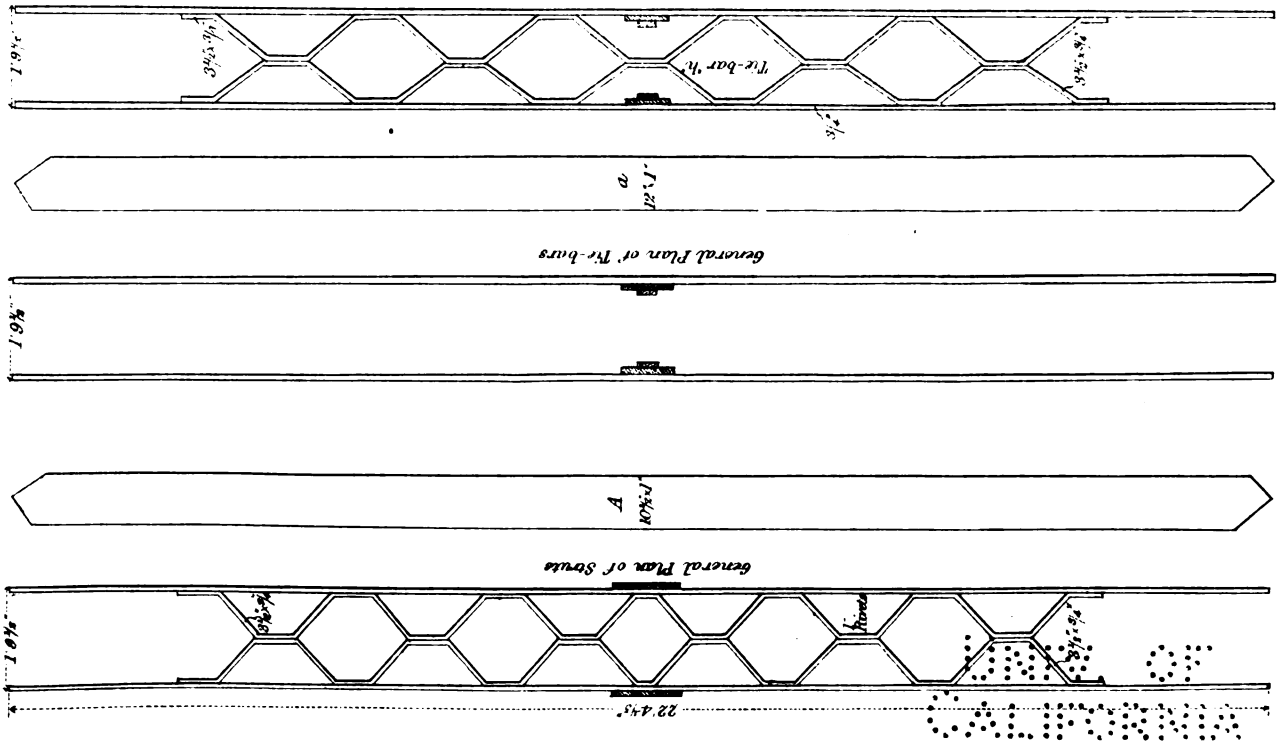
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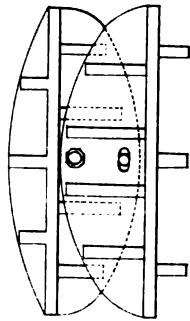


Chas. Architect, April 24<sup>th</sup> 1869.

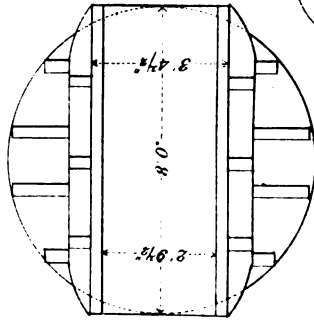
Struts and Tie-bars



End Elevation

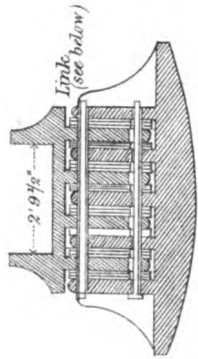


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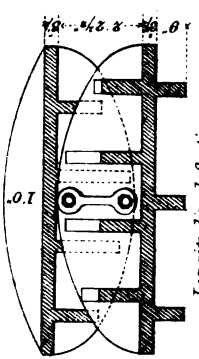


Plan

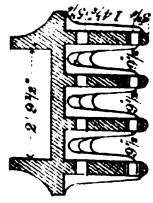
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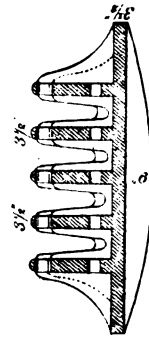
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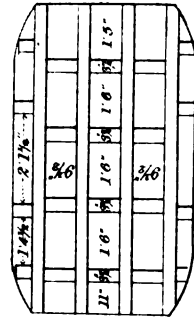
Longitudinal Section



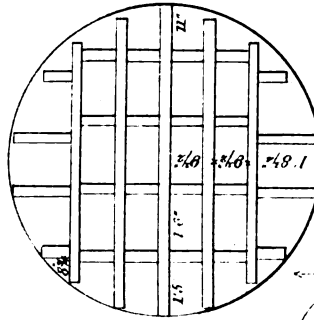
Section of upper Bed-plate



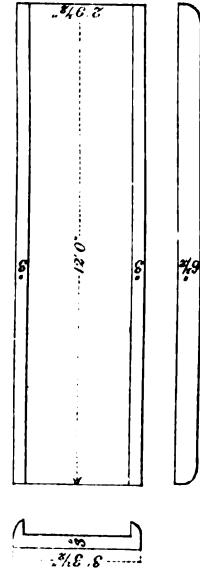
Section of lower Bed-plate



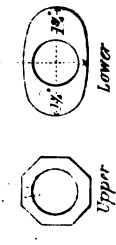
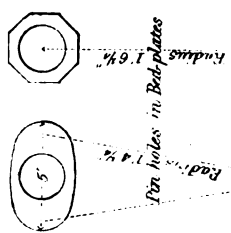
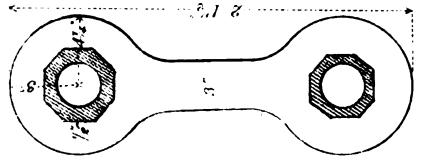
Plan of upper Bed-plate



Plan of lower Bed-plate



Bed-plate for Pier



SOUTH ESK RIVER BRIDGE

Details

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and even if it were they could not force it to make the approaches, and they could not go on without them. He thought that as the estimate was not a final or conclusive one, and as these approaches must be made, it was not at all unreasonable to say that they would do well if they got out of it for 4,000,000*l.* He, as being charged with the finances of the country, protested against such extravagance, because he held it to be unnecessary. The estimate of 1,500,000*l.* was a reasonable one, and his hon. and learned friend the member for Richmond, instead of asking them to multiply it by three, should rather endeavour to make us retrace our steps. He put this question as one of economy, and in that light he entreated the house to consider it. It was the money of the taxpayers of the country with which they were dealing. Now, why was it that this sum had grown up to 3,350,000*l.*, with the certainty that it would go beyond that? Simply for this reason, that instead of being content to include in the building the concentration of the law courts and the offices necessary for the administration of justice, they had desired to construct a great Tower of Babel, which would be full of noise and confusion, and contain many offices which would not be necessary there at all. In fact it would be the very paradise of thieves and pickpockets. Why, because they concentrated the courts, should they desire the office of the accountant-general to be taken to the same building, or that all the wills that have ever been made in this country should be taken from where they were and piled up in the new building? It would be an extreme disadvantage, to have all these crowded together in the same building, for they would not facilitate, but rather impede the administration of justice. This being so, he earnestly pressed upon the house to retrace their steps, and to go back to the more sober and wiser views of four years ago. He now came to another point. A great deal had been said about the public having little or nothing to pay for this matter; that the whole thing was to be paid for by a tax on suitors, excepting some 200,000*l.* that the government was to advance. He was bound to tell the house that no fallacy could be greater than that. In the Court of Chancery there was a surplus of 7,700*l.*; in the superior courts of law, 16,000*l.* surplus. But this was in rapid course of diminution in consequence of the act of last session giving extended jurisdiction to the county courts. In the Court of Bankruptcy there was a considerable sum, which was also in a fair way of extinction by the abolitions and compensations which must follow from the best intentioned Bankruptcy Bill. Then there was in the Court of Probate a deficiency of 7,300*l.*; in the High Court of Admiralty a deficiency of 4,000*l.*; and in the Land Registry Court of 4,500*l.* So that the whole state of the case was that the expenditure in these courts exceeded the fees by 52,000*l.* a year. The account rendered last July, by the commissioners, of their ways and means, showed a charge of 3,350,000*l.* 1,000,000*l.* of Chancery stock had been sold, and realised 900,000*l.*, and that sum was expended and done with. Then the government granted 200,000*l.* in consideration of the buildings vacated by concentrating the offices, and they proposed to sell out of Chancery 201,000*l.* of stock; but that was part of those funds which yielded that surplus of 7,000*l.*, and when they had sold that sum they would have diminished the receipts of the Court of Chancery. The consequence would be that he would have to provide out of the general taxation of the country 7,000*l.* a year to supply the deficiency. The next item was bankruptcy, 271,000*l.*; but that again was part of the assets, the income of which went to keep down the expenditure of the country, and if they took that away he should lose the income of that also. The same thing would occur with respect to 177,000*l.* unclaimed dividends; that would also increase the expenditure by diminishing the revenue. There was a tax to be imposed upon the probate of wills and administrations which was estimated to produce 46,000*l.*; but that was clearly an Imperial tax, and if anybody ought to put it on, it was him. That item must therefore clearly be struck off. What resulted from all this? The commissioners said they expected the government to lend them a sum of 1,395,000*l.* for the purpose of making up this 3,350,000*l.*, and that was to be redeemed by an annuity of fifty years at four per cent. But the annuity was to be paid mainly by the tax on probates, so that it would in fact come out of the general revenue of the country. Under these circumstances he had suspended the purchase of this 660,000*l.* worth of land and stopped all operations that he could, awaiting the pleasure of the house, and it remained to see what that pleasure was. He had no difficulty in suggesting what he should like to see done, and that was, that with every respect to the Royal commission, he thought that they should be relieved from any further duties, they having really performed all their functions, and that the whole matter should be remitted to the Treasury and himself to do what the Act of Parliament contemplated. He had the strongest objection to the proceedings recommended by the hon. and learned member for Richmond. The building proposed was altogether outrageous for the purposes intended. In justice to the commissioners, he might state that what they had done had been done legally. But he believed that the second act, which empowered the commissioners to alter and enlarge the plan, was passed at the end of the session, and was unknown to the great mass of those who had consented to the prior act. He earnestly hoped that the house would not go on with this enormous building—that they would reconsider the question altogether, and come down to the modest estimate with which they started. What they wanted was air, light, quiet, and accessibility, but those things are not to be obtained in the Carey Street site. His hon. and learned friend had argued rather loftily when he assumed that because a number of legal gentlemen chose to encamp themselves in one of the worst and lowest parts of London, they were bound to follow them. Besides the two alternatives alluded to, he thought there was a third. The cost of Sir C. Trevelyan's plan would, he believed, be something like 2,000,000*l.*, and he hoped they would not consent to it. The other alternative by which he thought the object desired could be obtained—and he did not speak without authority, because it was approved of by competent persons—was this. There is a street called Howard Street, which runs midway between the Embankment and the Strand. Above that street there was property of considerable value, which consisted of good houses in Norfolk, Arundel, Essex, and Surrey Streets. Below this the property is of very inferior value. He believed that the piece of land, amounting to about six acres, could be bought for 600,000*l.* He was also advised that on that

piece of land a building might be erected capable of containing all the courts of justice and all the ancillary offices, and that at a cost of 1,000,000*l.* So that for 1,600,000*l.* a site might be obtained with the buildings necessary for the administration of justice. Without much expense the building might be extremely ornamental. Standing below the buildings of the Strand, it will not require an ornamental frontage on that side, while on the Thames side it might be made very ornamental. He believed that the plan of Inigo Jones for the magnificent palace of Charles I., with a grand quadrangle occupying the space between the river and the Horse Guards, was, with the elevations, still preserved. He had put that forward merely as his personal idea, whether or not Inigo Jones's elevation might not be here reproduced; but he earnestly entreated the house to give a fair and impartial consideration to the scheme he had suggested. He had only done his duty in endeavouring to prevent the house drifting into an enormous expenditure. With regard to the Carey Street site, if they only had a little patience, he had no doubt they would be able to dispose of it without much loss. They had far better stop short in their career of extravagance than go on throwing good money after bad.

Mr. HENLEY wished that the fresh issue raised by the right hon. gentleman had been brought forward earlier in the evening. He begged to move that the debate be adjourned.

Mr. CRAWFORD seconded the motion.

Mr. GLADSTONE denied that the Government had taken any steps for forcing the house to a premature division on the question. He quite approved of the proposition of the right hon. gentleman (Mr. Henley) that the debate should be adjourned. The speeches of the hon. member (Mr. Gregory) and of his hon. and learned friend (Sir Roundell Palmer) had occupied attention till nearly half-past seven, and if his right hon. friend had risen at that time to state the views of the Government he would have defeated his own purpose. He waited, therefore, till the house was reasonably full, so that the views of the Government might be fairly placed before them. Whatever blame there might be, was not due solely to his right hon. friend the Chancellor of the Exchequer, but must be shared by his colleagues.

Sir R. PALMER wished to address a few words to the house, because he thought his right hon. friend the Chancellor of the Exchequer had rather unintentionally put him in a false position with the house as to some of his observations. The Chancellor of the Exchequer had put the case as if he (Sir R. Palmer) wished to launch the house into a great expense. His motion left it to the Government to say whether they would accept the scheme propounded by the commission, and he did not propose that the house should be called on at once to pay for more land, but that if they were necessary, more lands should be bought in the proximity of the Carey Street site. He had stated distinctly that it was for the Government to determine whether or not they would accept the plan, whether they would incur that enlarged expenditure, and whether they would raise money by the means proposed. He did not take upon himself to anticipate the determination of the Government, or to urge upon them a particular plan.

Lord J. MANNERS thought the adjournment ought to be merely a formal one. The plan of the Chancellor of the Exchequer was one that it was utterly impossible to discuss that night with the view of arriving at a legitimate conclusion. The Chancellor of the Exchequer having recommended that the commission should be abrogated, and that the whole thing should be taken in hand by the Government, this should be a formal adjournment, and he hoped that the Government would submit a scheme which would enable the house to arrive at a sound decision upon the subject.

Mr. GREGORY had no objection to offer to the adjournment of the debate. He should like to hear, as soon as possible, what course the Government intended to pursue.

The CHANCELLOR of the EXCHEQUER quite accepted the proposition of the noble lord, that the responsibility of the matter should be thrown on the Government.

The debate was adjourned till that day month.

## ILLUSTRATIONS.

### SOUTH ESK RIVER BRIDGE.

THIS Bridge is to carry the Launceston and Western Railway, Tasmania. From the drawings it will be seen that it consists of two main girders, continuous, with cross girders 14 feet apart, and longitudinal rail bearers, all on the lattice principle. If the railway has as much traffic as the main girders could sustain, the Launceston and Western shareholders will have little cause to grumble. As we have taken some pains to make our illustrations working drawings, not only by showing every detail, but by the rather unusual method of giving all necessary dimensions as well, the construction of the bridge is, we imagine, evident, and requires little additional explanation. In the manufacture of wrought iron bridges, the most important thing to be considered is the character of the riveting. All the rivet holes in this bridge are to be drilled—a practice that ought to be universally adopted, but at all events in cases like the present, where large rivets are intended to be used. The bridge is braced by horizontal angle-irons and bars underneath, and by angle-irons at every second bay overhead. The arrangement of the bed-plates on the abutments appears to be original. It may not be easy to manage castings of such a size and form in making, but when complete the arrangement ought to allow of the bridge expanding or contracting without injury of any kind.

Mr. Doyne was one of the first engineers in this country to point out the advantages, in certain circumstances, of lattice girders for bridges. In 1851, in conjunction with Professor Blood, he prepared a paper for the Institution of Civil Engineers, which the late Robert

Stephenson thought so valuable, that he said it left little or nothing to be written on the subject. It was illustrated, not only in the ordinary way, by diagrams, but also in a way that ought to be more often practised, by a model which indicated the strains produced by weights placed in any position on it; and in this way sensibly demonstrated the accuracy of calculations based on formulæ derived from mathematical reasoning. Some of the results may be worth repeating on this occasion. As regards the strains that have to be resisted by the top and bottom members or booms of a girder, and consequently the amount of material that ought to be given to them, there is no practical difference between a girder having plate sides and one with lattice sides. In a plate girder, if the load is uniformly distributed, the horizontal strain may be said to increase from the supports towards the centre in a proportion like the ordinates of a parabola. In the lattice girder this increase is rather by sudden increments, depending on the closeness of the points of connection of the lattices with the booms; but a parabolic curve would still be the truest average representation of the strains. Consequently, in all kinds of girders the area of the flanges of both booms ought to increase from the abutments towards the centre. With the load in centre the horizontal strains will be, of course, as the ordinates of two converging lines. As regards the lattices, when the load is uniformly distributed, the strains in the diagonals increase in the reverse way, that is, from the centre of the beam towards the ends, and, consequently, their areas ought to increase in the same direction, care being taken in cases like a railway bridge that the lattices should be able to resist the strain produced by the greatest load that could be placed at one point. If the load was to be stationary at the centre, uniform strength in the lattices would be sufficient, but it is hardly necessary to say that in such cases the weight of the beam itself produces the same effects as a uniformly distributed load of equal weight. These conclusions are now familiar to all; it would not be easy probably to find any engineer of eminence maintain the superiority in general of the plate over the lattice girder, and certainly more large beams are built of lattice work than plate. But it used to be different. Mr. Fairbairn, we think, somewhere calls the lattice or trellis girder 'an imperfect double flanged beam,' and Robert Stephenson said, 'in comparing the strength of a flanged beam having a solid vertical side, with that of a beam having a trellis side, it would be found that the strength of the former would be as the square of the depth, whereas the strength of the latter would be simply as the depth.'

We are indebted for the use of the drawings to Mr. G. Willoughby Hemans, Member of the Council of the Institution of Civil Engineers, the representative engineer of the railway company in London, under whose direction the bridge is being constructed by Messrs. De Bergue & Co.

N.B.—A third plate, illustrating the detail of this bridge, has been prepared, and will be given in our next.

#### 'TILE PAINTINGS,' BY MESSRS. W. B. SIMPSON & CO.

AMONG the variety of pottery productions which have been applied to architecture, we have seen none more interesting in an artistic sense, or more likely to prove valuable to our professional readers, than these tile paintings—or, as the manufacturers prefer to call them, 'art tiles,' as distinguished from those produced by mere mechanical processes; for it is a special feature of these tiles, that they are the direct and actual work of the artist who designs and paints them. Our readers might suppose, from the monochrome quality of the illustration, that the resources as to colour are very limited. The contrary, however, is the fact, for the painter on these tiles has at his command a palette quite as extensive as any canvas painting can exhibit. The colours being, of course, ceramic in quality, are much more brilliant in their effect when glazed. This glazed texture is not at all essential to these tiles, as we have seen some varieties, also hand-painted, which are perfectly flat, the colours being laid on and fired without glaze.

On first inspection of the effect produced by the designs we have examined at Messrs. Simpson's premises, we were afraid that their sumptuousness could only be purchased at very high prices, but the figure quoted to us proved that this class of work is quite within the average means which an architect may have at his disposal.

Another feature in this attractive branch of manufacture is the ease and certainty with which architects and designers generally can have their designs produced in imperishable quality. The material of the tiles themselves is, of course, of a fire-proof kind—a consideration of growing importance at present. The painted decoration, being fired in the kiln, can be easily cleaned, and is not liable to that amount of wear which implies repairs.

We may only add that any of our readers can see specimens of these painted tiles at Messrs. Simpson's, West Strand; and if they are sufficiently interested to follow up such work, they will there find specimens of the simplest diaper treatment, as well as of the more elaborate and higher figure designs.

The Trustees of the Proposed Roman Catholic Cathedral have been compelled to abandon the idea of occupying a site in Victoria Street which they had thought would suit them, and are understood to be looking out for vacant ground elsewhere.

## THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

ON Monday evening last, the presentation of the Royal Medal and of the Institute medals and prizes took place at No. 9, Conduit Street. The President, W. Tite, M.P., read a letter from Major-General Sir Thomas Biddulph, K.C.B., communicating Her Majesty's approval that the Royal Medal should be conferred on Professor Lepsius. That eminent author and antiquarian was unfortunately prevented, by his official engagements at the University of Berlin, from attending the ceremony in person, but the Baron Schmidthals, Secretary to the Prussian Embassy, had kindly consented to receive the medal on behalf of his illustrious fellow-countryman, and attended the meeting for this purpose.

The President in a short but appropriate speech alluded to the original establishment of the Royal Medal, as well as to the high attainments and special qualifications which distinguished Professor Lepsius as a *savant* and Egyptian archaeologist, and had led to his being selected by the Institute for the honour in question.

Baron Schmidthals in reply thanked Mr. Tite for the complimentary manner in which he had referred to Prussia and her encouragement of art, expressed his full appreciation of the honour which had been conferred upon Professor Lepsius, for whose talents he entertained the greatest personal respect, and receiving the medal at the hands of the President, promised that it should be forwarded to its owner in due course.

The President then presented the Institute medals and prizes for 1868-9 to the successful competitors as follows:—

To Mr. Henry L. Florence, the Soane medallion.  
 To Mr. Edward J. Roche, Mr. Beresford Hope's prize of 10*l.* 10*s.*  
 To Mr. Thomas C. Wilberfoss, the Institute medal with 6*l.* 5*s.*  
 To Messrs. Edmund B. Ferrey, Thomas E. Williams, and William Howes, medals of merit in the same competition.  
 To Mr. Andrew S. Bird, the Student's Book Prize.  
 To Mr. Henry D. Shepard, the Institute (Essay) Medal.  
 To Mr. Thomas A. Britton, a medal of merit in the same competition; and  
 To Mr. Edward Locke, the special Essay Prize of 10*l.*  
 Messrs. Edward J. Roche and Thomas E. Williams were accidentally prevented from receiving their prizes in person.

The President addressed each of the candidates individually, congratulating them on their success, and recommending them to persevere in their professional studies with the same zeal which had gained them their present honours.

This portion of the business for the evening having been brought to a conclusion, Mr. Wyatt Papworth, Fellow, read a very interesting 'Notice of the Professional and Literary Works of the late Arthur Ashpitel, F.S.A., Fellow,' to which the President added a few remarks. This memoir will shortly be published in the Transactions of the Institute.

Previously to the presentation of the medals, the following gentlemen were balloted for and declared to be duly elected members of the Institute:—

	ARTHUR ALLOM (Associate).
	ROBERT R. BANKS (Associate).
	WILLIAM G. BARTLETT (Associate).
As Fellows . . .	CHARLES L. EASTLAKE, Assist. Sec.
	AUGUSTUS FRERE (Associate).
	ROBERT KEIRLE (Associate).
	SYDNEY WILLIAMS LEE (Associate).
	ROWLAND PLUMBE (Associate).
	CHARLES O. BLABER.
As Associates . . .	WILLIAM PAIN.
	ELIJAH HOOLE.
	GEO. SCAMMELL, Jun.

Before the meeting broke up it was announced by the Hon. Sec. that the following Paper would be read before the Society of Arts on Wednesday, April 28:—"On the Duties of the Architect with reference to the Arrangement and Structure of a Building," by T. Roger Smith; F.R.I.B.A., when Sir M. Digby Wyatt had promised to take the chair.

## THE RESTORATION OF GRANTHAM CHURCH.

THIS church has just been re-opened after a thorough restoration. The following brief notice of the building, from the pen of Mr. Gilbert Scott, has appeared in one of the Local Journals:—

'The church at Grantham is undoubtedly one of the finest in Lincolnshire, famed as that county is for the beauty of its churches. Its great pride is its magnificent steeple, and its most striking peculiarity is the circumstance, that vast as are its dimensions, its plan (with the trifling exceptions of the porches and the vestry) is a simple parallelogram; four straight walls being its boundaries, and not even the tower forming a projection beyond them. It seems, however, to have attained this remarkable simplicity by a complex series of changes. Its oldest portions are of the latter half of the twelfth century, at which period it seems to have been of the usual form of plain churches, being a nave with narrow aisles, and clerestory, and a simple unaisled chancel. A century later, however, it was greatly enlarged on all sides, excepting the east. The narrow aisles were removed, and aisles equal in width to the nave were substituted. Its length was increased to the westward and the present vast tower commenced, the new aisles being carried on athwart it and terminated within a fine western façade. The clerestory was done away with; the Norman side arches were replaced with lofty pointed arcades; the aisle walls were made as high as what had been the clerestory of the older nave, and the whole covered by three high-pitched and equal roofs. The chancel continued unaisled excepting a single bay on the north side where the nave ran on and formed a chapel. The north side then erected is one of the noblest specimens of its style, agreeing in character, and no doubt in date, with the "Angel Choir" at Lincoln, and having a

series of noble windows with what is known as "geometrical" tracery. The north doorway of the aisle (since covered by a porch) is a most beautiful feature. The next important alteration was the addition of an aisle to the south side of the chancel. This, with the crypt below it, was probably built about the middle of the fourteenth century. At the same time, the two eastern arches of the nave were widened and increased in height, and a stone rood-screen and loft like that of a cathedral were added. The loft was approached by two staircases of stone in connection with the chancel piers. The evidences of these staircases still remain, and the foundations of the stone screen were found during the recent works. A century later, again, the northern aisle of the chancel was added, thus completing the parallelogram which characterises the plan of the church. The south porch is of the thirteenth, and the north porch of the fourteenth century, and a sepulchral chapel (now used as a vestry) was at a much later period added on the north side of the chancel. The steeple is too well known to need description. It may, however, be interesting to remark the curious parallelism, and perhaps rivalry, evinced by the architectural histories (as gathered from the structures themselves) of the churches of Grantham and Newark. Both (so far as the existing remains testify) were commenced late in the twelfth century; both had clerestory and narrow aisles; both had towers added to the west ends in the succeeding century; and both had the narrow aisle and clerestory replaced by wide aisles and great high pitched roofs. In both, too, the wide aisles were carried on to a western façade. In the two churches, however, these transformations were not contemporaneous, but alternating, each apparently striving to go ahead of its neighbour. The raising of the tower at Newark in the fourteenth century, from its less lofty Early English form, was no doubt in emulation of the noble steeple just finished at Grantham; and, finally, the Newark people sought to leave their Lincolnshire rivals behind, by adding clerestories to the entire church far above the levels of the older ones which had been displaced. The church at Grantham had sadly deteriorated from its ancient beauty, especially in the interior. Its roofs had from time to time been all replaced and lowered, and were of heterogeneous forms and design. No vestige remained of the ancient fittings. The church was divided into two parts by a glazed partition, and its eastern portion galleried to the very eyes, and filled with high pews, while the whole of the interior stonework had been clogged with plaster and whitewash, and its surface either concealed or damaged. The works at present effected have been directed especially to remedying these evils. The entire church has been re-roofed to a suitable pitch with massive and handsome oak roof covered throughout with lead. The galleries and pews have been removed; the whole length of the interior has been again opened out; the chancel has been filled up with oak stalls; the organ has been reconstructed, and placed by the side of the chancel for the convenience of the choir; the stonework has been cleaned and repaired, and the whole interior refloored. The nave is not as yet fitted with permanent seats, but is for the present furnished with chairs. There being no chancel arch, and the piers which mark the junction of the nave and chancel being rendered at once unsightly and interesting from their being fragments of the staircases to the ancient rood loft, it has been thought best to place at this point a handsome oak screen of light and elegant design, which will both mark the division of nave and chancel, and will conceal the unsightliness of the mutilated pews, while it allows them to remain as objects of interest to the antiquary and landmarks in the history of the church. The new roofs vary in some degree in design according to the date of the parts which they cover. Those of the chancel and its aisles are the richest in decoration, and the latest in detail, while those of the nave and its aisles are of a continuous arched form and of severe and uniform character. It is most gratifying to witness the manner in which the noble character of an ancient church re-asserts itself from the simple removal of obstructions and disfigurements, and the restoration of the parts which have perished or lost their original form. An interior at once so noble or so simple as that of Grantham church can indeed scarcely be found.

### THE EXTENSION OF POPLAR WORKHOUSE.

THE foundation-stone of the building to be erected in extension of the Poplar Union Workhouse was formally laid by James Barringer, Esq., Chairman of the Board of Guardians, a few days since. A procession, headed by a brass band, proceeded from the Town Hall to the site, at the rear of the present workhouse. A marquee had been erected; and on reaching the platform, the Guardians' Clerk handed to Mr. Barringer the records and scroll, some coins of the realm, newspapers, &c., which were deposited in the cavity under the foundation-stone. Mr. Morris, the architect of the building, handed the silver trowel, and the Chairman having operated therewith in the customary style, the company adjourned to a luncheon at the Brunswick Hotel, Blackwall. The inscription upon the stone is as follows:—'This stone was laid by James Barringer, Esq., Chairman of Poplar Union Board of Guardians, on the 14th of April, 1869. John Warrington Morris, Architect; Messrs. Hill, Keddall, and Waldron, Builders.—April 14, 1869.'

The additions and alterations are, according to the drawings, of a somewhat extensive character, embodying the demolition of a portion of the old Workhouse, and the erection of additional buildings, sufficient to extend the accommodation of the Workhouse to 808 able-bodied persons. The plans are upon the double-pavilion principle, and in their practical application will provide accommodation to the following extent:—Able-bodied men, to be resident in east pavilion, 240; able-bodied women, to be accommodated in west pavilion, 240; females to be accommodated in adapted wards of present house, 100; girls in present house, 30; probationers (males), 15; probationers (females), 15; in new sick wards, 12 males and 12 females; lying-in cases, 16; lunatics, 8; girls in dormitories, 30; male and female children in dormitories, 50; the remaining accommodation to be allotted to casuals, and to the admittance of special cases. A chapel is to be erected, capable of seating 300 persons, and there are to be 20

grinding-mills, two labour yards, oakum rooms, &c. The contract sum for the works is 32,480*l.*, payable in sums of not less than 1,000*l.* at a time, at the rate of 75 per cent. upon the actual work done. The architect receives a payment of 4 per cent. upon the total outlay. The Guardians intend borrowing the sum of 40,000*l.* to meet the payments to the contractors, and the work is expected to be completed in about eighteen months.

Mr. B. Webster has been elected Clerk of the Works.

### LEGAL.

#### STANTON V. THE LOCAL BOARD OF GAINSBOROUGH.

This case was tried at Lincoln before Mr. Justice Hayes, when a verdict was found for the plaintiff, damages 180*l.*, leave being reserved to the defendant to move to enter the verdict. In the Court of Exchequer, on Friday, April 16, Mr. Field, Q.C., moved accordingly. It appeared that some new pavement was in the course of being laid down in the streets of Gainsborough by a person employed by the Board for that purpose. Some portion of new was laid and much of the old remained, and there was in consequence an inequality of surface. The plaintiff, Charlotte Stanton, was walking along the pavement and was tripped up and thrown with great force to the ground. It was contended for the defendants that the independent contractor was responsible for the negligence. The Court granted a rule.

#### BUCK V. WIGMORE.

On the 16th, in the Court of Queen's Bench, an action was brought against Mr. Wigmore, contractor, for an accident alleged to have happened by the carelessness of his servants in leaving some boards lying about on the highway. The case was tried at great length at the last assizes, before Mr. Brown, Q.C., as Commissioner, and resulted in a verdict for the plaintiff. Mr. M. Chambers, Q.C., moved for a new trial, on the ground that the verdict was against evidence.—Rule nisi.

#### PEARSON V. PLUCKNET AND OTHERS.

This was an action (in the Court of Common Pleas on the 16th inst.) to recover damages against the defendants, who are builders, for personal injuries suffered by the plaintiff. The plaintiff, it appeared, was a watchman at Haydon Square goods station of the London and North-Western Railway Company, and the defendants were employed as contractors by the railway company to repair some buildings over the gateway into the station. On January 28 last the defendants' workmen left a heavy plank resting on the top of the gates, and when the plaintiff shut the gates in the evening this plank fell upon him, and inflicted the injuries complained of. At the trial before Mr. Justice Keating at the Guildhall, it was objected by the defendants that there was no evidence that the plank had been left on the top of the gates negligently; and, further, that the defendants' workmen were the servants of the company, and that as the plaintiff himself was in the same service, he could not recover for injuries caused to him by their negligence, and the plaintiff was nonsuited.—Mr. Serjeant Parry now moved for and obtained a rule nisi to set aside the nonsuit, and for a new trial.

#### HEATH V. BUCKNALL AND CO.

In the case of Heath v. Bucknall & Co., decided by the Master of the Rolls on Friday, 16th inst., the plaintiff sought by an injunction to restrain the defendants, who are cork merchants of Crutched Friars, from obstructing certain ancient lights in a new building erected by plaintiff. Mr. Southgate, Q.C., and Mr. Bagshawe were counsel for the plaintiff; Sir Roundell Palmer, Q.C., Mr. Jessel, Q.C., and Mr. Rodwell representing the defendants. The case was argued just before the Easter holidays, when on the part of the plaintiff it was shown that before the recent alterations in Crutched Friars and the neighbourhood, he possessed premises in which there were four ancient lights. Upon the re-building of the house some larger windows were placed in the position of the old ones, but the contention was, that the plaintiff having enjoyed these ancient lights for a time, he did not lose the right to them when the house was pulled down. This being the case, the defendants, whose new house overlooked and was overlooked by that of the plaintiff, were clearly in the wrong when they proceeded to obstruct the new windows, even supposing a greater area had been taken up in their position in the new house than was the case in the old one. Plaintiff's counsel produced some photographs of the position of the premises, and called the attention of the Master of the Rolls to the inconvenience experienced by the plaintiff through the course adopted by the defendants. On the part of the defendants it was argued that no real wrong had been inflicted upon the plaintiff, whose new windows were not similar in position to those in the old building. In fact, the plaintiff himself had proceeded to alter the character of the ancient lights in the old building, and therefore he was not in a position to come to the Court of Equity for relief now.—The Master of the Rolls said: The question involved in this case opens in some measure a most important and new point for the consideration of the Court. In my opinion, indeed, it raises an entirely new question as to the construction of the law governing ancient lights. Shortly stated, it may be put thus:—Whether a man who has an easement over the land of his neighbour in the shape of access of light and air for twenty years to a small window may, under that right, build a large and entirely new structure overlooking his neighbour's land, and thereby acquire a perfectly new and distinct easement over it, which his neighbour cannot prevent when he cannot block up the other light without also injuring the light in the little pane of glass which admitted the light before the new building was erected. Certainly, before the decision in 'Tapping v. Jones' (13 Weekly Reporter, 617) by the House of Lords, it was never conceived in equity that a person could possess such a right; but we are bound by the judgment of the House of Lords, in which I must say I fully agree. Again, Vice-Chancellor Kindersley, in the case of 'The Curriers' Company v. Corbett' (2 Drewry and Smale, 355), thus deals with the subject of ancient lights:—'Where a house having ancient lights is pulled down and rebuilt, and the question arises whether the character of the ancient lights which belonged to the windows of the old house attaches to those of the new house, it appears to



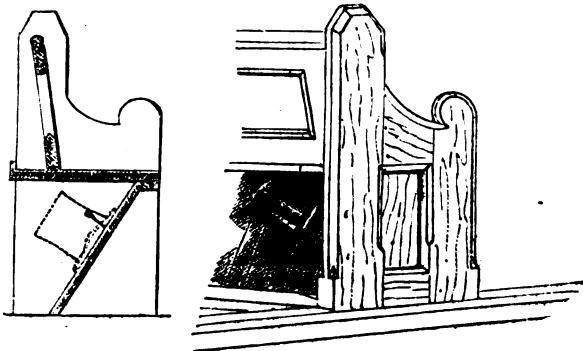
me that the principle to be applied to the solution of the question is, to inquire whether the new windows would impose upon the servient tenement, either an additional servitude to that to which it was subjected when the old house existed, or a different servitude from that which previously existed. I think the view taken by Vice-Chancellor Kindersley is the correct view of the law of the case, and 'Tapling v. Jones' does not overrule the doctrine, which appears to me to be founded on immutable principles of equity. 'Tapling v. Jones' decides this—that no alteration of the ancient light will justify the owner of the servient tenement in obstructing it; but whether the obstruction of that light is a matter to be estimated in damages or restrained by injunction is, I conceive, a totally different matter. It may no doubt be laid down as a general axiom, that where a man possesses a right to light and air over the property of another, the obstruction of which is punishable at law in the shape of damages, a Court of Equity will by an injunction prevent the obstruction; but when the owner of the ancient light so deals with it as to alter its character, and converts it into a totally different easement over his neighbour's land, and one which prevents him from enjoying his property as he might have done at any time before the ancient light was so altered, then I am of opinion that the owner of the servient tenement is not debarred from the enjoyment of his land as theretofore, but that if in asserting such enjoyment he unavoidably interferes with the ancient light of the owner of the dominant tenement, then the only compensation that owner can obtain is in the shape of damages, and he is not entitled by the insidious use of his own property to deprive a neighbour of a portion of that neighbour's property. He is still entitled to compensation for the obstruction of the light and air which he formerly enjoyed; but by his own act he has deprived himself of the right to call for the aid of a court of equity to assist him. These are my opinions, and I certainly think it advisable that the point should be settled. There are, however, two rooms containing windows in the plaintiff's new building, to which the considerations I have stated do not apply. These rooms were each 10 feet 3 inches by 10 feet 8 inches, and they were used, it was said, as rooms in which writing was to be done; but I do not think they could be used by their situation for any such purpose. They were 26 feet from the defendants' building also, and in my opinion the diminution of light is not sufficient to induce me to interfere so far as regards them. The bill will be dismissed; but I shall give leave to the plaintiff to bring such action for damages as he may be advised.

## Correspondence

To the Editor of THE ARCHITECT.

### Church Benches.

SIR,—There are many small annoyances to which we are subjected from childhood, which from custom come to be borne without much protest.



Among these, I think, I may reckon the weekly onslaught on hats which takes place at church, either from our own feet or those of our neighbours. I sometimes fancy there must be a conspiracy between the guild of hatters and some tremendously 'conservative' old fairy, who hate change and improvement, to keep us in a state of serfdom to a conventionality which, were it told of a nation wearing turbans, would much astonish us.

Some attempts were made in the time of square pews to provide accommodation for hats, in the shape of wrought-iron ornamental standards, painted and gilt, and many of them of no mean design; but these were luxuries chiefly confined to parish dignitaries. At the same time, we also find the walls of aisles and galleries furnished with pegs on which to hang our silks and beavers; but though I object to plain whitewashed walls in a church, and daresay the light and shade on hats may be a fine study in sciography, I do not think intermittent rows of them between the windows, or even on the window sills, are the most appropriate wall decoration. Still the general alternative is not a pleasant one, of putting the hat under the seat, whence it comes after service kicked, scratched, and covered with dust or mud.

I have, in one or two places, seen slips like the runners of drawers fixed under the seat, in which the rim of the hat is to run; but hats are not all of the same size—mine being small has slipped out, and come to grief. Again, these are seldom in number sufficient for every member of the congregation to have one, and in that case you are sure to find that the nearest one to you is in front of a lady.

These lucubrations, as Addison would have called them, set me thinking whether a simple contrivance could not be found which would lessen the evil in some degree.

I have adopted the method shown in the accompanying diagram in three churches, built or altered by me, and I believe it has satisfactorily answered the purpose. Bench ends 17 inches or 18 inches wide, space between 16 inches, seats 14 inches, are about the minimum dimensions, I think, for comfortable seats.

The raking boarding underneath the seats, on which is fixed a nail or peg in front of each person, is a support to the seat, rendering a less number of standards necessary. It provides hat room out of footway, yet allows space for the feet of the person in front, when kneeling, and place for a moderately-sized hassock for the one behind.

Such is my method. Others may have adopted a similar or better plan, for all I know; but I think these hints, if you choose to publish them, may, if they produce no better result, cause some folks to have one wound less in their hats on a Monday morning.

I am, Sir, yours faithfully,  
27, Great James Street, Bedford Row. GEORGE ROW CLARKE.

### Josiah Wedgwood.

SIR,—In the excellent, and in most respects discriminative, notice of Josiah Wedgwood which appeared in your issue of April 17, I observe one or two passages which, I think, convey very erroneous impressions as to the great potter's labours, and the spirit in which he worked. One is to this effect:—'It is remarkable how all his efforts were directed toward the one object of making pottery beautiful.' Surely if Wedgwood had one object in view beyond another, it was the rendering his wares perfectly adapted to their use. I need hardly point out how his teapots are so balanced that the lid does not tumble off till the long axis of the pot is absolutely vertical; how no drop hangs to the spout of pot, jug, or ewer; how his plates are so fitted into one another that, though they be piled up by scores, the superincumbent pressure never breaks those below, although made of thin earthenware; how the handles of his pitchers and jugs were so placed that the fluid is delivered without effort by the spout, and never over the sides of the mouth; how his plates had rims for salt and mustard, so contrived that these did not mix with the gravy; and how his cups did not slip about in the saucers. These, and a hundred other little characteristics of his articles, show that he had a keener eye for purpose than any previous or subsequent potter.

Also far more remarkable than his love of the beautiful was his desire to apply pottery to purposes hitherto unattempted. His invention of the pyrometer and of the fountain inkstand are two cases out of many of considerable inventive powers, quite independent of love of beauty.

Another erroneous observation is that 'Wedgwood never attempted the manufacture of porcelain.' Tea and coffee services are not rare, made in very fine porcelain, and especially services with British birds and garden flowers painted on them.

Another observation to which I object is that 'neither his enthusiasm nor his desire to extend his trade ever induced him to carry on an unprofitable branch of manufacture.' Now I never heard it doubted that the production of busts and cameos, and especially the portrait series, involved a very heavy loss; indeed, no one could look over the trial models and moulds of these (as I have done) without being convinced that the outlay was very great, and the returns *nil*. He delighted in that kind of work, and pursued it as a recreation. The history of the Portland Vase, too, is a protest against such a statement.

I entirely agree with most of what your contributor states as to Wedgwood's love of the pseudo-classical, the patchy nature of much of his work, and the false taste of a good deal; his little appreciation of high art, and (considering his love of the beautiful) his unaccountable neglect of such artists as Flaxman; but I am surprised to find no allusion made to Wedgwood's efforts to introduce natural objects, especially plants, insects, shells, and birds, effectively and artistically into his cheapest as well as into his more expensive household wares. Like so many self-educated men, Wedgwood's was a very incomplete and often incoherent character. A keen tradesman and a clever adapter, with a wonderful eye for colour, form, and purpose, he never aspired to be a true artist, nor to cultivate art from a higher motive than a desire to please. Hence his commonest pieces, no less than his rarest, whilst gratifying the love of what is beautiful to the eye, and perfect as regards manipulation, fail altogether to elevate the taste, or to suggest the idea that their maker's artistic conceptions were either of a very high natural or cultivated order.

Kew, April 21, 1869.

J. D. HOOKER.

### Is a Supply of Good Air possible in Large Cities?

SIR,—As you did me the honour of inserting in last week's 'ARCHITECT' my letter to Sir Charles Trevelyan with respect to the question, 'What is the best site for the New Law Courts?' perhaps you will favour me with a little space when treating of a matter of still more general interest. I do not propose to trespass much upon your columns; since, indeed, my proposition would not be accepted, after any amount of disputation on my part, by those who would deny that the merits of my suggestion were self-evident.

Mr. Ruskin some ten years ago, I think, recommended the adoption of the Gothic style of architecture by builders generally, no matter whether the contemplated structure was to be a public building or a row of private houses. This proposal did not meet with much attention, simply because mere ornament (so far as it can be dissociated from utility) never can very largely attract the sympathies of any great number of persons. I am now going to propose, through the medium of your Journal, the general adoption of a species of *façade* which will be not only much more beautiful than anything proposed by Mr. Ruskin, but which, besides costing little, can actually bring pure air to the door of every inhabitant in every city in the world. This 'towns' improvement' is nothing more or less than the general planting of ivy and other similar plants in the fronts of buildings of every description, particularly in the case of private and non-trading streets. But there is really no physical difficulty in the way of rearing such plants, or shrubs shall I call them? even in the most active thoroughfares. Did the

Government exert itself to have this urban reform adopted, there is not the slightest ground for doubting that towns would become equally as healthy as the country.

It is unnecessary for me to proceed to prove that the vital properties of our atmosphere are derived from plants and vegetable life, and, to some slight extent, from the waters of the ocean. The want of good air, then, in cities is owing to our forgetfulness of the primary and natural sources whence good air is derived. I used to hear a tradition, when my experience was yet unripe, that the venison which tasted so deliciously in the City taverns was really reared in cellars underground in the Minorities. If my suggestion, however, be adopted, we may fairly look for a *rus in urbe* in respects more important than the production of venison—and that is, in the preservation of health and the prolongation of human life.

Finding a large portion of the legal profession in favour of the Carey Street site for the Law Courts, I began to consider whether there could be any remedy for the pestilential air which must be breathed in courts erected in so unhealthy a district. I know not whether my suggestion, much less the history of its development in my own consciousness, may be interesting to your readers. But I have been led to consider the general question of air in cities; and, I think, certainly nothing can be said against my views on the point, except, perhaps, that very important effects could not be expected to ensue from the adoption of so simple and inexpensive a plan.

Hoping that you will excuse my thus trespassing on your columns,  
I have the honour to be, Sir,

Your very obedient servant,

JOHN P. O'HARA.

Gray's Inn, April 15, 1869.

## NEW BUILDINGS AND RESTORATIONS.

**The Bengal High Court.**—This building, which is now in course of erection, consists of a rectangular parallelogram, covering nearly three acres of ground. It has three storeys, and is 88 feet high from the road to the parapet. The large central tower is 36 feet square, and 230 feet in height. The interior quadrangle has vaulted cloisters, or corridors, all round on the two lower storeys, whilst on the third storey the corridors are on two sides only. There are six large carriage entrances. The two court rooms will be much larger, when completed, than the House of Commons or the House of Lords. The rooms on the ground floor are set apart for clerks' offices, principally natives, and the heavy records of the courts. The tower above the ground floor will be used as the depository for wills and other valuable records. On the first floor there are in all seven courts of law, with retiring rooms for the judges, a judges' library, a bar library, with consultation room and retiring rooms, attorneys' rooms, native pleaders' rooms, petty jury rooms, a private office for the registrar, and a room for the Chief Justice's clerk, with a number of bath rooms and other subsidiary conveniences. There are chambers also which will be let to barristers.

A New Post-Office for Rochester and Chatham is decided on.

At Sunderland the foundation-stone of a new United Presbyterian church has been laid for the congregation of the Rev. Mr. Angus. It is to be seated for about 900, and to cost 3,500*l.*, exclusive of the site.

**The New Assembly Room, Byde (I. of W.)**—This Assembly Room, and the approaches thereto, have been completed, with the exception of a little painting and a few minor matters.

**St. Michael's Church, Dumfries.**—It has just been proposed, in the Dumfries Town Council, that the plans for reseating St. Michael's Church be reproduced and reconsidered. The Clerk hoped that the Council, for the sake of consistency, would not entertain any such proposal, and explained that the plans had not only been submitted to the heritors, but they had been before the Presbytery and were approved of.

**Salisbury Cathedral.**—It has been decided to proceed with the restoration of the Lady Chapel of this Cathedral forthwith.

The Railway Station at Winchester has been considerably increased in size, and more accommodation in the waiting rooms has been accorded.

**Congregational Chapel (I. of Wight).**—On the 14th this place of worship was opened by an afternoon service, after which a public tea was given at the Foresters' Hall, which was crowded to excess.

**Union Church, Hanwell,** has just been opened. The style is Geometrical Gothic of the period of Edward VI. C. Jones, Esq., of Ealing, the architect; Messrs. Gibson Bros., builders.

The Foundation-stone of a new place of worship has been laid by Lord Grosvenor for St. Barnabas district, Pimlico; and a new church has been opened at Matlock Bath, for the poor of the parish. The seats are to be free.

At the late Meeting of the Florence Land and Public Works Company, the report stated that works to the extent of 172,740*l.* have been completed and paid for, yielding a satisfactory profit; while with regard to the building land in the possession of the company, consisting of about seventeen English acres in the city, various operations have already been carried out calculated to lead to a good return. A proposal to issue 50,000*l.* in 6 per cent. obligations at the price of 80, redeemable at par by annual drawings within ten years, was agreed to.

The Central Pacific Railway Works, to protect the line from the heavy falls of snow to be expected in certain sections, consist of a shed-covering, twenty-two miles in length. This shed is sixteen feet in width, and sixteen feet in height, not including the pitch of the roof. The sides are enclosed, and were it not that daylight penetrates through the interstices, the whole would be like a huge tunnel. The building is braced together in a peculiar manner, and is, in addition, firmly bolted to the rocks near the face of a cliff. Where snow-slides are to be feared, an extension of the roof has been carried to the cliffs, so that falling masses shall pass over the building, and lodge upon the other side.

**The Church on Southernhay, Exeter,** belonging to the Independents, lately destroyed by fire, was being erected by Messrs. Bragg and Dyer, of Paignton. The foundation-stone was laid in June last by Mr. Alfred Rooker, of Plymouth.

**Grove Road Chapel, Victoria Park,** was built for the Baptist denomination, and was a very ecclesiastical Gothic building, without school-rooms or sufficient vestry accommodation. It has now been sold, and another place of worship will shortly be erected, the congregation holding possession of the present structure until November.

The Presbyterian congregation of Dr. Roberts at Carlton Hill, St. John's Wood, have commenced to build a new place of worship for themselves. It is to have a spire, and to be seated for 570 on the ground floor.

**Canton, Cardiff.**—The foundation-stone of a new chapel has been laid at Canton, Cardiff. The cost, including several class-rooms, is estimated at 2,600*l.*

**Chesterfield** is to have a new chapel, the foundation-stone having been just laid. The building belongs to the United Methodist Free Church, and is intended to seat 850 persons, at a cost of 2,500*l.*

**Bethesda Chapel, Lynn.**—The corner-stone of new schools in connection with this place of worship has been laid by J. Brough, Esq. The building is estimated to cost 470*l.*

The New Church for the United Presbyterian body, in Lower Abbey Street, Dublin, was opened a few days since. The cost will be 4,800*l.* Mr. William Fogerty, architect; Messrs. Crowe, builders.

The New Offices of the Royal Insurance Company in Dame Street, Dublin, erected from the designs of Mr. W. G. Murray, have been finished and handed over by the contractor, Mr. John Nolan, of Meredyth Place.

**New Chancel and Alterations.**—On Sunday the new chancel and additions to the church of St. James (Roman Catholic), Marsh Lane, Bootle, near Liverpool, were solemnly consecrated. There are choristers' stalls of pitch pine, and an altar of marble and alabaster. A quaint and massive arch opens into the nave of the older church, and the roof is of curved and moulded coupled rafters. The work has been executed by Mr. Ray, builder, of Liverpool, from the designs of the architects, Messrs. M. E. Hadfield and Son, of Sheffield.

**Hertford.**—St. Andrew's Church is to be rebuilt. The chancel and transepts alone will cost 2,223*l.*

**Dorking.**—The new aisle on the south side of St. Paul's Church has been recently completed. It is in the Early Decorated English Style. The church was built in 1857 at the sole cost of the late Mr. J. H. Labouchere, who also added an aisle on the north side about five years since.

**Manchester.**—The foundation-stone has been laid of a church in the Waterloo Road, Cheetham, dedicated to St. John the Evangelist. The church, the site and structure of which are to cost 10,000*l.*, is to be built and endowed at the cost of Mr. Lewis Loyd, of Monk's Orchard, Surrey. The style will be Early Gothic of the thirteenth century. The tower will rise to a height of 130 feet.

**Pelton (Durham) church** has received the addition of a new scuth porch, through the liberality of a parishioner. It is in the Early English style.

The foundation-stone of a new bridge over the valley of the river Hebble, at Halifax, was laid with much ceremony a short while since. The new bridge, which is to be of iron, with two spans of 160 feet, is to be built by the corporation of the town at a cost of 21,000*l.*

**Macclesfield Militia Barracks.**—At the last Knutsford Quarter Sessions, Mr. J. U. Gaskell moved for a grant out of the county stock, not exceeding the sum of 250*l.*, for the purpose of repairs and alterations of the Macclesfield Militia Barracks. The grant was allowed, together with an additional amount for fixtures.

**The New Asylum at Caterham.**—The ceremony of laying the foundation-stone of the new asylum at Caterham, one of the buildings to be erected under the Metropolitan Asylums District Act, 1867, for the accommodation of the imbecile or infirm poor of London, took place on Saturday. In the cavity of the stone a vase of coins was deposited, and also a list of the managers, a copy of the Act of Parliament, &c.

**The New Dead Meat Market at Smithfield.**—It is stated that a portion of the iron work in the New Dead Meat Market is defective, and that the works lately in progress have been stopped, pending the results of an inquiry.

**New Blackfriars Bridge** is to be opened in July next, a month in which the inauguration of the Holborn Viaduct is likewise promised.

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

### Notes for Connoisseurs.

Seldom, perhaps never, have valuable collections of world-wide celebrity been brought to the hammer in Paris in such rapid succession as those the fate of most of which we have noticed in these pages. The auction of the Sout collection began the series, and then followed those of Pourtales, De Morny, San Donato, Delessert, and now we have to mention yet another no less important—namely, that of M. Ed. Fould, who breaks up his establishment in order to live in the 'sunny south.' The sale lasted four days, and included, (1st day) the pictures, (2nd day) plate, (3rd day) cameos and antique jewellery, &c., and (4th day) snuff and bonbon boxes, of which there were no less than sixty-eight, and lastly, a small but costly series of Limoges enamels (including an oval *plaque* 16" x 12", by Jean Courtois), statues, china, bronzes, &c. We will content ourselves by noticing the chief

pictures only, although the catalogue contained but fifteen, which together fetched 251,850 francs, or rather over 10,000. The highest bid, amounting to 63,000 francs, was for a *Lancet*; the next highest was 52,000 francs for a *Pater*; both sylvan scenes, formerly in Lord Pembroke's collection, and now bought by the Marquis of Hertford. A third picture caused much lively bidding, partly for its own sake, partly from the fact that it has successively belonged to the Duchess of Orleans and Prince Demidoff. This was a 'Samson amongst the Philistines,' by Décamps, and was bought by M. Bischoffsheim, the well-known Brussels banker, for 40,500 francs. A *Wouvermann*, 6' 2" x 4' 4", realised 20,000 francs (to Count Tolstoy); a Meissonnier 14,200 francs; and 'Poultry' by Hondecoster and by Jean Weenix were both bought by Mr. Rutter, for the South Kensington Museum, for 14,200 francs.

#### The Institute Gold Medal.

It may be interesting to our readers to see a list of some of the principal published works of Professor C. R. Lepsius, to whom Her Majesty's Gold Medal was presented last Monday. We give them chronologically arranged:—

- Lepsius, C. R. *Das Todtenbuch der Aegypter nach dem hieroglyphischen Papyrus in Turin.* Leipzig. 4to. 1842.
- Reise des Prof. Lepsius von Theben nach der Halbinsel des Sinai vom 4. März bis zum 14. April 1845. Berlin. 8vo. 1846.
- A Tour from Thebes to the Peninsula of Sinai, &c. Translated from the German by C. H. Cottrell. London. 8vo. 1846.
- Die Chronologie der Aegypter. Einleitung und erster Theil; Kritik der Quellen. Berlin. 4to. 1849.
- Denkmäler aus Aegypten und Aethiopien. 12 vols. Plates. Fol. Berlin, 1849-59. [This is the only work of Lepsius in the library of the Institute.]
- Discoveries in Egypt, Ethiopia, and the Peninsula of Sinai (1842-45), during the Mission sent out by His Majesty Frederick William IV. of Prussia. London. 8vo. 1852.
- Letters from Egypt, Ethiopia, and the Peninsula of Sinai. Translated by Leonora and Joanna B. Horner. London. 8vo. 1853.
- The XXII. Egyptian Royal Dynasty, with some Remarks on the XXVI. and other Dynasties of the New Kingdom. Translated by Wm. Bell. London. 8vo. 1859.
- Aelteste Texte des Todtenbuchs nach Sarkophagen des ägyptischen Reichs im Berliner Museum. Berlin. 4to. 1867.

#### Indian Railways.

From the financial statement by Sir Richard Temple, before the Legislative Council of the Governor-General of India, it appears that during the past official year the gross traffic receipts of Indian Railways were so much less than had been expected, as to entail upon the Government the payment of nearly half-a-million (as guaranteed interest on railway capital, less net traffic receipts) more than had been estimated for at the commencement of the year. Notwithstanding this temporary drawback, for temporary it will most probably prove, it is satisfactory to find that the half million of gross receipts, which the Indian railways returned in 1860, has now grown to near six millions, and the quarter of a million of net receipts, for the same period, to between two and three millions; thus clearly proving the appreciation in which those lines of railway are held by the natives; the traffic during the past year having amounted to some three millions of tons of goods, and about sixteen millions of passengers. On the 77 millions of capital raised for the construction of railways in India, there accrued during the past year 3½ millions of interest due to the shareholders under guarantee from the Indian Exchequer. The gross traffic earnings of the year on the 4,000 miles of railway opened in India amounted to 5½ millions paid into the Imperial treasuries, which sum was, however, reduced by exchange to 5¼ millions. The working expenses, amounting to 3 millions, left 2¼ millions of net traffic receipts, which latter sum being deducted from the 3½ millions of guaranteed interest, leaves a sum of 1½ millions debit to the finances of the Indian Government for the year 1868-69. It is expected that, as the construction of railways in India will be going on probably at the rate of 3 or 4 millions annually for some years to come, this item of 1½ millions for guaranteed interest will not presently decrease, but that it may increase to 1½ millions.

The net traffic earnings for the current year will, it is anticipated, be sufficient to return the following rates of interest on paid up capital, namely on the East Indian Railway 4½ per cent., on the Great Indian Peninsula 3 per cent., on the Madras Railway 3 per cent., and on the other lines from 1 to 2 per cent.

#### Piercing the Isthmus of Corinth.

With regard to the project of cutting through the Isthmus of Corinth, it is thought at Athens that the present moment is peculiarly apropos, in as much as the powerful machinery employed upon the Suez Canal may soon be had very cheap, and plenty of workmen will be out of employ and glad of this new 'job.' A glance at the map of the Mediterranean will show how important such a canal would become for the commerce of the French, Italian, and Austrian harbours with Smyrna, Constantinople, and the Black Sea. The harbours at either end would not require any great outlay, whilst the Canal itself would only be 3½ English miles in length. The chief difficulty will be to cut through a hill of chalkstone, a mile wide at its narrowest point, and 250 feet above the level of the sea. It is calculated that a channel 150 feet wide and 40 feet deep will require the removal of about 12 million cubic yards of earth and rock. There can be no doubt that a canal would be of far greater real utility to the Greeks than an ironclad fleet wherewith to drive the Turkish fleet from the Archipelago.

#### The Right Use of Works of Art.

The Louvre, with all its recent additions, and including the continuation of the great gallery by the side of the river, now nearly ready, possesses no less than 142 rooms and galleries for the exhibition of works of art and antiquities; yet so immense is the collection belonging to this grand national museum that hundreds of pictures remain in the store rooms for want of wall space to hang them. This is not surprising when we learn

from a report by the Comte de Nieuwerkerke, superintendent of the Beaux-Arts, that during the last fifteen years 45,000 pictures, statues, and antiquities have been added to the store.

The Government has wisely determined that the surplus treasures of the Louvre, whatever be their value, shall no longer be hidden away in store rooms, but made subservient to the purposes of art education and the cultivation of the public taste. The Louvre can scarcely be enlarged, and besides, many of the works in question would be little more than duplicates in effect, as works by nearly all the masters are to be found on the walls; the palaces are well stocked with works of art; and it has been resolved that those pictures and other productions of art which are not required in the great Paris gallery, shall be distributed amongst the churches and museums of those towns which have shown a desire to encourage art by the establishment or the retention of their local galleries, by exhibitions and other means.

With the view of carrying out this judicious arrangement, lists are now being prepared by the conservators of the galleries of the Louvre of such works as may be spared from that collection, and these lists are to be revised by a special commission consisting of twelve members, with Count de Nieuwerkerke as president. The members of this commission represent the chief bodies in the state and the Academy of the Beaux-Arts, the members being M. Chaix d'Est Ange, senator; M. Mérimée, senator and member of the French Academy; M. A. Le Roux, vice-president, and Comte Welles de la Valette, member of the Corps Législatif; the Vicomte de Rougé, of the Council of State; with five artists, namely, MM. Cabanel, Gérôme, Gatteaux, Guillaume and Cavellier, and the Vicomte Henri Delaborde, conservator of the Print-room in the Bibliothèque Impériale, all members of the Académie des Beaux-Arts. When this commission has decided on the works to be dispersed, the Senate will be asked to grant the Government permission to dispose of this portion of the property of the Crown, and many a provincial gallery will receive a welcome addition to its stores.

#### A Sketch of the Seine and the Marne in Old Times.

M. Alphand, engineer of the Bois de Boulogne and all the public gardens and promenades of Paris, has made a series of researches respecting the early condition of the Seine, and has arrived at the conclusion that it was formerly a mightier river than the Mississippi.

Deposits of river-sand and shells have been found on the heights around Paris, at Charonne and the Barrière d'Italie, amongst others. Between these two points the stratum of sand is about four miles wide, and the Seine, it is assumed, must have covered this entire space. It covered the plain of Vincennes, where many sand-pits are now being worked which formed part of the ancient bed of the river, especially near the village of Montreuil, famous for peaches. These sands abound in remains of extinct animals—elephas primigenius, rhinoceros etruscus, hippopotamus major, carus elephas, bison europæus, &c.

The Seine is now curved in a most fantastic manner, and divided in many places into several channels; but it appears in old times to have flowed straight through Paris, and to have been nearly twenty miles wide at that part where it flowed over what is now called the Plains of St. Denis, that great desolate tract of land seen behind Montmartre.

At present the course of the Seine from Paris to Rouen is 152 miles, and from Rouen to Havre 76 miles—in all 228 miles; but in ancient times its course was direct, and did not exceed 142 miles in total length. At high-water, the maximum outflow must, according to M. Alphand, have been 60,000 tons per second, or twenty-four times that of the present river.

In consequence of the increase in the incline of its bed—the fall is now between six and seven inches per mile, on the average—the rapidity of the Seine became so great that the level was gradually lowered, the windings of the river were produced, little by little, and the banks left as they are at present.

In constructing the aqueduct for bringing the waters of the Dhuis to Paris, the sand deposits in the valley of the Marne, which are at an altitude of rather less than 180 feet, were carefully examined, and the inference is that this river also was of immense size. Those who saw the valley of the Marne, as we did three years since, during the inundations, might form some idea of what that now modest stream was in the olden times; for many miles by the side of the railway, and over a vast country on the confines of the forest of Fontainebleau, the waters lay in broad sheets over the valley, factories and buildings of all kinds stood several feet deep in water, all appearance of hedges, walls, or fences was obliterated, and the whole crop of new-mown hay, mingled with uprooted trees, floated on the surface of the turbulent flood.

#### English Honorary Members of the Royal Academy of Vienna.

There appears to be some uncertainty as to what English artists have been honoured with diplomas appointing them Honorary Members of the Royal Academy of Vienna; but with regard to architects we can, speaking on good authority, state that in addition to Mr. Gilbert Scott and Mr. Street, whose names we have already announced as thus recognised, the distinction has also been conferred on Mr. Waterhouse, Mr. E. M. Barry, and the veteran Professor Donaldson.

#### America.

An evidence of the improved industrial and financial condition of the South is afforded by the vast amount of building and property improvements going on in New Orleans and its suburbs. What is remarkable, there has never before been a time when buildings could be erected at so little cost in that city. All building material which is produced in the South may be now obtained for the same—if not lower—prices in greenbacks than before the war in gold. Every article, however, that comes from the North is fully up to the gold standard, and has always been so. In consequence of the cheapness of lumber, &c., parties who have never before considered themselves able to build, are now erecting residences of their own. This is certainly a fortunate state of things for the residents of the Crescent City.



**Abyssinian Goldsmith's Work.**

The Abyssinian war, however satisfactory in many respects, was eminently disappointing as regards literature, architecture, or in short any of the humanising arts. From the mysterious land of Prester John one could not help expecting, or at all events hoping, that some traces of royal and ecclesiastical dignity might be found worthy of its mythic mediæval fame, nor could the voracious narratives of Bruce and later travellers entirely destroy these hopes. The unerring evidence of photography soon gave a rude shock to any such anticipations by showing us churches which resembled badly-constructed barns or haystacks, and gospels whose illustrations could not pass muster for the heading of a Seven Dials ballad. At length, after the capture of Magdala, the arrival of the royal insignia of Theodore dispelled all illusions that might still linger as to possibilities of barbaric pearl and gold yet to be found. A royal robe of coarse and gaudy silk and gold, of European make, a seal which honestly announced itself as the work of a well-known London house, and a cap of red velvet and gold thread which might have issued from the property-room of a transpontine theatre—these were all which betokened the royal state of the terrible monarch. It seemed, indeed, that the Abyssinians had attained to that condition of pure reason sighed after in Pope's 'Martinus Scriblerus,' and could conceive of abstract power unaccompanied by outward symbols, even of a Lord Mayor without fur and chain. A late arrival at the South Kensington Museum tends, however, to show that the eaters of live beefsteaks are not altogether transcendental or unaffected by outward pomp. The actual royal diadem of Abyssinia, or what may fairly be presumed to be such, was taken at Magdala, and having been transferred by the Secretary of State for India to the authorities of the South Kensington Museum, is now to be seen among the other objects brought from Abyssinia. The shape of this somewhat cumbersome head-dress much resembles that of a cupola: the material is silver-gilt filigree, of the same character as an armet, a coffee cup-holder, and other objects in the same case, and which travellers in Nubia and more Southern provinces will at once recognise as a special manufacture of those districts. That the work of the crown is somewhat more clumsy than that of these smaller specimens is not perhaps unsatisfactory evidence of its genuineness as pointing to a more remote date, when their artists may have been less technically skilful than at present. Round the base are some ornamental pieces of similar work set with what may be garnets and emeralds; but look, at any rate, through the glass, suspiciously like pastes. A small painting of a cherub's head under crystal—its companion seems missing—is interesting even in its rude colouring. On the upper part of the dome are four plates, of silver gilt, showing the figures of the Evangelists with their respective emblems, drawn in the same feeble style as characterises all the religious figures on the crosses from that country. These ornaments, and the cherubs' heads above-mentioned, are, however, not without significance as typifying the union of king and priest in one person common in many ancient nations, and may, perhaps, be the sole surviving feature of the mythic priest-king of mediæval legend. A somewhat ludicrous effect is produced by a plain silver tube, which, issuing from the top of the crown, appears intended to act as a ventilator. Its real office was doubtless that of a plume-case or socket, as is shown by a screw which descends internally, and which, instead of being cut in the thickness of the metal, as with us, is formed by a thin silver wire applied with great skill to its surface. Would not the effect of the crown as really worn be rendered more obvious by the insertion of a plume? We offer this suggestion. Altogether this may be safely pronounced the most interesting of the spoils which that singularly barren and savage territory has yet rendered to our researches.

**Ceylon Railway.**

The working of this line of railway seems calculated to prove very successful from a financial point of view; the receipts on the 75 miles opened having amounted, in October last, to 48*l.* 13*s.* 8*d.* per mile, a sum considerably in excess of the earnings of any Indian line of railway.

**Interesting Discovery.**

Some remains of Greek art have recently been exhumed from the bed of the river Indus near a village called Rokri, in the Bunnoo district. Three beautifully sculptured heads which were found among them have been presented to the Lahore Museum.

**General.**

**Surveyorship of Liverpool.**—With regard to the lately announced withdrawal of Mr. Robson's resignation, a correspondent informs us that some modifications in the duties of the office have been proposed, and are under consideration, but that the whole subject has been referred to the Finance Committee of the Corporation.

**Berkhamstead Industrial Exhibition.**—It is proposed that another Industrial Exhibition of local manufacture and works of art be held in connection with the Berkhamstead Mechanics' Institute in 1870.

**Yarmouth Castle.**—This ancient castle, built in the reign of Henry VIII., and repaired in 1855, is now completely dismantled.

**Antiquarian.**—Excavations were carried out lately at Pompeii, in the presence of the Prince and Princess of Piedmont. Senator Professor Fiorelli caused the earth to be removed which covered some houses. There was found in one of them a bronze seal, the length and thickness of a finger, with the name of its owner: 'Pantera, son of Cajus and of the Flaminian tribe.' They also found a wooden casket, encircled by bands of bronze with graceful decorations; amongst others six heads of the same metal and of fine workmanship; the wood was almost entirely consumed by the damp,

excepting parts near the hinges. They also discovered a brazier in smooth bronze, objects in glass (most of them in pieces), and a woman's necklace in blue glass. These objects indicate that their owner enjoyed a certain position of ease. They did not present any remarkable appearance.—*Athenæum.*

**The Caverns at Guildford.**—Through the exertions of Mr. Macdonald (late Corporal Macdonald, Royal Engineers) the remarkable caverns at Guildford have been to some extent cleared of the débris with which they were found encumbered. The passages leading to the different subterranean chambers can now be traversed with ease, and inspection made under conditions more favourable to the formation of a right judgment as to the real object and use of excavations which have elicited so many conflicting opinions. The work of clearance has not yet proceeded far enough to admit of an examination of the floors. When these are reached, it is expected that discoveries will be made which will place beyond dispute the purposes to which the chambers were originally applied. A safe place of access is being formed for the public, and, if the necessary consent can be obtained from the owners of the soil, in all probability the caverns will be opened for the inspection of the curious during the coming summer.

**Discovery of an Ancient Saltpit at Weymouth.**—The ravages made by the sea on the shore at Smallmouth have lately brought to light what is evidently one of the saltpans or *salinæ* in use by ancients for the manufacture of salt. It is a circular trough, six or seven feet in diameter, formed of well puddled clay. It has two openings lined with slabs of Kimmeridge shale to a thickness of about two inches, one of these channels being covered by a slab of similar material. The outer edge of the basin sloped for about two feet until it reached the level of the ground. About fifty yards distant was uncovered some masonry, apparently of Saxon construction, but unfortunately it was destroyed almost as soon as discovered and the stones carried away. Portions of British-Roman pottery were also found near, and some perforated stones, which are supposed to have been worn as charms. The mention of salterns or saltpans occurs frequently in the early history of Weymouth, and it is on record that King Athelstan, in remembrance for the murder of his brother, granted to the Abbey of Milton 'all the water within the shore of Weymouth, and half the stream of Weymouth out at sea, twelve acres in support of the wear and its officer, and three theynes, and a *saltern* by the wear.' The locality indicated is probably the neighbourhood of Wyke, and if so, it is possible that the relic lately unearthed formed part of King Athelstan's grant. Many an antiquarian 'air-castle' has been built on a far less tangible foundation.

**Foreign Trade of Belgium.**—The principal (the enumerated) exports from Belgium in the year 1868 show an increase in value of 7 per cent. over the year 1867, and the principal imports an increase of 12 per cent. There were exported in the year 1868 3,758,622 tons of coal, or at least very nearly that quantity, the tonneau being 40 lbs. less than our ton; 3,611,721 tons to France; both quantities are larger than those of 1867, but not so large as those of 1866. Belgium imported in 1868 the unusual quantity of 396,281,584 kilogrammes (of 2.20 lbs. each) of iron ore and filings; but the export of iron ore and filings exceeded 136 million kilogrammes. The iron exports of Belgium in 1868 comprised 70,550,802 kilogrammes of rails (chiefly to Russia), 14,412,891 kilogrammes sheets, and 70,615,781 kilogrammes of other kinds of iron, including wire, a large proportion of these exports going to France; 10,611,895 kilogrammes of nails, and 6,357,206 kilogrammes of other iron wares, the import of iron wares into Belgium (not including anchors and nails) amounting to 1,810,301 kilogrammes. Belgium exported also in 1868 arms of the value of 14,871,527 francs, chiefly to France; 39,234,996 kilogrammes of window glass (17 millions to the United Kingdom), and plate glass of the value of 1,832,104 francs; 17,689,358 kilogrammes of machines and machinery, the quantity in 1867 being less than 11 millions, and the import of machines and machinery in 1868 amounting to 4,230,014 kilogrammes, of which 2,727,555 kilogrammes were from the United Kingdom, our import of machines and machinery from Belgium amounting to 714,713 kilogrammes. The export of zinc, unwrought, from Belgium amounted to nearly 34 million kilogrammes in 1868. Of paper Belgium exported 11,766,110 kilogrammes, of which 7,337,861 went to the United Kingdom; the import of paper into Belgium was less than 800,000 kilogrammes. Belgium imported 3,144,665 kilogrammes of rags, and exported 4,234,626 kilogrammes. Belgium exported 13,581,263 kilogrammes of refined sugar of all kinds, and 27,076,634 kilogrammes of raw beetroot sugar; and imported 17,967,926 kilogrammes of raw sugar of all kinds, chiefly from Cuba and Java, and 1,184,449 kilogrammes of refined sugar. Of textile manufactures the accounts show an export of cotton tissues amounting to 2,357,605 kilogrammes, and an import of 889,037 kilogrammes, besides tulle, lace, &c., an export of 3,396,054 kilogrammes of tissues of flax, hemp, and jute. The year's import of corn and flour exceeded 250 million kilogrammes; of raw cotton sixteen million kilogrammes; of rice 32,246,201 kilogrammes; of salt, unrefined, 50,523,656 kilogrammes; of coffee, 23,627,808 kilogrammes; of tobacco, unmanufactured, 7,532,624 kilogrammes; of petroleum, 38,199,468 kilogrammes refined, and 4,680,509 kilogrammes raw. The import of woollen manufactures of all kinds was of the value of 17,306,810 francs, and the export of woollen cloths amounted to 1,845,457 kilogrammes.

**The New Building Act.**—It is probable that no attempt will be made at present to obtain a new Metropolitan Building Act.

**The Ingham Testimonial Infirmary.**—Dean Waddington has given 300*l.* towards the erection of this infirmary in South Shields.

**Discovery of Old Scottish Coins.**—An important discovery of old Scottish coins was recently made in a field near Prestonpans. There were in all 114 coins, chiefly silver, dating from the reign of James III. to that of Mary. The coins were lying in a heap, as if they had been originally in a bag. Among them was a gold noble of the time of Mary. One of the silver pieces had been struck in commemoration of Mary's marriage with the Dauphin of France. It is dated 1558; and in addition to the monogram 'F.M.', with the heraldic emblems of France and Scotland, there is

the following Latin legend on the reverse—'Jam non sunt duo sed una caro.' One of the silver coins, bearing the date 1558, is said to be almost as perfect in its stamping as on the day when it left the Scottish mint. A number of the coins have been deposited in the Edinburgh Antiquarian Museum. Carberry Hill, the scene of Mary's surrender, is in the neighbourhood of the place where the discovery was made.

**Science and Art in Ireland.**—The Report of the Commission on the Science and Art department in Ireland has been issued. The object is to bring into harmonious action all existing institutions in Ireland receiving State grants for science and art. The commissioners do not recommend the formation of a separate department for Ireland, but they think it desirable that there should be a General Industrial and Fine Arts Museum in Dublin.

**The Danish Church, in Wellelose Square, between the Tower and Whitechapel, is levelled to the ground and carted away.** The edifice, which somewhat resembled the parish church of Kensington, was built in the reign of William III., for the use and benefit of the Danish seamen. Inside it, at the south-eastern corner, stood a Royal throne pew, intended for the use of any of the reigning house of Denmark. The reredos over the Communion table was surmounted by the Royal Crown of Denmark and the emblem of the Christian faith; and among the other contents of the church was a heavy but handsome oak pulpit, ornamented with carved wreaths of flowers and statuettes of the Apostles.

**Local Art Union of Liverpool.**—The Local Art Union of Liverpool is now established. It has been specially authorised by the Lords of the Privy Council for Trade; it is under the patronage of the three members for the borough; and it has at its back a committee composed of leading members of the Town Council and other prominent townsmen. Works of art for the first distribution, to the value of over 1,200*l.*, have been selected from the exhibition and studio collections of Mr. Norbury. The collection includes Mr. Norbury's great picture of 'Caractacus leaving Britain a Prisoner,' and 'The Return of St. John and Mary, the Mother of Christ, from the Crucifixion.'

**Sale of Property in Gloucester.**—Some house property belonging to the late Mr. R. Carter was sold by Messrs. Bruton and Knowles at the Spread Eagle Hotel a few days since. A freehold twelve-quarter malthouse and premises in St. John's Lane was bought by Mr. Long for 300*l.* The residence No. 18 Brunswick Square was sold to Mr. Wingate for 480*l.* Four residences in Hill Field Parade, held under the Charity Trustees by a lease of which seventeen years are unexpired, and subject to an annual payment of 20*l.*, were sold to Mr. C. Carter for 950*l.*

**Messrs. Christie & Manson** will sell on Tuesday, May 4, at their rooms, Mr. Barlow's very choice collection of Wedgwood ware. This collection includes many fine samples engraved in Miss Meteyard's 'Life of Wedgwood,' and the sale of it presents an opportunity not often offered to connoisseurs.

On April 16, a portion of a large hall of a warehouse, situated between King's Head Court and Bartlett's Buildings, Holborn, fell with a crash. The workmen escaped without injury.

**Indian Architecture.**—For many years past there lay unnoticed in the stables of Fife House a mass of old Indian marbles, which had been brought over from Madras, hardly any one knew either when or why. They were broken and uncared for; and if any man had the wit to push inquiries as to what they were and whence they came, he was told they were fragments of an Indian temple of which scarcely anybody in London had ever heard the name. If the inquirer went yet further, he might—or might not—have learnt that these broken stones had been found, a good many years ago, lying on the wharf at Madras, exposed to the wind and rain, and that, after much writing of letters, they had been shipped for England, where they had been tumbled out on the yard of Fife House. To ask how they came to be lying on the wharf at Madras was like going back to the Deluge; yet when curiosity pushed its way backwards, these stones were traced to Mr. Walter Elliot, who, when acting as commissioner at Guntoor, twenty-four years ago, had employed his leisure in grubbing along the green slopes and mounds on the river Kistna, after the fashion then being set by Botta and Layard on the Tigris. Elliot had met with much success in his labours, having unearthed a city and recovered an ancient temple, the details of which were of exceeding richness and importance. Nay, he had actually forwarded his wealth of examples to Madras, in the hope of their reaching London, and making his name immortal. But—alas, for human hopes!—Elliot was no writer. He could not tell his story in a way to arrest the public eye. Amravati was not a Biblical city; and, unlike the Tigris, the river Kistna had a foreign sound. The temple which he had found was called a *tope*, the name and office of which were alike unfamiliar to the English mind. The temple was Buddhistic; and, as Gotama Buddha is not mentioned in the Scriptures, the stones of which his temple had been built in Amravati could not serve to illustrate the form and site of Solomon's temple in Jerusalem. The stones were at length sent to our India Museum in this country; and when Mr. Cole was laying out plans for our share in the French Exhibition, he proposed to Mr. Fergusson, as the chief authority on Indian architecture, that some casts and models of old Indian temples should be prepared under that gentleman's eye. Mr. Fergusson, who fell in with the suggestion, set to work; meaning at first to confine the display mainly to photographic studies of Brahminical and Buddhistic works, backed by four or five casts from the curious and beautiful marbles which had long been shown in the old Indian Museum in Leadenhall Street. The pieces of stone were now picked up and set in order. The separate slabs were copied. Soon these gentlemen began to find that they had more in hand than a mass of stones. The pieces fitted to each other. It was possible to build them up; and as the pile grew higher, it took a wondrous and comely shape. In fact, the old Buddhistic *tope*, under these skilful hands, came back, as it were, to life. But this recovery of an ancient Buddhistic temple is far from being all that we have gained. The recovery is that of an original record; and we

have not only got possession of this record, but of its secret. The *tope* is a religious edifice, and the stones of which it is built are covered with figures—figures of men, animals, trees, and reptiles. They are especially covered with trees and reptiles; that is to say, with figures which appear to be symbols of trees and reptiles. When it was resolved to issue copies of the Amravati marbles, Mr. Fergusson suggested the addition of some specimens of the yet more ancient *tope* of Sanchi, of which there happened to be a capital series of drawings, made by Colonel Maisy, of the Bengal Army, in the India Museum. The *Tope* of Sanchi dates from the first century of our era; that of Amravati from the fourth. This additional proposal was accepted by Sir Stafford; and the consequence is, that we have an excellent account, with specimens, of Buddhistic architecture in India nearly coeval with the Temple of Herod and with the earliest Christian edifices in Byzantium.—Abridged from the *Journal of the Society of Arts*, April 9.

**A General Building for the Scientific Societies.**—Among the societies inadequately accommodated are the Linnæan, Geographical, Asiatic, Microscopical, Meteorological, Ethnological, Philological, Numismatic, Entomological, Chemical, Botanical, Geologists', Statistical, Syro-Egyptian, Chronological, &c., and the Medical societies. Application has been made to the Government fruitlessly from time to time by some of the societies, and help is still looked for from that quarter. If accommodation cannot be got from Government in some existing building, the favourite schemes now contemplate getting a plot of land and building a common house in some central situation. For this purpose a meeting will be shortly held.

**The Devonshire Bridges.**—At the late meeting of the County Justices the Clerk of the Peace read the following report of the Bridge Committee:—The Committee report that at Eggesford Bridge the wing wall has been washed away on the upstream side by the floods, and considerable incursions have been made in the banks of the watercourse on the same side, and at no distant period the floods will in all probability further widen this watercourse, so that the road will be endangered if precautionary measures are not adopted: a further extension of the stone pitching or pavement on the down-stream side is also necessary. The Earl of Portsmouth has offered very liberally to contribute towards the expense of the work.

**Civil and Mechanical Engineers' Society.**—On Saturday last, the members of this Society visited the St. Thomas's Hospital, and the Lambeth Section of the Thames Embankment works, by permission of Mr. Henry Curry and Mr. Bazalgette, this being the first visit of the season. Amongst the gentlemen present were Mr. B. Haughton, President; G. E. Eachus, Past President; Messrs. J. B. Walton, G. W. Usill, and R. M. Bancroft, members of council; and many other gentlemen. Amongst several things seen and worth recording, a sample of the Portland cement used on the Thames Embankment works was broken in presence of the members of the Society, showing a tensile strength of 603 lbs. per square inch of section, but most of the trials gave a still greater average. It is worthy of remark that the older the cement the greater is the strength.

**Street Dangers.**—A correspondent in the *Times* calls the attention of the City surveyors to the dangerous condition of the houses at the north-east corner of Chatham Place, just abutting on the footway and roadway of the temporary bridge at Blackfriars. He says:—'It is really impossible to exaggerate the imminence of the peril to those who pass near it. In spite of all supports, it is sinking fast, and the vibration of the traffic that passes will continue to sink it every day till the impending ruin comes crash into the road, overwhelming all beneath it.'

## QUESTIONS AND ANSWERS.

### The Tottenham High Cross.

To the Editor of THE ARCHITECT.

SIR,—Is the Tottenham High Cross one of the crosses erected in memory of Queen Eleanor, such as the Waltham and Charing crosses?

T. E. B.

### The Cost of Contract Deeds.

In reply to 'South Wales's' question—'What is the understood and acknowledged rule among architects and builders as to who pays for preparing the deed of contract?' I beg to state that the rule in my experience of about thirty years has been:—If there was no mention made of a contract in the specification, the proprietor pays the cost, as it is presumed to be entirely for his own further security. If mention has been made in the specification of a contract, without stating in what proportions the deed shall be paid by the respective parties, the expense shall be paid one-half by each. It appears to me too bad in a proprietor, first to order a deed of contract for a small job of 1,100*l.*, and then request his tradesman to be at the expense of it. The sum charged also appears excessive.

Contracts follow much the same manner as payment of schedules of measurement.

I am, &c.,

April 20, 1869.

NORTH BRITAIN.

## MEETINGS OF TECHNICAL AND LEARNED SOCIETIES.

ROYAL ARCHAEOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.—The next Monthly Meeting of this Society will be held on May 7, at 4 P.M.

THE ARCHITECTURAL ASSOCIATION.—April 30, at 7:30 P.M., G. H. Birch, Esq., on 'The Domestic Architecture of London from the Sixteenth to Eighteenth Centuries.'

ASSOCIATED ARTS INSTITUTE.—May 1, at 8:15 P.M., Montgomerie Ranking, Esq., on 'The Renaissance Influence as Traced in the Elizabethan Dramatists.'

SOCIETY FOR THE ENCOURAGEMENT OF ARTS, MANUFACTURES, AND COMMERCE.—April 28, at 8 P.M., by T. Roger Smith, 'On the Duties of the Architect with Reference to the Arrangement and Structure of a Building.' Sir Digby Wyatt will preside.

THE INSTITUTION OF SURVEYORS.—May 3, adjourned Discussion on 'The Sanitary Treatment of the Refuse of Towns, and the Utilisation of Sewage,' by William Menzies, member, at 8 P.M.; and a paper will be read by Mr. W. Hope, 'On the Distribution and Utilisation of Sewage.'

INSTITUTION OF CIVIL ENGINEERS.—Tuesday, April 27, at 8 P.M., 'On the Outfall of the River Humber.' By Mr. William Shelford, M. Inst. C.E.

# The Architect.

## THE ROYAL ACADEMY.

BY EDWARD W. GODWIN, F.S.A.



THE YEAR 1869 will be a marked one, it may be a *very* marked one, in the history of the Royal Academy. Just 100 years have passed since George Rex—more out of consideration, we should imagine, for his friend Chambers, the surveyor, than for any feeling or regard for art—approved of the plan for a Royal Academy, a sketch of which Chambers drew up in the short days of the close of the year 1768. It may perhaps be as well to remind our readers that the 'Instrument' which George R. issued from St. James's, December 10, 1768, provided amongst other things—

1. That the Society should consist of forty members only (observe the word only!). They were to be artists by profession—that is to say, painters, sculptors, or architects.

2. The object of the Society was to promote the arts of design by an annual exhibition, and by schools of design.

Since the foundation, sundry changes have taken place in the constitution of the Academy. First in importance was the institution of the class of Associates on December 11, 1769. At starting, this class was limited to twenty. It has lately been extended to an unlimited number. As every one knows, it is from this class the Royal Academicians are recruited. In 1853 engravers were admitted to all the privileges of members, but their number was limited to two. In 1862 it was provided that there should be an honorary retired class of Academicians, or Art-pensioners, and that the seat of the Academician thus retiring should be filled up in the usual way. Last of all, there are five honorary members who do nothing. Now it is clear from the foregoing that there is no mystic charm about the number forty. The 'forty only' of the original Instrument has twice received accessions—first, by the liberal extension of Academy privileges to engravers; and, second, by the creation of the class of retired Academicians. Of this number, therefore, it can be no sacrilege to speak plainly. Emphatically, then, the essential defect in the Academy is its narrow limits. For even if we include the two engravers, and allow the largest possible number for retired Academicians (say forty-two), there would not be sufficient room for those who are full worthy of the Academical recognition for which they so anxiously work. It surely needs neither argument nor statistics to show that what was worthily representative of art in 1769, must be utterly inadequate to the conditions of 1869. Break down the narrow limits, and everything else follows. Your young artists will be more likely to work honestly for Art's sake; your schools will be more hopeful; more work and less talk will be the result; good art will be found to be its own reward; discontent and disappointment will only mean bad work, and the day of narrow distinctions will be a thing of the past.

It would be Utopian to imagine that any wholesale reform can be effected all at once. One very important step has already been taken in widening the class of Associates (the A.R.A.'s) from twenty to an indefinite number, so as to identify all the good workers with the Royal Academy. To use Mr. Redgrave's words, 'it renders the Associateship a substantive honour, and not necessarily a step to the higher membership.' Or as Mr. Blaine puts it, 'according as art expanded and population increased, so it would be open to men to be elected Associates.' Which is much the same as Mr. Ruskin's panacea, viz., to give the title A.R.A. as M.A. is given in our 'universities, without any limitation of number.' The practical outcome of this liberal extension has hitherto been *nil*. We have still but twenty Associates, and it becomes a question whether the recommendation of the Royal Commissioners, that the number of the Associates 'should be increased at once to fifty,' would not have been a wiser course, considering the ultra-conservative policy of the Academy. To increase the number of Academicians to fifty, and to have not less than double that number of Associates, who should be members of the Corporate body, and who should, jointly with the Academicians, constitute the General Assembly, would be a noble and enduring monument in commemoration of the centenary of the Royal Academy. The next

reform presents itself so clearly that it is a question whether it should not have taken precedence. 'Honorary members' should cease to be. There can be no such thing as 'honorary' in the empire of Art. The whole thing is a frivolous and vexatious intrusion upon the original intention of the founders. It finds no place in the Instrument of December 10, 1768, for it was not until 1784 that the list of the five Do-nothings\* was complete; nor is the admission of lay or non-professional members into the Academy—no matter how active they might be—desirable. The lay element, as it is called, whether composed of Do-nothings or Busybodies, is equally out of place within the walls of a real working Academy of Arts. The negation of Do-nothing is perhaps on the whole to be preferred to the unwholesome excitement which would be inevitable on the introduction of the amateur element and the troublesome talkativeness of Dilettantism. But although it may be bad policy to fuse the amateur with the professional, or combine the Dilettante with the Bread-winner, it by no means follows that there is no alteration required. The Instrument to which reference has more than once been made states that the Academicians 'shall all of them be artists by profession at the time of their admission, that is to say, painters, sculptors, or architects.' At first the full number of the Academy was not filled up. The original number of R.A.'s was only thirty-six: of these there were five architects and four sculptors. The painters at starting were thus numerically three times as strong as the two other sister arts put together. But architects were in the proportion of about one-seventh the whole number. When the forty was made up, we find it composed of 29 painters, 6 sculptors, and 5 architects, architecture being thus reduced to one-eighth of the whole number. During the 90 years following the first election, there were admitted into the Academy 194 Associates, of which 16, or less than a twelfth, were architects. From the 194 Associates, 120 have been raised to the full rank of R.A.; of these 12, or one-tenth, were architects. Again, between 1841 and 1861 inclusive, 44 artists were elected Associates, 3 only were architects. During the same period there were 31 elections to full membership, and 4 of these were architects. Now it is confessed that the principle which has guided the relative numbers in the Academy is the very narrow one of the income which the Academy has derived from its exhibitions. The painters tell us that it is their *pictures*, and these alone, which draw the visitors—the architectural drawings and the sculpture are as nothing; that as the shillings are drawn by the moveable art (easel pictures), so the honours must go to the men who provide these easel works. This is in effect to say that the Royal Academy is nothing more than an exhibition. Architecture never did and never can be represented upon the walls of an exhibition. It can be symbolically set forth by means of certain drawings. But these drawings have no more right to be considered architecture than have those bits of pasteboard called 'keys' (which painters sometimes use to explain their works) to be considered paintings. The country's annual progress in easel painting may be seen in the summer months on the walls of the Academy, and similar exhibitions. But to see the progress of English architecture we must look on rather wider walls than those at Burlington Gardens. If the value of art to a nation depend upon the number of shilling sightseers it can attract, architecture is valueless. Few architects could be found to raise their voices against the narrow limits of the wall space hitherto allotted them at Academy exhibitions. Indeed, if they were turned out of the Exhibition altogether, there would be little or no injustice. The injustice consists in this—that whilst the works of the painter and sculptor are seen and examined, the *works*, not the drawings, of the architect are, comparatively speaking, ignored, because, unfortunately, they cannot be put in gilt frames nor placed on pedestals. An architect's drawings are to the public little more than cabalistic signs. What non-professional man ever yet understood a 'section,' or that mysterious compound 'half plan looking up, half plan looking down?' It is no doubt possible to produce a *picture* of an architectural work by giving a commission to some young painter; but, after all, it is the young painter, not the architect, whose work we see upon the Exhibition wall. What we all want is a real practical union and sympathy between the sister arts. Every one is in agreement thus far. The question is, can this be done by the present machinery, or must some new plan be adopted? If it were true, as some affect to believe, that one man has been, and could be, at once architect, painter, sculptor, there would be no difficulty about the matter. An architect would then depict his works with the pencil of a Roberts or a Turner, and get praised for his painting, even if his building were

\* The Bishop of Oxford is an honorary member. He says grace at the annual dinners, and may, therefore, be excepted.



never seen, or not worth seeing. Life is much too short for this sort of thing. Architects, too, have a fancy for believing in such men as Ictinus and Callicrates, even though Lord Elgin did not happen to import their columns and mouldings with the sculpture which was so gloriously subordinated to, and decorative of them; whilst the Mediæval exception of Giotto's one tower and the Renaissance exception of Michael Angelo are after all *exceptions*, and such as in my mind could not have discouraged contemporary architects. But, though the union in one man of the practice of the three arts may be regarded as generally impracticable, it is much to be desired that there should be more sympathy between the several practitioners—less marked division and more dovetailing. Painters are unquestionably woefully ignorant of architecture. Sculptors know nothing about it, and very few architects can draw their own perspectives, fewer still their own decoration even in little. These shortcomings ought not to be. We must all be set to work if the Academy would be a living working institution in our midst; the question how? is not for THE ARCHITECT to decide. That is essentially an Academy's business. This much, however, may be said: no advance will be made by glorifying exhibitions at the expense of schools, nor will the brotherhood or sisterhood of art be strengthened by electing only three architects in forty-four elections. It is, indeed, worthy of consideration whether it would not be better to establish two Academies. Drop the cognate term 'Arts' altogether, leave the present body to further the arts of painting and engraving, and found a new Academy for Architecture and Sculpture: the same titles and privileges which the present Academy enjoys to be extended to the new body. Waiving, however, for the present, this possible semi-disestablishment, another reform, that of the schools, is one which demands notice, and cannot long be evaded. It was generally admitted that one of the greatest evils connected with the old lodgings in Trafalgar Square was the want of space, which obliged the Academy to close the schools during a great portion of the year. Another evil, not so generally admitted, was the appearance of these school-rooms, and in this last respect the Academy has gained little or no advantage in the new building. This is much to be deplored, although no doubt capable of remedy. The question of the *general* teaching of the schools is scarcely within the province of this Journal. As far as architecture is concerned, there is no school. It is true we have a professor, who is required to deliver six lectures per annum at the rate of 10*l.* per lecture, and that is really the beginning and the end of all the Academy does 'to promote the honour and interest' of architecture. 'The reason we have never had a school of architecture' (to use Mr. P. Hardwick's words) 'has been the want of accommodation in the building.' It is devoutly to be wished that that has been the only reason. If it has been, of course we shall find three separate schools in the new building; that for architecture provided with a few trifles, in addition to the lecturer at 60*l.* per annum.

#### THE NEW SITE OF THE LAW COURTS.

THOUGH we all knew that Mr. Lowe is a dexterous and able man, possessing above all other qualities an antipathy to everything like compromise, yet few could have been prepared for that new phase of the Law Courts site question which his speech on Mr. Gregory's motion contrived to bring about. It came entirely in the nature of a surprise, and to Mr. Lowe himself it must have been a matter of the greatest amusement to listen to the speeches of those who preceded him in the debate, when he knew how completely he was about to put them to rout. A powerful member of a powerful ministry, commanding an unprecedented majority for all Government purposes, he could safely afford to pour contempt on all that had gone before, and proceed to sketch a project for a new treatment of the Law Courts which had an audacity about it that can only be accounted for by Mr. Lowe's own temperament in the first place, and the strength of his position in the next.

It should be some comfort to Sir Roundell Palmer that the 'demon of good taste' which he set himself to exorcise during the debate, has evidently had little to do with the decision of the Government as to site and building. If it were otherwise, Mr. Lowe would hardly have been selected as the spokesman on the occasion. The Chancellor of the Exchequer's having assumed for the nonce the office of the First Commissioner, points to the conclusion that economical rather than æsthetic considerations have mainly influenced the Government in their decision on this question. No one can blame them for trying to realise the project as cheaply, so long as there is any apparent effort to carry out the work as worthily, as possible. There can be no dispute as to Mr. Lowe's position when he states that he will give us a more economical building between Howard Street and the Embankment than we could have

had on Carey Street, or on the full site of Sir Charles Trevelyan's plan. But the public must bear in mind that the economy in this case is of that sort which means making a cheaper bargain by purchasing a smaller article. For it is quite obvious that the full programme of requirements laid down in the green-book of the Commissioners is much beyond the capacity of the site which the Government have determined on. It is probable that the Probate and Registration departments will find habitation on other ground, some portion of Carey Street site probably, and that the actual building will be confined to the Law Courts proper, with their accessory offices. We have Mr. Layard's authority for believing that Mr. Street, who is engaged on the revised plan, is able to provide all these within the new boundaries.

So far the new project goes forward auspiciously enough, and we can only trust now that no effort will be spared on all hands to bring it to a speedy maturity. The advocates of the Embankment site have conclusively proved that not only popular but legislative opinion is on their side, as against that class arrogance which could take no higher point of view for a work of this magnitude than mere professional convenience.

If we congratulate Sir Charles Trevelyan on the complete success of what is practically his own conception, it will be admitted that in these pages we have a consistent right to proffer such acknowledgment. THE ARCHITECT, from the first inception of the Embankment site, has steadily kept to it in perfect good faith, and endeavoured—as we have reason to believe with effect—to impress on popular opinion the substantial advantages which that site would secure, both in respect of public taste and public convenience.

We infer, with no little satisfaction, from Mr. Layard's short statement on Tuesday evening, that the only feature of Mr. Lowe's scheme, as sketched in his speech of April 20, which excited discontent, we might even say derision, out of doors, is now practically abandoned. For if Mr. Street is engaged, as the First Commissioner informs us, in remodelling his plans to fit the new ground, it is of course out of the question that the Inigo Jones treatment of the building can be any longer entertained. Indeed, we should doubt very much if the Government ever *did* entertain it, and rather incline to a belief that the notion of 'using up' the old design for Whitehall Palace never occurred to Mr. Lowe himself till he was far on in his speech, and was then only produced as another shaft out of his economical quiver. To borrow a *piece* from a design of a palace for the building of our New Law Courts would have been as poor a compliment to Inigo Jones as the proposal was insulting to modern architects, who have not fallen so low in the practice of their art in these days that they cannot produce a contemporary building for us, perfectly suited to all our requirements, and expressive of our time as a historical monument. Much as we need contemporary style in our architecture, to have revived a seventeenth century design, conceived for the uses of Charles I., would have been at once the greatest of all our anachronisms. That the words could be the words of Inigo Jones and the voice the voice of Street, is a suggestion which can only be regarded as ludicrous, either within or without the profession. On the other hand, to have made this change of site from one side of the Strand to the other an occasion for changing the architect, who had already matured his plans, would have been a piece of *mala fides* which would hardly add to the reputation of any Government. We feel sure that it will give satisfaction to the public as well as to the profession to know, that there is no intention to interfere with Mr. Street in the prosecution of his great work.

For the sake of much needed improvements we should be glad to see the Law Courts' building taken up to the Strand. Its position, however, as proposed, will secure counterbalancing advantages in the matters of quietness and purer air. At all events, those who so obstinately held out for Carey Street have put it out of their power to complain that there is to be no Strand frontage, for in their scheme, though the building was necessarily brought down to the Strand line, yet the floors were placed so high that access from that thoroughfare would have been a continual tax on physical exertion. It is no secret, however, that these difficulties in the Carey Street plan were regarded by its leading supporters with great complacency, inasmuch as they had been specially devised 'to keep the public as much as possible out of the building.'

#### MASONS AND FREEMASONS.

SIDE by side in those columns of our Journal which chronicled the general news of last week, our readers found two announcements, the juxtaposition of which startles the eye and provokes a moment's inquiry. The Free and Accepted Masons of Great Britain have just reopened Freemasons' Hall. The working stone-masons in several important towns of the north of England have just struck for wages. In old times there would have been the closest relationship between the two events; in modern days it appears as if this relationship had entirely ceased; and we are roused to inquiry whether the masons who meet to enjoy each other's society in Great Queen Street cannot do something to serve their brother masons who are meeting in Lancashire to try conclusions with their employers.

Modern mind seems bent on running in a direction that is each year eading its tone and temper, its habits of thought and its modes of

action further and further away from their ancient channels. Our manners, our thoughts, our words, and our ways, exhibit the greatest possible diversity, so much so that they might at first sight seem to be too varied and contradictory for the possession of one single bond of union or feature of kinship to be possible. And yet there does exist at least one feature common to the whole. All our doings and sayings and writings are alike essentially *Modern*.

We believe indeed, not without reason, that between the ancient and the modern mind, between England of the present century and any civilised community of any past time, there exists a far wider chasm than separates the ancients of different ages from each other; and yet amid this sea of change, this ebb and flow of restless activity, some institutions stand out like beacons which suggest a time when there was far more calm and quiet than now, and a period when work could be done of a sort not now possible, although perhaps not yet quite needless.

The proudest, most ancient, and most venerable of these institutions of a past age are to be found lingering in this Conservative country, and here show a vitality hardly visible elsewhere. The basis of our administration of justice—trial by jury—dates from the time of Alfred; our ancient families came in with the Conquest; our rights are secured by Magna Charta; and our lands stand surveyed in Domesday Book.

Remarkable among all institutions, and with claims to a far earlier origin than any we have named, stands the craft of the Freemason; and if antiquity goes for anything in the esteem of the present day, the ancient origin and the uninterrupted maintenance of freemasonry ought to give it a title to respect. Could not a society at once so ancient, so widespread, and so legitimate, resume with great advantage its ancient function of protecting and fostering those who build? At such a juncture as this, when a calm, dispassionate investigation of matters in dispute requires to be undertaken by some one, it would appear singularly fitting for Masonry and Freemasonry to coalesce once more.

Influential and noble names, large funds, vast numbers of members, and a loyal observance of the obligations under which the members place themselves, distinguish the Freemasons of the present day to a degree probably seldom surpassed; but the name no longer implies that connection with the craft of the builder which once lay at the root of the whole. There was a time when every man who wrought in stone, be he master builder or ordinary stone dresser, was a free and accepted mason, and his conduct as a mason lay under the control of the body to which he belonged; but the modern temper has long since subverted all this, and the modern Freemason is no more obliged to be familiar with stone, or carving, or building, than a citizen of London, if he be a member of the Ancient and Worshipful Company of Skinners, is obliged to handle stinking hides, or if he be of the Grocers' or the Fishmongers' Companies is required to post himself up in the price of sugar and the taste of treacle, or to be an authority as to *uncooked* turbot and salmon.

Any organisation which brings men together and makes their friends and fellow-helpers is of the greatest possible good, and long may freemasonry continue to render men brothers, who, without it, would have remained strangers, perhaps enemies; but nothing more requires the aid of such brotherly forbearance and mutual help than a handicraft like that of the builder, and we cannot but deplore at such a juncture as this, that the connection between this guild and the trade is quite lost, and inquire with some anxiety whether no possibility exists of so reviving it that the interests of both workmen and masters may be served, and the country be spared a renewal of a serious trade dispute.

None will be more pleased than ourselves to find that these questions can be in any sense answered in the affirmative. We fear, however, that there can be no ground to hope for any influence from Freemasonry as at present existing, unless a great effort is put forth. The craft, as far as its power over the artisans who work in stone or the builders who employ them, has been popularly held to be practically dead. Freemasons may or may not be stone-masons; most of them are not; and it is clear that the modern ways which have changed so much have effected a complete divorce between this most ancient and venerable guild and the regulations of what is perhaps the noblest, as it is the earliest, of all the handicrafts practised on the face of the earth.

Whither then has the stone-mason betaken himself for solace, protection, organisation, instruction? do he and his employers and directors all pull together as of yore? or has any modern influence been set to work to produce fresh results? We need not pause long for a reply. The mason is no longer bound to the master mason by any tie like the ancient brotherhood; he has fled to his trades'-union, and looks for no higher association there than with other craftsmen of his own order, and no more intimate fellowship with them than combination to keep up the rate of wages. The master mason has grown into a professional man—an architect—and congregates with his professional brethren at his institute or his local society, and between them has arisen a middle man—the builder. He makes common cause, against what he is induced to consider as the common enemy, with his brother builders, and he discusses and talks over some matters with his friends from his point of view, which the operatives look at no less exclusively from theirs, and the architects care little to look at at all.

Class interests and feelings have always been strong since this world

was a world, but they seem never before to have had the minute subdivisions or the force which modern society has imparted. Formerly all in the same conveyance were fellow-travellers; now we go railroad fashion—first-class, second-class, third-class. Once all in the same venture were partners; now—still railroad fashion—there are directors, and shareholders, and debenture-holders. Formerly progress was tolerably equable, but it was slow, for the roads were rough; now—railroad fashion once more—the road is smooth and slippery, the pace is express, and from time to time we have a cruelly desperate collision.

And is it really true that the trades union is the only living representative of the masonic lodge of the past, so far as connection with the well-being of stone-masons is concerned? Is George Potter—we beg his pardon, Mr. Marshall Potter—virtually the Grand Master of England? We long to hear not merely the indignant repudiation of so odious a comparison which will rise to the lips of many a Mason, but proof of some step being taken to restore to this venerable and dignified fraternity some of its ancient functions.

We cannot sufficiently urge the expediency of some interference in order to avoid the waste and misery of a great strike, and we regret to learn that attempts to remit the matter in dispute to arbitration are likely to prove a failure. Such interference, indeed, can only successfully come from a body capable, either by ancient prescription or by more recently acquired authority, of speaking with something like weight. The body of Freemasons certainly have the first-named title to respect; they may easily, if they please, regain the second. The laws of supply and demand are probably all that their most ardent supporters claim for them; they are no doubt universal, and perhaps irresistible; but all human laws require administering; and it can hardly be contended that these principles of political economy, that system of 'elaborately organised selfishness,' as a clever writer has termed it, are so perfect and self-acting as to be entirely independent of the agency which sets them in motion. Certain it is that ruined manufacturers on the one hand, and starving families on the other; trade driven away, and foreign competition successful at our own doors, speak of some little hitch in the application to practice (in the iron trade, for example) of the law of supply and demand, as recently worked out or rather fought out between employers and their societies on the one hand, and operatives and their unions on the other.

What is wanted is, no doubt, some disinterested and impartial interference on the part of some person or body of persons capable of making the men see their masters' side of trade questions as well as their own; and of making the masters, on the other hand, look at the same things in the light in which the men see them.

No worse method could in fact be thought of than that the operatives should all assemble themselves together and talk over their trade, and their desires and notions respecting it, without a single person among them able to indicate, or willing to check, such misapprehensions as always rise from the very essence of a one-sided view of anything; while their employers are engaged at the same time, either in their own individual minds, or associated together as societies, in turning the same matter over in an equally one-sided manner. Neither of them can thus succeed in grasping the *whole* question, and they find themselves obliged to fight it out, trusting very much to chance or endurance for a settlement of a disagreement which might easily and certainly have been otherwise decided had reason and patience and something of forbearance come into play.

Nothing can be more certain than that in every question of right and wrong, and in every question of value, there exists an absolute truth, and one only; and that in any question of expediency there exists a course which has a greater number of advantages, and a smaller number of disadvantages, than any other possible course. Now, all trade disputes are questions either as to what is right and wrong; what is the true value of something; or what is the best course to take out of two or more; and the grounds of such disputes, while they could not always be made clear to any outsider, would, generally speaking, be so thoroughly grasped by any person or body of men belonging to the trade, and to both sides of it, that what was really right and proper could in each case be found out and indicated with great certainty.

This is the basis upon which councils of arbitration or conciliation are being organised in many of our manufacturing towns, and nothing can be sounder in principle; and what we advocate is that such measures should be taken as would bring to bear on the settlement of the internal differences of the building trade, the great influence and high character still enjoyed by those who have the ancient right to perform this function—the Freemasons. We cannot but think that if they spoke, they would be listened to with respect on both sides. We know that their ranks embrace many operative masons, many contractors, and not a few architects; and we respectfully but decidedly urge upon those who direct the action of the Masonic body, that no greater service could be rendered to the community at large than such a wise, liberal, and effectual interference as should both settle the present disagreement, and for the future render strikes and lock-outs unnecessary in the building trade.

What we advocate, in fact, is such a measure as might cause these weapons of offence to be abandoned entirely, as altogether too clumsy, too cruel, and too costly in their operation for the enlightened and modern civilisation of the nineteenth century.

## THE PRIVATE VIEW OF THE ROYAL ACADEMY EXHIBITION.

**T**O-DAY (Saturday) the rooms of the Royal Academy are to be opened for the private view of the present Exhibition, and we propose briefly to summarise their contents, deferring for the present all criticism on them, or on the general arrangements of the Academy. And, first, whatever disappointments there may be in connection with the present Exhibition, none is likely to arise from its general character. We ventured to surmise that it would be equal to the usual average; but we have now no hesitation in affirming it to be beyond that average. And this we attribute mainly to the fact that our artists generally, and more especially our younger painters, have improved in their work. Something also is due to the presence of several excellent examples of foreign artists, and the whole effect is heightened by the improved appearance of the new rooms, with their marble doorways, lofty walls, and parquet floors. We wish that the original proposition to hang all the pictures separately could have been carried into effect: but it was found that in spite of the increased space which the new galleries afford, the demand had also increased, some thousand pictures more than usual having been submitted to the Council. One thing will give great satisfaction—all the accepted pictures have this year been hung, and so we have not the pain of hearing that perhaps a couple of hundred works deemed worthy of being placed have been left out from want of room.

Leaving the vestibule, and entering the first room according to the catalogue, the pictures which principally catch the eye are Mr. Hodgson's clever picture of an 'Arab Storyteller and his Audience,'—a careful expression of Eastern, or rather Southern life; Mr. Watts's 'Deluge,' with its long rolls of yellowish-grey sea, and the two pictures which flank it; Mr. Stowe's well-arranged picture of the 'Princess Elizabeth compelled to attend the Mass by her Sister Mary;' and several first-rate landscapes, among which we would especially enumerate the works of Messrs. Vicat Cole, Oakes, Graham, and Henry Moore. Passing to the second room, we find Mr. Calderon's impressive picture of the 'Duchess of Montpensier and Jacques Clement,' Mr. Millais' lovely little picture of the 'Gambler's Wife,' Mr. Faed's 'Street Arab,' Mr. Frith's delineation of the way in which young people manage one of the most important questions of their lives, Mr. Wynfield's 'Rich Widow,' Mr. Orchardson's 'Antechamber,' Mr. Storey's 'Old Soldier,' and several other works bearing the honoured names of Messrs. Archer, Crowe, Sandys, &c.; and notably a very fine landscape by Peter Graham, and the charming portrait picture of his three children by Mr. H. T. Wells. And this brings us to the third room, the big room, where the plan has been followed of hanging the most important pictures of the members. And what a collection it is! Sir Edwin's large picture of the 'Eagles and Swans,' one of the pictures of the year; the President's charming little portrait picture; Mr. Millais' portrait of Miss Lehmann, one of the pictures for all time; Mr. Calderon's 'Lovers'; Mr. Elmore's beautifully coloured scene from 'Katherine and Petruchio'; and a host of others, of which, some painted by Messrs. Leighton, Yeamas, Armitage, Leslie, &c., we have already given our readers some little description. Here also are to be found several of the foreign works, Mdlle. Rosa Bonheur's clever picture, the landscapes of Messrs. Daubigny, Corot, &c., and one of M. Alma Tadema's very characteristic works.

As it is not the object of the writer of these notes to criticise, it would be simply tedious to give a mere categorical description of all the good things here; suffice it to say that, in addition to those works which we have described in previous numbers, there are several other very interesting contributions, such, for instance, as Mr. Walker's picture, which we are very happy to see, though it gives evidence of that want of time which very nearly prevented its appearance; two pictures by Mr. Albert Moore, in his clever but somewhat archaic style, and a large pretentious picture by the younger Richmond. Throughout the rooms are to be found several first-rate landscapes; indeed the landscape element is very strong this year, so much so, that were it not for the equality in most of the works in this class, we might have found at last the new man to represent this specialty in the ranks of the Academy. One of the most interesting features in the Exhibition is the series of sketches made in the East by Mr. Goodall, and which are to be found in the lecture-room, where also the engravings are hung. To those who have not already seen Mr. Goodall's studies, they will be a treat in themselves. There is a small room devoted to water-colours, where, among other fine drawings, is a large figure by Mr. Calderon of an Eastern Fruit-seller, two little gems by Millais, some clever landscapes by Henry Duncan, &c., and a surprising sketch by M. Fortuni, that rising young Spaniard from whom, if all that is told be true, we are to expect so much. Of the architectural drawings we shall not at present speak. In addition to the room specially devoted to Sculpture, the Rotunda and Vestibule are also filled with works of that class, the most noticeable amongst which are the colossal statue of Her Majesty, by Mr. Weekes (who, by the way, as a really fine figure of Charles II.), and a notable piece of French sculpture, 'The Young Hannibal contending with an Eagle.'

The course which has been pursued in the hanging this year is one on which we must say a few words: it is that of hanging together the works of titled and untitled. With the exception, perhaps, of the large room, there are no demarcations—all are hung equally, and Academicians and outsiders are in loving proximity. Such a course,

we need not add, is much more likely to tend to the improvement of the artist and the edification of the public than the old system of separation; and as this is one of the advantages which the increased space affords, we trust it will never in future be neglected. On the whole we may pronounce the Exhibition a great success, and such cannot fail to be the impression of the Royal and distinguished visitors who will throng the rooms to-day. One could have wished that the opening could have been made under the most august auspices, and that the interesting ceremonial originally projected had been carried into effect, so as to have given a more national character to this, the opening of the hundred and first exhibition of the Royal Academy in its new home.

## EXHIBITION OF FRENCH AND FLEMISH PICTURES.

[SECOND NOTICE.]

**W**E have in a previous number given a sketch of the general contents of this gallery, and now propose to dwell with greater detail on a few works which, out of the two hundred and ten exhibited, stand distinct through superior merit. Immediately upon entering the room the eye is caught by a couple of pictures, pendant in subject and position; namely, two piquant scenes from Beaumarchais' *Figaro*, by J. Caraud. The incidents are well chosen: Cherubino, the pretty page, on his knees before the languid Countess, is attired in a woman's cap by Suzanne, on one side; on the other, Count Almaviva, disturbed in an interview, opens the door amid the dismay of the Countess, only to discover Suzanne in attitude of comic deprecation. Author and illustrator are well matched; the pictures are cleverly composed after the type of stage situations; the action is pointed, and tells the story neatly; the colour is gay as a French damask; the execution smooth, but not feeble. Altogether, the wit of the dramatist and art of the painter merit equal rank in their respective departments.

No stronger contrast to these brilliant tableaux could be found than the sober scene of 'Family Worship, Alsace,' by G. Brion, which hangs between them. Both subject and treatment are sombre; a family of earnest, hard-featured Alsatians are grouped before the old grandfather, who reads aloud the morning lecture, the expression of his weather-beaten face and upraised hand emphasising the solemn lesson. Here is no attraction of bright colour or winning form; the profile of the woman, who leans gracefully over the child at her knee to listen more intently, is the nearest approach to beauty in the picture. The draperies are mostly black, and cumbrously swathed about the figure after local fashion, and the group is relieved against a background of grey wall skirted with green wood. The execution is in parts somewhat scratchy, and the composition rather lacks focus; but for right intention, conscientious study of character, and thoughtful purpose, this is a picture of high order, and is the best work by Brion that we have yet seen. Another picture, which gains interest from national character and costume, is a 'Lovers' Quarrel,' by Bisschop of the Hague. To our mind, this little work possesses greater artistic quality than more ambitious productions from the same hand. Bisschop has certain technical methods for obtaining brilliancy, such as floating colour within an interval of a hard outline to produce the effect of reflected light, opposing strong darks against cool backgrounds, loading on bright colours at points of focus, and so on. These technicalities are merely means to an end, interesting as peculiarities of language which mark a writer's style. The motive of this 'Lovers' Quarrel' is prettily conceived; the youth sinks dejectedly back in his chair in the shadowed part of the room, while round the sharp angle of the wall, facing us in profile, stands beneath full light at her prayer-desk the maiden, sorrowful but unyielding. Her face is reflected in a mirror behind her, and the sweet expression of the face and pensive droop of the head are given with exquisite tenderness. We cannot help surmising that the cause of quarrel is some point of conscience, in which this clear-browed maiden follows her scruples at the expense of her heart and her lover. Solidity has been somewhat sacrificed to keep the picture brilliant in harmony; yet the contrast of the grey walls, lined half way up by cool blueish tiles, with the rich browns, blacks, and crimson of the figures, was worth gaining at the cost of surface texture. A work by the Dutch artist, Israëls, occupies the post of honour at the head of the room. The canvas strikes us as too large for the subject, or else a certain baldness is produced by the uninteresting monotony of the background. The title, 'Les premiers pas qui cotitent,' is à propos of the efforts of a tiny child to toddle from the side of its mother into the outstretched arms of the father, who crouches to receive it, while a wise magpie, evidently a friend of the family, looks on approvingly from the wall. The picture is full of sunshine, which blazes on the face of the comely young mother, and lights up the enclosure of poor-looking dwellings; yet, in spite of harmonious colour, of vigorous reality, and of tenderness in rendering the incident, there is a disagreeably sordid look about the picture, a suggestion of unkempt, unwashed poverty, that clogs both the act and the sentiment. The small interior, called 'Waiting,' has greater charm of traditional quietude and mellow chiaroscuro, and is more carefully painted. A single figure of a peasant girl with solemn eyes, pausing at her labour in the hay-field amid hazy glow of light, by Jules Breton,



completes the group of high-class rustic subjects. Notable in each and all is the absence of that sentimental poverty and simpering humility which have long been held indispensable to refined treatment of such topics in English art. The earnest pathos of Mr. Faed's best works, the poetic truth of Mr. Mason's 'Evening Hymn,' are as yet exceptions to the accepted standard of English rustic genre.

Madame Browne has met with a good subject in the 'Seminarist,' and handled it with a master hand. The modelling of the face, the subtle play about the sensitive brow, the tremulous eyebrows, curved drooping lids, and full wistful mouth, are studied with keen reading of character and a free touch responsively intelligent. F. Heilbuth, who has this year taken to portraiture, might learn from Henriette Browne to distinguish vigour from coarseness, and character from exaggeration. This artist is more at home when he paints 'Watteau' sketching from the top of a wall garlanded with brambles and flowers. This is a pretty freak of fancy, reminding one of the decorations of a French fan, slight in execution, charming in colour. A neighbouring mediæval version of 'Faust's first sight of Marguerite,' by Koller, would be more interesting did it show greater genius and less imitation of the styles of Baron Leys and W. F. Pauwels. Alma Tadema, pupil of Leys, is, on the contrary, no servile copyist of his master. 'School for Vengeance' is not a favourable example of this eccentric artist, yet as a carefully studied page of history the picture is suggestive and powerful. There is cutting satire in this contrast between the peaceful convent cloister, the simple monks, and the sacred symbols of a religion of love, with the stately French queen, nursing vindictive dreams as she watches her sturdy youngsters learn to wield the weapons with which she will one day bid them avenge a father's murder.

As to the technical merits of Cabanel's 'Venus' critics seem disagreed; as to the claims of this thoroughly French version of Aphrodite to be considered high art in any sense there is little doubt. A sensuous, soulless type of female beauty is this rosy creature born of sunlight and foam, rocking on the waves of a lustrous sea; lovely as she is, our picture galleries will not gain if such as she become the fashion.

We have not reserved adequate space for notice of the landscapes, which are, on the whole, well chosen. Lambinet has been better seen in the same rooms before; yet a bit, 'On the Seine,' is an exquisite transcript of a river nook—cool, green, and quiet. Two landscapes by Corot emphasise a recently-heard remark from one of our greatest figure painters—that landscape art is only valuable in as far as it suggests thought. The style of Corot is pre-eminently suggestive; his aim seems to be not to reproduce nature, but to create in the mind a certain mood. To this end composition, gradation of tone, and harmony of line, are minutely studied; detail is merged in suggestive haze; solids become filmy, atmosphere a dream. The result may be wide of tangible truth—it is at any rate poetic. By the side of Corot, Th. Rousseau seems additionally prosaic. We can perceive knowledge, power, conscientious study in the works of this artist of 'International' celebrity; but find them, nevertheless, entirely unpleasant. The gem of the landscapes is, to our mind, a little work by J. Maris, entitled 'Eventide,' unpretentious as the picture is, it possesses high artistic quality in management of light and shade, in composition, and in silvery tone of colour. The best marine subject is from the pencil of F. Clays, who has already won laurels in England. The 'Calm Weather' now exhibited is a first-rate example of the artist, and could not well be surpassed in the rendering of smooth, limpid water, which throws off light and yields tremulous reflections.

We have already transgressed our limits, and must now close our notice of the Gallery, though we cannot pretend to have given an exhaustive criticism of its contents. We hope that the success which appears to attend the Exhibition may encourage further and wider efforts in the same direction.

A. D. A.

## EXHIBITION OF THE SOCIETY OF PAINTERS IN WATER COLOURS.

THE Old Society's Exhibition this year is, to our thinking, not quite up to the usual average. This may be owing partly to the circumstance that some of the members have been working, we hear, for the Royal Academy, and partly to the absence of Mr. F. Walker, whose pictures were always the crowning glory of these exhibitions. Nevertheless, there are many works of more than average excellence, which we shall briefly enumerate, and if we do not mention those of all the members, it is either because they do not differ from, or surpass, their usual standard, or because they fall rather short of the mark. Following the order of the catalogue, the first picture which struck us was (No. 10), 'View from the Corsini Garden at Rome,' Arthur Glennie: very sunlit and agreeable, though somewhat conventional in the handling. For Mr. Gilbert's little picture, 'The Iris' (No. 11), we cannot say much, nor indeed do we think that Mr. Gilbert is equal to himself this year. Of course there is all the usual dexterity of composition and handling, and delicate charm of colour. But we miss any special feeling or intention in these drawings; they possess only the characteristics which we are quite prepared to expect from Mr. Gilbert's

hand. To our thinking, the best is the 'Lear and Cordelia' (121), where the colour is certainly very beautiful, particularly in the man on horseback and in the painting of the king's robes; the 'Joan of Arc contemplating the Dead Bodies of the Talbots' also contains some fine passages, though we think Mr. Gilbert is wrong in giving the female form to the armour of the heroine. Mr. F. W. Topham's 'Pastoral' (12) is his best drawing here, and is a very fine thing—the composition being especially good. It is some time since Mr. Topham exhibited anything to equal this; and we can speak favourably of two other of his works, 'The Skylark' (83), and 'The Eve of the Festa' (151).

Mr. Jackson's 'Twilight' (15) has something about it which pleases, and we may say the same of Mr. Frupp's 'Scene in the Forest of Glenorchy' (16). Mr. Burton exhibits only one drawing, 'Cassandra Fedele' (20), and that is marked 'unfinished,' under which circumstance it would be unfair to make any criticism; we will only venture to hope that when Mr. Burton comes to work upon it again, he will pay a little more attention to the drawing of the lady's throat, and carry out in the upper portion of the light drapery the same delicate colour and quality realised in the lower, and so complete successfully a very promising work. We would draw attention, in passing, to Mr. Whittaker's 'Mountain Lake, near Capel Curig' (24), and Mr. Callow's 'Dunoon on the Clyde' (25), both of which will repay investigation—the latter being especially remarkable for its faithful, simple aspect. Mr. Duncan's simple drawing (No. 26), 'St. Abb's Head,' though clever, like all this artist's work, is spoilt by a certain woolliness of texture. Mr. Burne Jones exhibits five works, which are more or less distinguished by all the beauty of colours and badness of drawing for which Mr. Jones is famous. His best work of the year—and indeed one of the best things he has ever done—is 'The Wine of Circe' (197): very weird and magical does it look, the serpent-like form of the enchantress stooping to pour some noxious draught into the wine vase; the mystic forms of the accessories, the dreamy weary sunflowers (beautifully felt and drawn), and the stealthy look of the dark panther-like animals who are watching their mistress, combine to form one of the most impressive and imaginative works we have seen. The colour, too, is exquisite, the play upon yellow and gray, from the extreme glowing amber of Circe's dress, through the flowers and golden touches, to the delicate yellow of the hangings, and back from the ineffable tint of the sky through the tones of the marble and the chair to the blue black of the animals—a perfect scale of harmony. We wish we could speak as highly of all Mr. Jones's work. 'The Autumn and Spring' (184 and 207) are charming in colour and very decorative; but surely this of 'St. George' (33), setting aside the beauty of the colour, is a poor realisation of the legend. The knight looks anything but valiant; if he has any bones in his body they must be very small and out of joint, and he looks quite incapable of sustained muscular exertion: a very sorry champion, but fortunately pitted against a still more sorry dragon—formidable, we should think, not even to a child; and so the knight seems to think, from the deliberate and elegant way he is planting his weapon into the throat which the obliging monster holds open to receive his death-stroke. Mr. Jones's remaining work, 'A Lament,' is still worse, not being even thoroughly good in colour. Mr. Dodgson's two best drawings are 'The Timber Waggon' (37), and 'Words at Evening' (48), having a real unconventional feeling for nature about them very refreshing to see; and Mr. F. Powell's 'Ben Nevis' is worthy of commendation, with its poetically-expressed gleam of sunshine on the side of the mountain, whose summit is gloomed and lost in rolling wreaths of mist. Mr. Naah's architectural drawings are falling off, and have not the merit of being faithful to the originals; in his 'Drawing-Room, Haddon Hall' (138), the beautiful proportions of the room itself are missed, and the drawing of the window and the curve of the chimney-piece are specially untrue. Mr. Birket Foster's 'The Meet' (75) is his principal work, and one of the finest and most important things he has ever exhibited. The composition is fine—the arrangement of the trees and the group of children to the left of the picture being remarkably good; so also is the treatment of the hounds, a moving mass of heads and tails, and the action of the huntsmen. If we could find a fault, it is in the colour of the clouds, which are somewhat greenish. The whole forms a very fine work—one of the best here—and justifies us in the hope that Mr. Foster will yet do things far beyond what he has hitherto attempted. Mr. Carl Haag exhibits three pictures:—(No. 78) 'My Dragoman,' very clever, but a little unnatural in effect; 'The Acropolis of Athens,' &c. (143), very good indeed; and a large drawing of the High Priest of a Samaritan community reading the Pentateuch (131), in which the figure of the man is somewhat short, but otherwise well done; the execution throughout is capital, and the painting of the copy of the Law which the priest is holding is a marvel of finish and dexterity. Mr. T. Danby exhibits one or two drawings characterised by that same soft misty sunlight effect for which he is specially distinguished. (No. 100) 'In Charterhouse, "Founder's Tomb"' is one of three studies from the same locality exhibited by Mr. F. Smallfield, all of which are remarkable for fidelity, cleverness of execution, and beauty of colour and effect—noticeably so is the 'Pensioners' Hall' (158), where the exact relation of tones, the delicate gradation of the light, and the beautiful colour of the whites and grays and browns, combine to make one of the most pleasing and fascinating studies we have ever seen. Mr. G. P. Boyce (in our opinion one of our best water-colour artists) exhi-

bits several drawings, all more or less remarkable for his intense fidelity and power of rendering the delicate evanescent colours of nature. That Mr. Boyce is deficient in composition and invention there can be no doubt, but can anything be more lovely than the floods of light and atmosphere in this drawing, 'The Skirts of Smithfield' (117), or in that (287), 'Shillingford on the Thames?' Observe also in the drawing of 'Bridewell Precincts at Nightfall' (224) how precisely correct are the different tones of brick and stone, sky and grass, and what charming colour they all possess. A little study of a head, 'Pensosa d'Altrui' (280), is not so good, and we think Mr. Boyce ought to be careful how he departs from the domain of landscape. Quite another style of work, but almost as fine, is that of Mr. A. W. Hunt's 'Loch Corniak' (155), an earnest, impressive rendering of that lone weird lake in the land of Skye. Mr. T. R. Lamont has again selected one of the ballads of his country for his subject this year, 'Glasgerion' (170)—a well-composed, well-painted picture, in which, if we have to find any fault, it is to object to a certain mildewed look about the shadows—a failing to which this artist is subject. Mr. A. P. Newton's work is all good, but his 'Shades of Evening' (189) is much more than good—a lovely thing, full of exquisite passages. Mr. J. D. Watson exhibits three drawings, one large one, 'Carrying in the Peacock' (161), a group of girls in mediæval costume carrying in the dish of the feast. Somehow we do not quite like this picture; why should the heads be all so ugly—all excepting, perhaps, the first, a young woman with a very large development of bust? The treatment is very thorough, and there is much beautiful work in the draperies and accessories, but the whole thing is more remarkable for talent than for feeling. We much prefer 'The Smithy' (27), or even the 'Family Pew' (243). Mr. Walker's absence from this year's show is a great loss; his place is occupied but not filled by Mr. G. J. Pinwell, a very rising artist, first brought into notice at the Dudley Gallery, and to whose many clever and striking works the only drawback is a certain resemblance to those of Mr. Walker. There is, however, quite enough of original stuff in Mr. Pinwell to encourage the opinion that he will become one of our most distinguished figure draughtsmen, as anyone who examines these careful little pictures may see. One is 'A Seat in St. James's Park' (297), the weakest of the three, but full of character and expression. The other two are taken from Browning's 'Pied Piper of Hamelin'—the 'Piper charming the Rats' and the 'Piper charming the Children.' In the former, the skurrying of the rats, steeple-chasing over all obstacles to follow the magic notes, is wonderfully given. Both pictures are, perhaps, slightly deficient in line and composition, but thoroughly well-drawn, and carried to a degree of finish almost unprecedented in the history of water-colour. Mr. Holman Hunt has two small works, neither very good; perhaps the best is the 'Cathedral at Salerno' (263), which is strong in colour, and in some places good in execution.

The above are the principal or more striking pictures of the Exhibition. Want of space prevents us from enumerating the works of Messrs. Brittain, Willis, Basil, Bradley, and others, all of which, however, will be found to repay inspection, and to conduce towards that pleasure which the shows of the Old Water Colour Society are always calculated to afford.

### THE NATIONAL GALLERY AND THE NEW MICHAEL ANGELO.

HOW much the value—not the commercial, but the æsthetic, value of pictures depends on the builders of picture galleries may be realised by any visitor to the unburdened National Gallery. True, it is only space which has been gained, but what a gain it has been! The familiar rooms hitherto devoted to the annual exhibitions of the Royal Academy have been now placed at the service of the national collection. The walls are no longer painfully crowded. The greatest works in the possession of the nation are no longer piled on one another, like the emanations of rival bill-stickers. The sense of relief and pleasure experienced in walking through the unbroken series of rooms, notwithstanding all their imperfections, is wonderful.

We have not space for more than a few lines, but we cannot pass in silence the appearance of that wonderful composition, the exhibition of which is the main feature of the re-opening of the National Gallery. Boldly, and without any note of interrogation, it is labelled as the work of Michael Angelo. We should like to hear what can be said as to its pedigree.

One powerful and unanswerable argument is often open to the defenders of the authenticity of some fiercely questioned work of literature or of art. It is called a forgery. It may be hard to prove its authenticity by direct evidence; but—WHO FORGOD IT? It is on the silence that responds to this question, and on the consideration that a forger must have been a more extraordinary person than the reputed author, that the estimate of some of the most venerable authorships in the world mainly rests.

Now in the group of six figures, representing the Entombment of Christ, to which we refer, while there is much that is unlike any thing with which we are familiar from the hand of Michael Angelo, there is much as to which the question, who else could have drawn it? seems to be unanswerable. Who but the great sculptor of the Medicean Chapel could have drawn the foreshortened right leg of St. John, or his wonderfully modelled neck and left shoulder? Who else would have thrown the weight of the corpse so heavily upon the two leaning supporters? Who else would have represented the wonderful rigidity and death-contortion of the nude limbs of Him who is borne to the sepulchre?

The group appears to represent the entombment by the hands of Peter and John, with the aid of the three Marys. One of the latter shares with the younger apostle the sacred burden, which they bear between them by means of a linen bandage. John is clothed in red, the full colour contrasting very forcibly with the pallor of his burden. On the crest of his long, curling, Francia-coloured hair, a small line of bright colour shows how the painter intended to light up a natural glory from the rays of the declining sun. The anxious, agonized look of the young man is no less striking than the tender, loving, almost maternal care evinced in the look and attitude of Peter, who supports the upper part of the figure of Christ. The head of this apostle presents the known conventional features, and is magnificent. Of the head of the Saviour, that subject which even Leonardo feared to draw, it can only be said that it is almost impossible to escape a sort of inexplicable fascination in regarding it.

The mouths of the females are very peculiar. In the one who bears the corpse, and leans outward to counterpoise the weight, the pinched lip combines with the attitude to express physical effort. In the seated Mary, which is the least finished, the most damaged figure of the group, the same action of the lips seems intended to denote mental suffering.

There remains the remark that the stamp of countenance can be referred to no Italian provincial physiognomy with which we are acquainted. The head of St. John is of a type not absolutely foreign to the north of Italy, but the women would almost seem to be Flemings. The profile, expression, and outlined head-dress, of the Mary who shares the burden, are all harmonious with this nationality, more closely than with any other European type that we can recall. The painting is one of the utmost value and of the highest interest. We trust that the attention now called to it will prove the means of eliciting some direct proof of its actual paternity.

### ILLUSTRATIONS.

#### M. LAMEIRE'S DECORATIONS.

WE give this week a second portion of the decorations designed by M. Lameire and exhibited at South Kensington. With a third illustration of this series, which is now in preparation, we propose to give a fuller notice of this remarkable work.

This illustration, like the one given in our number for April 10, has been lithographed by Mr. E. J. Tarver. Another name by accident appeared on the first plate, and we gladly take this opportunity of correcting the error.

#### CLOISTERS, AIX-LA-CHAPELLE.

THIS picturesque example of early architecture is lithographed from a pencil sketch made in 1864 by Mr. T. H. Watson. Some of the most curious of the details are illustrated, as well as the general effect of the mural arcade.

#### SOUTH ESK RIVER BRIDGE.

THIS work was fully described in our last number. The sheet of details given this week completes our illustrations of it.

### STREET ARCHITECTURE IN CARLISLE.

IN the *Carlisle Journal* of the 23rd ultimo 'An Architect' thus writes:—

'Lest it might be inferred by the public (from certain expressions used at the Carlisle Corporation meeting held in the previous week) that the few members of the architectural profession in Carlisle were responsible for the appearance of the whole of the buildings erected in this city, I have to state (and I believe the gentlemen on the Board of Health will bear me out in the fact), that of the many plans of proposed buildings which come before them weekly, not one in twenty is planned by an architect, and that if the building is of sufficient importance to require such professional skill, a total stranger is often consulted. It is, therefore, slightly unjust to allow a few gentlemen to be blamed for a stated general fault or defect in a matter with which they have nearly nothing whatever to do.

'If there be a defect, the blame rests with the Corporation, or other proprietors of building ground, or their agents, in not, when a piece of ground is sold, insisting upon a certain style of building being put up. The cause of this may be their taking too elevated a view of the subject, which (from the word "architecture" being applied to the buildings in Spencer Street) I am inclined to think possible. Spencer Street, Cavendish Place, and, in fact, most other streets, consist of houses in which the great features of the elevations are three or four openings, forming windows and a door, an iron spout as eave, and chimneys, none sufficiently ornamental to dignify the building with the name of architecture, except perhaps the door, which might have been copied out of some old pictorial encyclopedia, under the head "Doric Architecture," and which, for lack of further ingenuity or skill, is made to do duty on all occasions, well justifying Mr. Hardy's remarks respecting monotony.

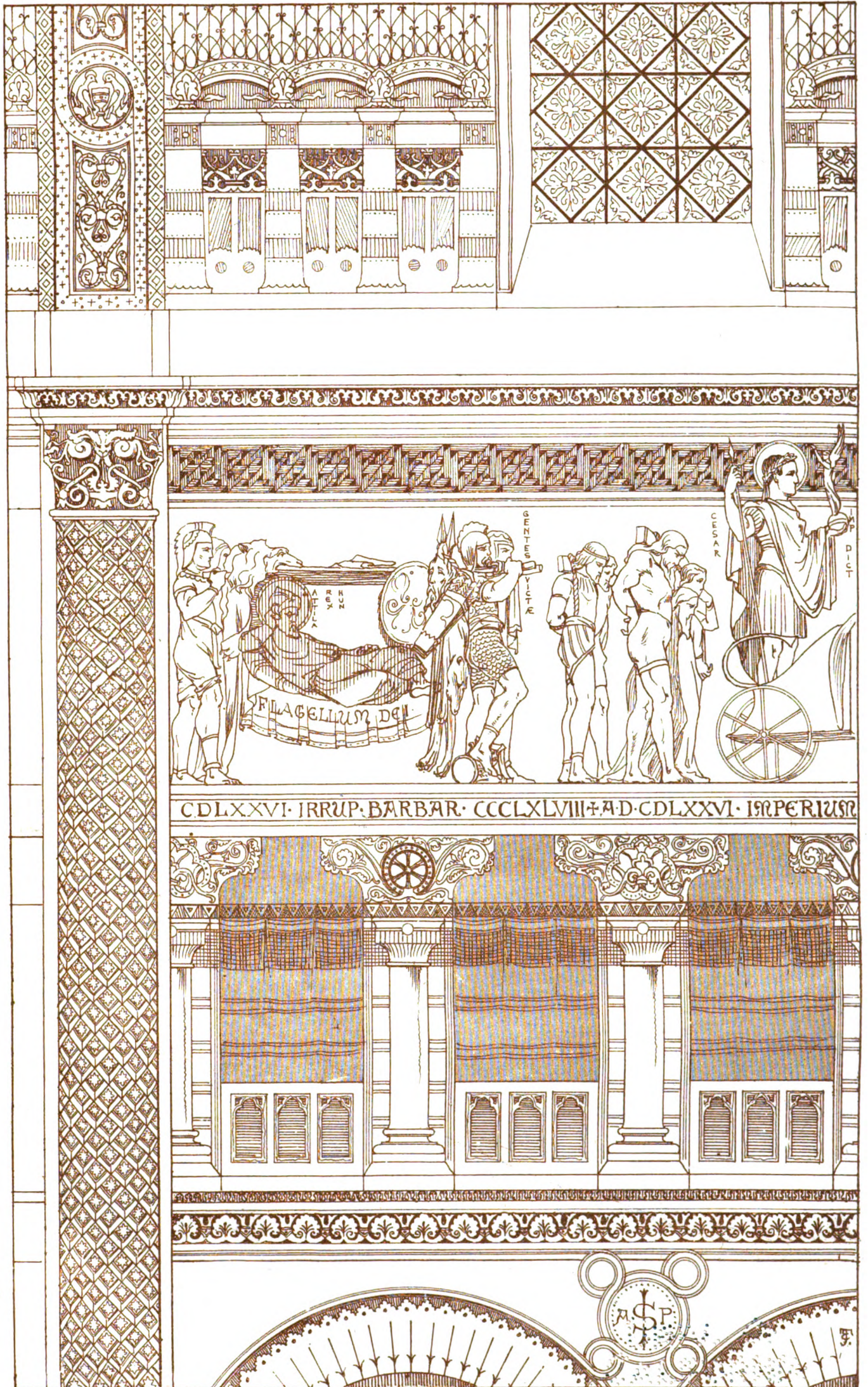
'The buildings in Chiswick Street, taken as a whole, are a mistake; there are there big windows, little windows, wide windows, narrow windows, high windows, low windows, arched windows, flat windows, red windows, white windows, in most unpardonable proximity. Taken, however, separately, I consider some of them as very superior houses for their class, and much better in appearance than those in Spencer Street. The taste and even requirements of each individual will very generally be entirely opposed, as here shown. I therefore recommend the Corporation to require their surveyor to regulate the main lines and features of such houses, seeing that a white be not built next to a black one, or that the windows of one be not

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PORTION OF LONGITUDINAL SECTION OF THE NAVE OF A CHURCH. WITH COLORED DECORATIONS.

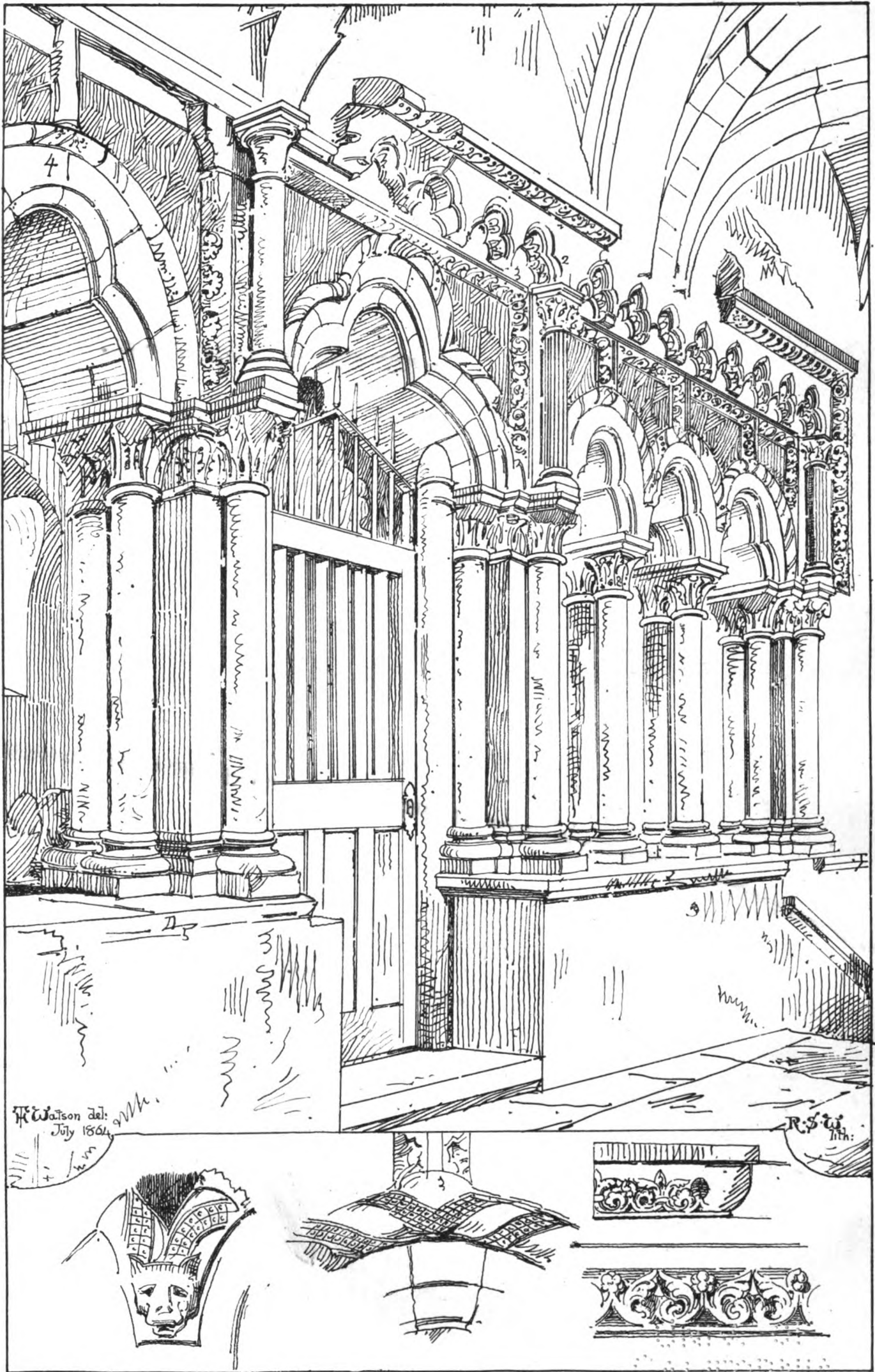
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R. S. WORMUN, LITHO.

A PORTION OF THE CLOISTERS AT AIX LA CHAPPELLE.  
FROM A SKETCH BY T. H. WATSON.

50 ANNUAL  
ADDRESS

six feet wide, the next being perhaps fifteen inches, and so on with the other parts of the elevation. And this can be done effectually without much knowledge of "architecture," to which, as I said before, such buildings hardly belong. The result would be consistent and pleasing blocks of buildings.

'If any proprietor choose to incur the expense of employing a professional man, which is seldom the case, or should he have the requisite amount of knowledge and taste himself to apply a little architecture to the construction of his house so previously fixed, he should be allowed to do so, which would save the street from the monotony of which Mr. Hardy complains, and yet retain the whole in harmony by a close adherence to the main lines of the general design. The Corporation surveyor or other agent should make an elevation of each proposed new street, showing such general lines and principal features. The conditions of sale should require each purchaser to abide by them to the satisfaction of the surveyor or other agent. Until this is done, the evil will not be remedied. The plan of offering a premium for such general designs may fulfil the requirement, yet I think in houses which will scarcely (on consideration of the expense) exceed the limits of utilitarian building, the responsibility might have rested with the Corporation surveyor.'

### UTILISATION OF INIGO JONES.

THAT portion of the public, small as it unfortunately may be, which is aware that total want of good taste indicates, if it is not synonymous with, very imperfect education, has had ample evidence of the justice of this view forced upon it during the past ten days. The accomplished advocate who held a parliamentary brief for the now disendowed and disestablished Carey Street Courts, was not ashamed to sneer at men who took thought for the architectural requisites of an edifice that Englishmen were about to build for posterity. Forgetful of the ancient adage about glass houses, Sir Roundell listened to the promptings of some invisible whisperer—it is not for us to indicate its nature more distinctly—which induced him to call its opponent 'the demon of good taste.' It was not *that* demon that was in practice at the moment. An orator who has courted the Muses, and who is supposed to be most familiar with the one which, of all the choir, should be the most delicately graceful, so that she be not a counterfeit—was it for him to sneer at *dilettanti*?

But the boldness of the onslaught of the man of figures threw this into the shade. 'I do not profess to be a man of taste,' said the Chancellor of the Exchequer, and he forthwith proceeded to prove his assertion. 'I know nothing of architecture, therefore I suggest that all architects' plans be abandoned, and that I be allowed to introduce a design of my own. I have within reach certain designs, made by one of the greatest architects known to England, for a royal palace. I propose to adapt them for the Law Courts. As to slight questions of inappropriateness, let me alone to get over them. I will cut out a wall here, and stop up a door there, and I shall save at least two and a-half per cent. to the country by adopting Inigo Jones's elevation instead of one by any architect who is unfortunately living, and therefore able to ask for his commission.'

Do our readers know that the design which it was thus intended to utilise, like old building materials, is? It is not a Government secret. The graceful symmetry and rich, elaborate ornamentation of the designs for Whitehall Palace are well known to the student of Renaissance architecture as defined by Palladio and Vignola. But one small block out of the whole noble structural composition took actual structural shape, but that single banquetting-room is one of the choice bits of the metropolis. The ceiling was divided into compartments, to be adorned by no hand less skilled than that of Rubens. A quay wall, with two broad flights of steps, was to divide the river front, 874 feet in length, from the Thames; and a vast, but harmoniously proportioned, palace, containing seven principal courts, was to extend 1,150 feet in depth from the river to the park front. The central court, which formed an unbroken space from the eastern to the western façade, was to be surrounded by a terrace of the height of the plinth of the main building, and 30 feet in width.

The building, if erected, would have been the noblest palace in the world. It would have been distinguished, above any other, for its costly sculptural ornamentation. The designs for the second and third orders, which we have in very finished detail, are rich with a wealth of sculpture and of relief—caryatides, masks, figures reclining in spandrels or lunettes, or standing out in bold outline on the sky line—such as it would task all the art of the England of to-day to produce. The interior is equally cared for and equally rich—panelled ceilings, sculptured chimney-pieces, windows and doorways of bold, harmonious, unstinted sculpture.

With all this, Whitehall would have been, what it professed to be, a Royal Palace. The entire plan was carefully adapted to the requisites of a royal abode. There is not a single room, over all that great area, that would have been suitable for such a purpose as the sitting of a legal tribunal. The King's Gallery, the largest apartment (in one sense), 130 feet in length, was only 20 feet wide. It was what the architect called it, a gallery. The Presence Chambers—for it is a remarkable peculiarity of the building that all the state apartments are in pairs, actual duplicates in plan—were noble rooms, some 95 feet by 50, but so approached by antechamber and vestibule, or by the grand circular gallery, as to be only fitted for the purpose denoted by their name. The throne rooms were smaller, and equally out of public reach. The grand feature of the part of the building containing the rooms specially devoted to the state occupation of a king and a queen (the only explanation of their arrangement), was a large circular court—a Persian court, the architect called it, probably from the fact that it was surrounded by a gigantic row of figures in place of caryatides, described as Persian captives, but more resembling the ancient Dacians. Order above order this circular court was adorned by the richest sculpture.

It is the design for a building such as this—the elaborate design for a royal abode, unstinted in rich ornamentation, and unfitted for any other occupancy—that it was proposed to utilise for a Palace of Justice! Truly it was

needless for the proposer of the substitution to disclaim the title of a man of taste.

But is it altogether a very mistaken thing to put in such a disclaimer? Would the hon. member have said with equal coolness, if it happened to be the case—I am not a man of letters? Judging from the experience of some of his colleagues, he would rather have adopted the plan of lamenting the large amount of time wasted in learning Latin and Greek. To depreciate what one has not, is an admitted license of the rhetorician; but to say coolly that one is unfit to deal with an important subject, from a neglect of the requisite education, and then to proceed to deal with it, in a manner that could only astound those who were not in equal darkness, is a piece of conduct without precedent, so far as we can collect, in a public man.

Well may we be thought the least educated country in Europe if men, who deal with aesthetic matters as questions of book-keeping, are unchecked when they glory in their shame.

### OUR WATER SUPPLY.

NANTWICH.

THE plan of allowing the water to remain on all day all over Nantwich, instead of dividing the town into three districts and giving these districts the water one after the other for an hour each in the morning and the same in the afternoon, has so far succeeded admirably. In the higher parts of the town, where, under the old plan, the water came with very little force, the stream from the taps has remarkably increased. The firemen, on applying the stand pipe and hose to the hydrants, can now throw the water over buildings of which previously they could only touch the edge of the roof. As a single instance out of many, in Thomas's Row, off Beam Street, Nantwich, where, at the top houses, they could scarcely get any water at all, it now comes on with great force. Under the old plan everybody had to draw their water within the hour. The result was that people left their taps open, with vessels under, and when these were full the water ran over and was wasted. Now people have simply to draw the water when they want it, and there is no necessity for leaving taps open and vessels under them. One great beauty of this plan (which, it is to be hoped, will be available throughout the year as it is now) is that it will not entail the laying of fresh conduits, at a cost of something like 3,000*l.*, nor even of a special engineering scheme, at the sum of 250*l.* Much, however, as this change may have been welcomed by the general public, one class of the community has rejoiced above all others—that is to say, that part of the community engaged in the plumbing business. The increased force of water has in a large number of cases found out defects in the pipes connected with the water taps and the apparatus of the cisterns in town, and the man of lead has had to be summoned.

GUILDFORD.

The better water supply of Guildford is a subject well deserving the most earnest attention of the Local Board of Health. It will also interest others beyond the town of Guildford to quote the following information which was given at the Guildford Local Board last week. In the course of the business of the meeting, the clerk said that in accordance with instructions from the last meeting he had written to the various local boards of the neighbourhood to ascertain upon what terms they charged the water to brewers and other large consumers. He had addressed letters to no less than twenty-five boards of health, and had received replies from most, the principal of which were as follows:—'At Dover the charge was 6*d.* per thousand gallons, and the supply was charged by meter. At Winchester there was a private company; large consumers were charged 9*d.* and small consumers 10*d.* per thousand gallons. At Chatham also a private company; the supply was by meter, and the minimum charge was 10*l.* per year to take up 200,000 gallons, and beyond that quantity 9*d.* per thousand. At Chelmsford the charge was 1*s.* per thousand gallons. At Reigate, which was supplied by the Caterham Spring Company, there was a minimum charge of 3*l.* 15*s.* per year for a maximum of 40,000 gallons; in excess of this the charge was 2*s.* per thousand up to 75,000 gallons, 1*s.* 9*d.* up to 100,000, and 1*s.* 6*d.* to 150,000 gallons. At Croydon the charge was also by meter; in the special district, in which the supply was compulsory in all houses, the charge was 6*d.* per thousand gallons, but out of the special district, where persons were not bound to take the water, the price was 1*s.* 6*d.* per thousand. At Worthing the supply was by meter, but it was stated that the meters were not a success.' Some discussion ensued on this information, but no immediate action was taken.

### COLUMBIA MARKET, BETHNAL GREEN.

THE scene of Miss Burdett Coutts's latest act of munificent charity is one which is associated in the public mind with poverty and squalor for the most part. Bethnal Green is not exactly the place one would select to visit in search of beauty or magnificence. And yet the new market buildings opened to the public on Wednesday hardly fall short of meriting such adjectives. They are palatial in extent, while their architectural design is in many of its parts of the most ambitious and elaborate character.

Naturally, therefore, the first thought which strikes a visitor to Miss Coutts's market buildings, is the complete antithesis they present to the whole visible surroundings. A characteristically squalid group of old and poverty-stricken streets and houses has been cleared away, and this noble-looking pile of buildings, covering two acres of ground, has been reared in their stead. Strong, we may say violent, as is the contrast between Columbia Market and the district it now centres, it is in this very fact that the institution finds its greatest significance. Nothing can be truer than the assertion that human beings inevitably become assimilated to their material surroundings. One would no more expect to 'gather grapes off thorns and figs off thistles,' than to find either refinement of mind or manner, or grace of life or person, in such a district as Bethnal Green. The work which owes



its existence to the large-hearted yet prudent charity of Miss Coutts is exactly of that kind to afford real pleasure from the conviction that it must raise the whole tone of life and taste in the people who surround it, and who in their daily life and avocations can no more escape from the beneficial influence which such works exert than they can avoid, in the contrary case, the degradation which is produced among large masses of population by filth and squalor and the usual accompaniments of great poverty. The kind of transformation which Miss Coutts's wealth so munificently bestowed has produced, in and about the Columbia Market, is the best as it is the first of all systems of 'primary education.'

Place objects of beauty among the people, and you create by their means, in process of time, that very taste and perception which are needed to appreciate them: when such external agencies have leavened and humanised the poorer masses, the need of the pulpit and the school is more likely to be felt as a real want.

It is a gratifying feature in Miss Coutts's building scheme that its purposes are so devised that, while every part of the work must alleviate the miseries of accumulated poverty, it has no tendency to pauperise the population. These markets are not laid down as free gifts. They are offered as comfortably arranged and well fitted shops to industrious tenants. The market has been established with the object of supplying the surrounding poor with sound and wholesome food at a fair and marketable rate; of bringing the producer and consumer into closer communication with each other, and of promoting habits of industry and thrift among the humblest class of traders, who at present earn an uncertain livelihood by hiring carts and barrows from exacting proprietors at exorbitant charges, and hawking their wares about the streets. To secure these objects it is intended that the wholesale dealers shall be selected from those who have already established a position and character for respectability in other markets; that the shops shall be occupied by farmers or their agents, who will be their own salesmen, and thus free their customers from the penalties inflicted by their dealing with the middle-man; and, lastly, that the costermongers and hawkers shall have the option either of selling in the open market, or of hiring their barrows and carts from the market stores upon such terms as will secure to them a better profit than that which they now receive on their hard day's work.

The plan consists of four blocks of buildings with arcades surrounding an open quadrangle. The north side of this space is occupied by the Market Hall. Externally this block is of great architectural pretension. It has a busy, picturesque, and what might be called a popular look about it. To our own notion it looks far too much like a German cathedral; that impression at least will give some idea of its elaborate character. Internally, the Hall is very effective in design, and the materials which compose it are admirably treated. The wooden vaulted roof, in the actual effect on the visitor, is very far superior to the impression which any drawing can give. The Hall measures 104 feet in length by 50 feet in width and 50 feet in height. Its length is divided into seven bays by clustered granite pillars, two feet in diameter and 35 feet high from the floor to the top of their capitals, which are of bronze and of varied design. From these spring the moulded ribs of the roof, which is groined throughout in pitch pine. The space in the centre of the hall, affording an area of about 2,600 superficial feet, will be unobstructed by fixtures of any kind, as it is intended for the accommodation of small dealers; but in the aisles, immediately behind the pillars, are ranged 24 small shops, 13 ft. deep, 6 ft. 9 in. wide, and 8 ft. high, supplied with office containing fire-place, desk, &c., and furnished with sink, counter, and other fittings necessary for the sale of meat, fish, poultry, &c. They are lined on all sides with polished Irish marble, very hard and close of grain. They are intended for second-class dealers. Above the shops are four galleries, each affording an area of 676 superficial feet, for the sale of flowers, roots, fruit, &c., and which are approached by staircases adjacent to the principal entrances of the hall. The hall is lighted by mullioned and traceried windows, which extend from a few feet above the galleries to the groining of the roof, with which their heads are concentric. Two compartments in each window are furnished with casements which are made to open outwards for ventilation. We wish Mr. Darbishire had seen fit to glaze these great windows with a glass which would have toned down the glare which the present white light produces. Behind the hall is the market yard, covering a space of 8,000 superficial feet, in which carts will unload, and most of the wholesale business of the market be carried on. For the purpose of giving proper access to this part of the market, Miss Coutts has constructed a new street, about 40 feet in width, leading direct from the Hackney Road. Crab-tree Row, leading to the retail market, is also being widened at Miss Coutts's expense.

At each end of the market hall is a building, forming a kind of wing, four storeys in height. The buildings constituting the east and west sides of the market square are four storeys in height, the architectural details being fully in keeping with the rest of the place. They consist of a series of shops, fronted by spacious arcades, the accommodation afforded each tenant consisting of kitchen, cellar, store, and closets in the basement; shop, parlour or office, and private entrance on the ground floor; and sitting-room and four bedrooms, with closets, &c., on the two storeys above. The central tower rising in the midst of each of these two groups of buildings contains arrangements for forcing the water supply of the market to a high level. At the back of the shops are a series of dwellings, respectively designated 'Georgina Gardens' and 'Angela Gardens.' They are intended as residences for City clerks and others of a similar class. The central quadrangle occupies an area of about 14,000 superficial feet.

From the strictly architectural point of view, the one most within our province, the whole effect of these buildings is up to the average mark. There is a certain amount of pluck in the general design, but an equal amount of timidity observable in the detail, which is so tiny and thin in most cases as to look as if the architect had been nervous about the quantities of his material. In other cases, such as angle piers and buttresses, where great breadth could have been obtained, the spaces are cut up and subdivided into an infinity of little parts. The arcades surrounding the quadrangle betray the same qualities. The soffits are thin, and the single shafts meagre for the scale of the building. One great merit in the work

is the goodness of the building, worthy of the reputation of the firm that executed it, Messrs. W. Cubitt & Co. The walls are of yellow brick, and terra cotta is largely employed for dressings, though its colour is such as to closely resemble stone. Probably this is less a fault than it would have been had the walls been built in red instead of white brick. Almost all the external woodwork is executed in teak.

The architect, as our readers are aware, is Mr. H. A. Darbishire. His clerk of works was Mr. Weller, and the contractors' representative Mr. Wheeler.

In concluding our notice of these buildings we can safely recommend our readers to pay them a visit. The effect of the design will come on the visitor in the nature of a surprise, and, if we mistake not, will be considered a treat when the appearance, the uses, and arrangements of the various parts have been inspected.

At the inauguration on Wednesday last, a highly distinguished and numerous company met Miss Coutts, whose sentiments in relation to the occasion were expressed on her behalf by His Grace the Archbishop of Canterbury.

## PARLIAMENTARY PROCEEDINGS.

### Irish Diocesan Architects.

In the Commons, April 22, Mr. BRODRICK said he had placed an amendment on the paper, that justice might be done to a small and deserving body of men, the diocesan architects, who were appointed under the 14th and 15th Victoria, known as Napier's Act. The Bishop appointed one in each diocese, and their duty was to superintend all the alterations of the glebe-houses, to make periodical inspections, to report on the repairs necessary, and to see that those repairs were properly completed. They were, indeed, such useful functionaries that he wished there were similar ones on this side of the water. There was no provision in the Bill for compensating these officers for the extinction of their employment. He had added the words 'or emoluments' after 'salaries,' because they were not paid by definite yearly salaries, but by a commission on the repairs they had superintended. No other class had so great a claim to a first charge on the funds as those who were the first to suffer from the change.

The ATTORNEY-GENERAL for Ireland said that these compensation clauses had been considered with care, and it was found impossible to extend compensation to every case and circumstance. (Hear.) In this particular case, the claims of these officials who called themselves diocesan architects would not be recognised, because there were no such officers. The diocesan architects had constituted themselves officers, but there were no such officials known to the law. He trusted that the hon. and learned gentleman would not press his amendment.

Dr. BALL concurred in the opinion that these could not be regarded as freehold offices. ('Oh!')

The amendment was negatived.

### The Caterham Asylum.

On April 23, Mr. GOSCHEN stated, in precise terms, in reply to a query, that if the expense of the banquet given on the occasion of laying the foundation-stone of the Caterham Lunatic Asylum was voted by the district board, it would not be sanctioned by the auditor, as it was the universal practice to disallow all such charges. He had heard, but unofficially, that the entertainment was given by the contractor. The observations of the hon. member for Colchester were not to the effect that Government was prepared to sanction the expenditure of 490,000*l.* on five new buildings, under the Act of 1867, but that that was the estimated cost of those buildings—namely, two lunatic asylums and three fever and small-pox hospitals. With respect to the hospitals, it was intended to proceed at present with only two, and the total cost would, in consequence, be but 430,000*l.*

### The Southern Embankment.

On April 24, Mr. TITE explained that the alterations in the Southern Embankment scheme in respect of the docks had been the result of an arrangement between the Metropolitan Board and the Lambeth Vestry; and that the two docks in construction at Lambeth are by private firms in the potters' trade, and at their own expense.

### Alterations of the House.

On the same day, Mr. LAYARD, in answer to Mr. HEADLAM, said he had given directions for printing the plans for the alteration of the Dining-rooms.

### The Temple Collection.

On April 26, Mr. W. LOWTHER asked the honourable member for the University of Cambridge why the collection of works of art, &c., in the British Museum, known as 'The Temple Collection,' no longer existed under that name, and whether some means could not be taken for keeping that collection together, or having the separate objects marked as having belonged to the late Sir Wm. Temple.

Mr. WALPOLK would explain the facts of the case with reference to the Temple Collection, and he believed the hon. gentleman would find that the trustees of the British Museum had done everything to satisfy him and the public. The Temple Collection was left to the Museum some years ago, and for some time the collection was kept together as a whole, that it might be seen at one time; but in a then other works of art of a similar nature had been given to the Museum or purchased by them, and it was then thought better to intermix them, so that objects of a similar character might be seen together. A catalogue of the Temple Collection was made and left in the Museum, and labels were placed on all the objects of art to show that they belonged to the Temple Collection.

### Union of Army Offices.

Mr. SHAW asked the Secretary of State for War whether the rumoured purchase of Dover House by Her Majesty's Government was correct; and, if so, what were the objects for which such purchase had been made.

Mr. CARDWELL said it was not true that the lease of Dover House had been purchased by the Crown. But, on the matter to which he understood his hon. friend's question pointed, he had to say that the best mode of placing the War Department and the Horse Guards under the same roof was now under the careful consideration of the Government.

#### Gravesend County Court.

Sir C. WINGFIELD asked the Secretary of State for the Home Department when it was intended to commence the construction of the county court-house at Gravesend, as the site for this building was purchased two years ago.

Mr. AYRTON said a sum was placed in the estimates of the present year for this building, and if it were voted by the House the building would be commenced at once.

#### The New Law Courts.

On April 27, Mr. GREGORY asked the First Commissioner of Works whether the Government had decided finally on the site for the new Law Courts; and if so, whether the proposed site could be acquired without delay; and in what manner and how soon would the subject be again brought before the House of Commons. Perhaps the right hon. gentleman would be able to state the precise spot mentioned by the Chancellor of the Exchequer as a desirable site for the new Law Courts.—Mr. LAYARD: The Government have decided to propose to the House a plan for the erection of the new Law Courts on the site comprised between Somerset House and the Temple, bounded on the south by the Thames Embankment, and on the north by Howard Street and several small alleys and passages connecting that street with the Temple and King's College. This site will furnish six acres of building ground. Mr. Street, who is now occupied in adapting the plans which he has already prepared for the Carey Street site to this new site, informs me that he will be able to erect all the Law Courts, and every office necessarily dependent thereon, upon these six acres. It is my intention to introduce very shortly—if possible before Whitsuntide—a Bill which, should the House think fit to pass it, would enable the Government to proceed without delay to acquire the proposed site, and to commence the erection of the Law Courts upon it. I shall be prepared, on the introduction of that Bill, to give a full explanation to the House of the plan contemplated by the Government, and to point out its great advantages over all other plans hitherto suggested. At the same time I shall be able to give such assurances to the House as will, I hope, convince them that it may be carried out, including numerous and most convenient approaches, for the sum mentioned by my right hon. friend—viz., 1,600,000*l.*, or at a much less cost than any other scheme. Mr. Street is now preparing detailed plans, which I shall be able to submit to the House before the second reading of the Bill. Before sitting down I may state to the House that I have received a communication from the Chief Baron of the Exchequer, Sir Fitzroy Kelly, averring that he and all the Judges with whom he has communicated, except one, are of opinion that upon every ground, as regards the Bench, the Bar, the solicitors, the suitors, and the public—I quote his own words—the Thames Embankment should be preferred for the site of the Law Courts.

Mr. HUNT asked what was to be done with the Carey Street site, and whether notice had been given to those persons whose property would be required for the new site.

Mr. LAYARD promised to explain this when introducing the Bill.

Lord J. MANNERS hoped full opportunity would be given for discussion upon the Bill.

Mr. LAYARD said he had reason to believe it would be a public Bill, and therefore every opportunity would be given for discussing it.

#### New Port and Docks in Malta.

Mr. ONSLOW asked the First Lord of the Admiralty what was the present state of the works in the intended new port and docks at the Marsa in Malta, and when they would be completed, so as to afford accommodation to merchant ships.

Mr. CHILDERS.—The Marsa, or extension of the harbour proper, is complete, though some disappointment has been experienced from a large area of it having a rocky bottom. This we propose to remedy by laying down the requisite moorings. The works at the north-west basin have been suspended, partly at the instance of the local government, pending the decision as to its depth. Mr. CHILDERS added that he had just sent out certain instructions, which he hoped would speedily lead to a satisfactory settlement.

#### Greenwich Hospital.

Mr. TREVELYAN rose for leave to introduce a Bill to make better provision respecting Greenwich Hospital and the application of its revenues. In the course of his remarks he said that as yet the Admiralty had not determined for which purpose the main building should be applied. The cost of keeping up the seven acres of land surrounding the Hospital was 5,000*l.* per annum. In order to reduce the number of the inmates of the Infirmary, several of the patients were to be sent to Haslar and Portsmouth Hospitals, where they were to be maintained at the cost of Greenwich Hospital. Henceforth, admission to the infirmary of Greenwich would only be given to infirm pensioners or to those suffering from actual ill-health. It was added that the inconvenience of having the sick on ship-board had been felt so strongly by the Committee of the Seamen's Hospital, that the society had endeavoured to build a hospital on land, but it was found that to erect a suitable one would cost 80,000*l.*

Leave was given to introduce the Bill.

**Discovery of Old Coins.**—In digging the foundation of a house on the Cowley Road, Oxford, a large number of old coins, enclosed in an earthenware pot, have been discovered. The pot was broken by the workmen, and the coins were dispersed and taken away by a number of persons who happened to be near the spot. They were of silver, and of different sizes, the largest being somewhat smaller than the present shilling. The coins are said to be of the reign of Edward I.

## LEGAL.

### An Architect Suing for the Balance of a Church Building Account.

At the Leeds County Court, on the 20th ult., an action was brought by Mr. J. Green, architect, Todmorden, to recover 45*l.* which he alleged to be owing him by the vicar and others in the parish of Aysgarth, near Bedale, in respect of the restoration of the parish church, which the plaintiff had carried out. Measures were taken some years ago to put St. Andrew's church in a proper state of repair, and as it is one of the livings of which the corporation of Trinity College, Cambridge, are the patrons, that body contributed towards the expenses of the restoration. The cost of restoring the chancel was defrayed by Trinity College, and the cost of the rest of the work by the parish, which was represented by the defendants. In 1863 and 1864 plaintiff took dimensions and made out drawings, and the charge for this work at that time was stated to be 150*l.*; but some alterations were afterwards effected, and for this 50*l.* was charged, with 20*l.* in addition for extra travelling expenses, bringing the total charge in this respect against the parish of 220*l.* Of this amount 178*l.* had been paid, and there was a balance left—the sum sued for. A similar charge was made against Trinity College, and that body paid the sum. Plaintiff, beyond these amounts, received a commission of five per cent. upon the outlay in the reconstruction of the church, which was said to be upwards of 3,000*l.*

Several witnesses were called on the part of defendants to prove that the agreement with plaintiff by the Restoration Committee was, that he should receive five per cent. on the expenditure, and that that was to include everything.

His Honour took into account the conflicting statements, and said he would act as a jury would have acted in the case—that was to say, they would have split the difference. He gave a verdict for the plaintiff for 20*l.* 1*s.*, the odd shilling being added in order that the award might carry the costs in the court above; the suit having been sent down for trial by the Court of Common Pleas. His Honour, however, ordered that the parties to the action should pay their own costs in the County Court.

#### Important from Australia.

We read in the *Melbourne Argus*, by the last mail, that the case of Bruce v. Ligar and Another, now before the Equity Court in Melbourne, is one of some importance, and is likely to create a great deal of interest. The plaintiff is one of the trustees of the estate of the late John Vans Agnew Bruce, the well-known contractor for the Victorian Railways, and the principal defendant is the Surveyor-General. The trustee claims some 7,000*l.* from Mr. Ligar (who is also one of the trustees), being part of the proceeds of the sale of a station which belonged to him and Mr. Bruce, but for which he received the money. We are informed that an offer of 2,400*l.* was made on behalf of Mr. Ligar to settle the matter, but it was refused.

## ON THE DUTIES OF AN ARCHITECT.

ON THE DUTIES OF AN ARCHITECT, WITH REFERENCE TO THE ARRANGEMENT AND CONSTRUCTION OF A BUILDING. Read at the Society of Arts, on Wednesday, April 28. By T. ROGER SMITH, Esq.

THE nature of an architect's duties with reference to the arrangement and construction of a building; in other words, the routine of his regular and most familiar professional work, is the subject which I have ventured to think it may be worth your while to consider this evening. There is much which becomes customary routine to the practitioner of any art, which it is yet well worth while that those should know who may have to criticise his works, or to avail themselves of his services, or who may think of his profession for their sons. In the case of many manufactures and arts, which are by no means of universal or even very general application, this sort of information has been eagerly sought and fully diffused; but, familiar as we all are with buildings, there exists good reason for supposing that by many the nature of an architect's work is less thoroughly understood than might have been expected: I have, consequently, thought that an endeavour to make quite clear what he can, and what he cannot do, would be of service. In this inquiry I propose to take a familiar example, that of a dwelling-house of good size, and to trace its history from its commencement to its completion, showing at each stage the share which the architect takes in the work; and I shall illustrate what has to be stated, by exhibiting the actual working and other drawings, &c., of a building of this sort, recently completed by myself.

Suppose, then, that an individual is possessed of a site, probably recently bought, and of the useful funds, and is minded to build himself a house. We will further suppose, for the sake of simplicity, that this is a country site, and that some circumstance points out beyond question one particular situation on the estate as proper for the building, so that no trouble as to selection of the exact spot has to be encountered. The question immediately to be solved being what sort of house to build, and how to set about it, the first step, in all probability, will be to visit, or at least to think and talk over some houses already known or known about; and probably, according to the degree of constructive skill or draughtsmanship he possesses, the intending proprietor will make some sort of sketch, or model, or other design. This will not have been carried on far or long without the question of obtaining skilled assistance being thought over; and either from a general idea that it is the right thing to do, or from a real knowledge that trained special skill is indispensable to the success of such an undertaking, we will suppose that it has been decided to call in an architect.

It is foreign to my purpose to say anything about how the architect is selected, though it is fair to add that the selection is a matter of considerable importance. In the case of public buildings, competition is very frequently resorted to; this is rarely done in private practice; and, in order to trace the course of a design produced under the most favourable and natural circumstances, it will be best to suppose that the architect is con-

sulted at the commencement of the undertaking, and entrusted with the work from the very beginning, not in consequence of his design having been chosen in a competition, but in consequence of his ability and integrity being known by the person intending to build.

The first step, after the architect has received some preliminary instructions as to the general nature of the building wanted, will be for him to visit the site. It is, perhaps, best that he should be able to form some very vague general idea of the size and sort of house intended, before visiting the ground it is to be built upon; but no wise architect will put pencil to paper, without first seeing where his future work is to stand, and what will be near it, and studying the peculiarities of the site with some care, or (if that be quite impossible) without trying to form a good idea of it from maps and photographs. The points to be specially noticed on a site are the aspects obtainable for different rooms, and prospects from different windows; the peculiarities of shelter or exposure; the approaches, and space for gardens, grounds, &c.; the facilities for drainage and water supply; the dryness or dampness of the site, and its levels; the nature of the building materials within easy reach; and such local peculiarities of surrounding, or association, or character of scenery, or of neighbouring buildings, as influence style or design. It is now necessary to have sufficient instructions to shape a design upon, and here, as is natural, the custom varies with the peculiarities of each client. Many clients make a rough set of plans—usually defective. Others go even further, for I have had a model put into my hands as my instructions. Those who cannot draw, and some of those who can, wisely prepare only a list of what they require; availing themselves, probably, of some of the many published works on the subject. It requires much care to make such a list complete; when, however, it is complete, and a trustworthy series of sizes for principal rooms has been added, such a list forms a good basis for the architect.

In all probability the most satisfactory results are obtained by simply telling the architect what requirements it is wished to accommodate, and what special or unusual arrangements are required to be introduced, and giving him access to any model, either as to arrangement, size of rooms, or treatment, which it is wished to follow—settling, in fact, the outlines of accommodation wanted in consultation with him, but leaving it very much to him to suggest how that accommodation shall be disposed. Thus, in a dwelling-house, the architect is best instructed by telling him how many members of the household, and how many guests, are to be housed; what are the habits of the family; what existing rooms in known houses the new apartments ought to resemble in size, in shape, or style; and what house or houses (if there be such) the client looks upon as models in any special portion or throughout.

It is often the case that this part of the question is not easily disposed of. The architect's previous knowledge of the subject, the client's knowledge of what he requires, and the difficulties of site, frontage, and what not, under which he labours, are not the same in any two cases, and the trouble varies as they vary.

(To be continued.)

## NEW BUILDINGS AND RESTORATIONS.

**A New Chapel** has just been erected in Hatfield Town, Hatfield Broad Oak, at the entire cost of Miss Poole, of Matching Hall. It is a substantial structure of Cambridge white brick, picked out with red and black; well fitted up, lighted, and ventilated. Cost about 350*l.* Mr. Perry, of Bishop Stortford, architect.

**New Church in Halifax.**—The chancel corner-stone of the new church in Rhodes Street was laid on the 21st ult.

**At Coad's Green**, near Launceston, a recently-repaired Wesleyan Chapel has just been re-opened. A new gallery and spiral clock tower have been erected, a stained-glass window fitted in, 100 additional seats fixed, and two vestries built; also residence for the minister. The whole has been under the direction of Mr. C. P. Wise, architect, of Launceston.

**The little church of Fleet Marston**, near Aylesbury, Bucks, was re-opened, a few days since, after a complete restoration. The stained-glass window at the east end, by Messrs. Burlison & Grylls, was given by Mrs. Bickersteth. The church consists of nave and chancel, both of them of the Decorated period. The roof of the nave, an interesting work of the fourteenth century, which had for many years been hidden by a low flat ceiling, is now laid open, and restored.

**The Proposed Public Hall in Carlisle** is about to become a *fait accompli*. A meeting will be held early in this month, 'to consider the practicability and the advisability of erecting a Public Hall in this city.'

**Cockermouth Union Workhouse** is proposed to be enlarged. At the last meeting of the Guardians the clerk presented plans in reference thereto from the Poor Law Board. The Board stated that land for a site could now be got on very favourable terms, and they were of opinion that, instead of proceeding with the contemplated workhouse improvements, it would be better to build schools and dormitories.

**A New Fever Hospital** is talked of for Stockton. At a late meeting of the Local Board of Health, the medical officer reported that the cases of fever in the town were increasing, and recommended that a fever hospital should be established. The Mayor stated that he had received a letter from the Board of Guardians on the desirability of providing a fever hospital, and stating that they would be willing to co-operate with the Local Board in the matter. The Town Clerk said he had also received a letter, and had seen the clerk to the guardians, and told him that they were the proper authorities to provide accommodation for paupers suffering from fever. Mr. Richardson said the town ought to have an hospital. It was ultimately agreed that the Town Clerk should write the authorities in other towns to ascertain who provided fever hospitals under such circumstances.

**The Parish Church of Windermere (Lake District)** is to be restored and enlarged.

**Proposed New Cemetery at Stockton-on-Tees.**—The borough surveyor, having been instructed to prepare the plans for the laying out of the New Cemetery, has since laid them before the Town Council. The estimated cost of the land, laying out of the ground, and building of the chapels, was 7,500*l.* Sixteen acres of land had been purchased, but it was recommended that only eight acres should be laid out for the present, and the other eight let for ten years, at 3*l.* per acre.

**The Church of St. Chad, Haggerston**, built from designs by Mr. Brooks, has been consecrated. It is built of brick with stone facings, is very high, but plain, the windows being devoid of ornament; the capitals of the pillars and shafts are as yet uncarved, and the reredos is unfinished. Yet the general effect is good, and the appearance of the building impressive. On the north side of the choir is the organ chamber, and on the south a small chapel in which are three windows of coloured glass. High up in the centre of the apse, in which the choir terminates, is also a window of stained glass representing our Lord in Majesty. It is intended to carry the reredos up to the foot of this window. The altar, on which stand the two altar candlesticks, is placed on the chord of this apse, so that there is a space like an ambulatory behind the reredos.

**New Town Hall.**—A company has been formed for the erection of a new Town Hall in Rickmansworth, Herts. 206 shares (representing 1,030*l.*) were taken at the inauguration meeting.

**A new tower and spire for St. Peter's, Bournemouth**, is to be erected from designs by Mr. G. E. Street. The foundation-stone was laid a few days since.

**The new Volunteer Drill Hall at Bedale** was formally opened on the 22nd ult.

**The New Church, Lennox Street** (says the *Melbourne Argus* of February 17), was opened on Sunday last. The building is not yet finished according to the design of the architect—the tower has to be erected, and about half as much more length added, before it can be called complete. Up to the present, the cost of erection has been 2,300*l.*

**Rebuilding of St. Andrew's Church, Hertford.**—The first meeting of the committee appointed to carry out the works connected with the erection of a new church, met on the 22nd ult. at the Town Hall. The following resolutions were carried:—That on the specifications being approved, and the contract signed, it will be advisable at once to proceed with the work of pulling down and rebuilding the church, and that orders be given to the architect to that effect. That the allowance to the architect be 5 per cent. on the outlay, and 20 per cent. for travelling expenses and attendance on the works. That a clerk of the works be appointed at a remuneration of 2*l.* 2*s.* per week, and that Mr. M. S. Longmore be requested to communicate with Mr. Cousins, the clerk of the works at the new Union Workhouse, with a view to his being appointed.

**The New Infirmary at Highgate** (belonging to the parish of St. Pancras) will accommodate 524 beds, and the contract sum for its erection is 36,000*l.*, at the rate of 69*l.* per bed.

**St. Winifred's Well, Holywell.**—The Local Board have selected the designs sent in by Messrs. Scrivener & Son, of Hanley, Staffordshire, for new hot and cold baths in connection with the above celebrated waters. These baths are to be erected forthwith, and it is expected the Board will realise a very large income from that source, by which means they contemplate several important town improvements.

**Kidsgrove, Staffordshire.**—The Local Board have instructed Messrs. Scrivener & Son, of Hanley, to prepare a survey of the District Parish, as also to prepare a plan for the complete sewerage of the town.

**New Independent Chapel at Heytesbury.**—This chapel was opened a few days since. The new edifice is built on the site of the old one, and a long lease of the land has been granted by Lord Heytesbury. The architect is Mr. Stent, and the contractor Mr. Scamell, of Warminster. The style of architecture is 13th century Gothic, and the plan is a parallelogram, with immediate access to large and commodious class-rooms and vestry, with side entrance, lobby, &c. The chapel is seated with open deal benches, and will accommodate about 200 persons on the ground floor and 180 in the gallery.

**Building Progress at Alton (Hants).**—A large amount of building has been lately going on in Alton. A hop garden, recently sold for building purposes, has been bought up by working men and cottage speculators for the erection thereon of workmen's cottages. Agents who have the letting of property in the town and neighbourhood state that they have frequent applications for houses by people desirous of settling in the town; but the total want of a class of superior houses prevents many from making the town their residence. It is said that labourers from the adjoining villages seek to obtain cottages in Alton because of the indiscriminate almsgiving for which the town is noted.

**Church Building.**—The church of Rhos Crowther, Pembrokeshire, has been reopened after extensive restorations.—The new church at Burnhope, in the ecclesiastical district of Holmside, is progressing. The style of the architecture is Geometrical Gothic of the 13th century. The plan consists of a nave, chancel, organ-chamber, vestry, and western porch. The whole of the sittings will be free.—The parish church of Otley has been restored and reopened. It is dedicated to All Saints, and was originally a Saxon fabric. The east or old church window is certainly very ancient. The west, or new part of the church, it is conjectured, was built in the reign of Henry VIII. The church abounds with monuments. A new organ-chamber and a new vestry have been erected, and the whole of the church has been repewed.—The parish church of Eaton Socon, Beds, which has been undergoing an extensive restoration, has been reopened for public worship. The church is in the Decorated style of architecture, with the exception of the chancel, which is Perpendicular. The old square pews have now entirely disappeared, and modern oak seats have succeeded them; a few of the same



style, nevertheless, which were in the church before, have been restored. An old Norman font has been restored and replaced in the church, after being out for many years.

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

### House Property in London and on the Continent.

The following statistics are interesting as showing the relative value of house property in London and the chief continental cities. In London the average amount of rent paid by a tenant is from  $\frac{1}{3}$  to  $\frac{1}{10}$  of his income. In Berlin it is from  $\frac{1}{4}$  to  $\frac{1}{2}$ , whilst in Vienna it is from  $\frac{1}{4}$  to  $\frac{1}{3}$ . The average number of inhabitants in a house in London is 8, in Berlin 32, in Paris 35, in St. Petersburg 52, and in Vienna 55. The reason for the great difference in numbers between London and the cities of the Continent is the circumstance that our 'insular peculiarities' lead us to prefer that our house should be our castle, whilst abroad the system of flats is the rule, not the exception, as with us. Taking this fact into consideration, house rent abroad, except in provincial towns, is high; we should certainly think 200*l.* rent a high sum for a man with an income of 600*l.* a year.

### Too Bad.

Who is the young man in Mr. Fowler's office who 'does' the architecture of his stations? At the South Kensington station of the Metropolitan Railway there have recently been superadded to the external structure certain decorative parts in cement—foliated capitals to piers and the like—so astoundingly, outrageously, and ludicrously bad that we wonder the very stones—or bricks—of the Museum hard by do not rise and mutiny. Has Mr. Fowler ever visited that Museum? Has his young man? If so, we must say the progress of Art education is slow in some minds. We invite the attention of Mr. Henry Cole to these 'Art-treasures.' He might perhaps induce the Metropolitan directors to let him have them for a time, 'on loan.' They would furnish an instructive lesson on the connection between architecture and civil engineering. Or, perhaps, they might induce the framer of the new law on elementary education to make it 'compulsory' on the part of the young men who do the architecture in engineers' offices.

### The Sheffield Lock-out.

A strike, or to speak more correctly, a lock-out in the building trade is impending, the Master Builders' Association having signified their intention to the workmen of enforcing the 'hour system' of payment after May 1 (this day). It is expected that the question will not long remain open, as the masters are well united in their determination, and the trade is at present very dull.

### The Building Trade in Barnsley.

Few, if any, of the numerous West Riding towns, of similar size and importance, can boast of a briskness in the building trade such as Barnsley now possesses. For some years past the town itself has been greatly improved. New towns, as it were, have been formed on almost every hand, which has caused the building trade generally to be very brisk. In almost every other town, notices have been given to the men to work under the hour system, but in Barnsley, although there were several members of the Builders' Association, no effort has been made to enforce the new rule. The masters, no doubt, feel the difficulty of enforcing the rule when trade is so very active, and when they have so many contracts on hand. Should the system, however, be generally adopted, there can be no doubt but the masters in Barnsley will follow those in other towns. The erection of cottage property within the past five years has been very great. In 1868 not fewer than 92 plans were passed by the Board, from which 300 houses and other buildings have been erected. In addition to the numerous streets which have been laid out, and on which buildings have been placed, several large works are in the course of construction. The Barnsley Gas Company have just let the work required to be done in the erection of a new plant at the outskirts of the town. The mason work required for the sheds has been entrusted to Messrs. Robinson and Sons, builders, of Barnsley; the tank to Mr. Ridal, builder, of Sheffield; and the holder to a Birmingham firm. The new Midland extension from Cudworth to Barnsley has within the past three years found employment for a large number of hands, inasmuch as the town is crossed by stone viaducts, or arches, at a good height. Although the line itself is nearly finished, there is still a good deal of work to be done. The Company are about to erect a new station on a large number of arches. In addition to this, a new County Court will have to be erected, as the present one is about to be taken by the Company. A good summer trade is vouchsafed, not only in the town, but in the South Yorkshire district, where a large number of new pits are being opened out.

### Isthmus of Corinth Canal.

Piercing the Isthmus was vainly attempted by the Emperor Nero. Before the establishment of the Roman domination, the Greeks themselves proposed to effect a connection between the two seas, but were forbidden to prosecute the enterprise by the famous Pythian oracle, addressed to the Cnidians, which may be thus rendered:—

Delve not, nor towers upon the Isthmus pile:  
Had Jove so willed, himself had made an isle.

The Suez Canal, the plant used for the excavation of which it is suggested to carry to Corinth, is the revival of a work of Necos II., the fifth king of the 26th Egyptian dynasty, reigning at Sais. He was the Pharaoh Necho of Scripture, who defeated and slew King Josiah at the battle of Carchemish, and was himself overthrown by Nebuchadnezzar, after a reign of seventeen years.

### The Rotherham Hospital Competition.

Ninety-two sets of drawings, comprising at least 650 sheets, are now being publicly exhibited in the various apartments of a small house in Frederick Street. As a rule they are badly hung, the best and most

important drawings being either close to the ceilings, or 'stowed away' in corners out of sight. This is the case notably with by far the most practical plan, and, in our opinion, the most truthful design, in the series. It has the motto 'Necessitas,' and bears the impress of anything but 'a prentice hand,' and we gladly take this opportunity of rescuing it from its ill-deserved obscurity. The design, which has a nice and thoroughly mediæval sentiment, is quiet, well fitted for its purpose, and represented by drawings we should like to see the rule in public competitions, and which at once fix themselves to be the work of its author. There is a simplicity and a thoroughly-working business-like character about the plan and design to which we are glad to draw the attention of those interested in the matter. 'Comme il faut' has given a nice sentiment to a work represented by an excellent set of drawings, but is quite at sea in his plan. 'Dux' has an imposing front with lofty slate tower, and a plan which has many good points.

The design bearing the motto 'Strive' is far above the average, and though carefully studied, and drawn with feeling, has not sufficient of the hospital character to satisfy a critical observer. 'Hospital's' design is good in sentiment, but ruined by his plan. 'Set square' deserves a passing notice. With these and two or three exceptions, the designs are ordinary and hardly commonplace, the influence of the 'Strand Music Hall Gothic,' yclept the 'Hair-stand-on-an-end style,' being strikingly apparent in many; and we cannot but draw the attention of those who are personally interested in the undertaking to the fact of the great bulk of the plans being thoroughly unfitted for hospital requirements.

The estimates range from 4,460*l.* to over 10,000*l.*, the former by the author of the design 'Necessitas' before mentioned. This should be an additional and urgent reason for the committee to take the only means at their disposal for ensuring a fair decision to the numerous competitors, and the best design for their hospital, by securing the assistance and advice of some eminent architect. Without such a step it will be absolutely impossible to arrive at a satisfactory conclusion. It may interest the authors of the drawing to know their work is insured against fire for the sum of 2,000*l.*

### The Doré Gallery.

We have not space in our present number for more than the bare announcement of the opening, on the 26th ultimo, of a new Gallery, at No. 35, New Bond Street, in which 24 oil paintings by M. Gustave Doré are exhibited, and in which, moreover, there is space and light enough to view them. We have the less regret for being obliged to defer a more detailed notice, from the fact that we may now welcome M. Doré as a permanent guest; and we do welcome him, most heartily and sincerely, accordingly. We are rejoiced to hear that the apartment which has been arranged as a gallery (some 80 feet long and efficiently lighted from above) has been taken for ten years; and we trust that the reception given to a gifted artist, who pays so marked a compliment to the public opinion of this country, will be such as is due to his great and original merit. 'The Death-bed of Rossini,' which excited so much interest among the friends of the *maestro* in Paris; 'The Triumph of Christianity,' which was exhibited at the German Gallery last year; the original painting of 'The Neophyte,' a replica of which was shown at the same place; and a group from the 'Midsummer Night's Dream,' are among the pictures now on view. We hope to return to the subject.

### Railways and other Works to be undertaken shortly in France.

The scheme of the seventeen new lines of railway, forming what is called the fourth *résseau* of the French system, is being approved bit by bit. The Corps Legislatif has approved of the treaty entered into with a society represented by M. Mangini, by the Minister of Public Works, for the construction of the proposed line from Lyons to Montbrison.

Approbation has in like manner been given to the treaty made by the same Minister with the Northern Railway Company of France, for the construction of a line from Arras to Etaples with branches, and of another from Luzarches to the St. Dennis and Pontoise Railway.

The concession of several lines in the departments of the Nord, the Pas de Calais, and the Aisne, made to a company represented by Messieurs De Melun, De Merode, and others, has also received the approval of the Legislative body.

The Minister of Public Works has laid three important projects before the Council of State:—The improvement of the bed of the Rhone between the Givers and Vienne, and of the navigation of the same river at the pass of Grigny in the departments of the Rhone and Isère; another for the enlargement of the station of Abbeville; and a third, for certain changes in the concession for a graving dock at La Ciotat, Marseilles, made to the Messageries Impériales.

The concession of the railway from Lérrouville to the Ardennes line will shortly be put up to competition; the maximum subvention offered by the Government is 13,500,000 francs (540,000*l.*), payable in sixteen equal half-yearly sums, commencing with January 15, 1871. The Government, however, reserves to itself the right of transforming, at the period just named, the subvention into ninety-year annuities, at the rate of 4 fr. 50 c. per cent.

A definite concession has been made to the Company of the *Chemin de fer du Midi*, for the construction of a line of railway from Condom to Port Sainte Marie.

Several other concessions are likely to be announced shortly.

### Monument to Rossini.

The Achille Leclère prize for the best design for a monument in honour of the late composer Rossini has been won by M. Dillon. The work is to be placed in a garden, and the statue of the *maestro* is placed in a kind of temple; in the intercolumniations of the colonnade which surrounds the principal statue are four figures representing the four *chef-d'œuvres* of the master—'William Tell,' the 'Barber of Seville,' 'Moses,' and 'Semiramide.' On the central pedestal are inscribed the titles of Rossini's operas. The artist has made use of bronze as well as marble in his design.

## General.

**Preservation of Churches.**—The House of Commons, on Monday, April 26, went into committee on the Irish Church Bill, and passed, almost without observation, the 24th clause, which provides that on commutation of an annuity the annuitant should receive the amount of any building charge to which he might be entitled. On Clause 25, containing the proposed enactments with respect to churches, and to the 1st Article thereof, providing that ruined or disused churches of a monumental character might be vested in the Commissioners of Public Works in Ireland, Mr. Disraeli moved as an addendum that such buildings should be preserved, and not used as places of worship. At present the Ecclesiastical Commissioners of Ireland defrayed the annual expenditure for repairing the churches out of an ecclesiastical fund arising from the prelates' estates; and what he proposed was that that privilege should be continued to the Irish Church, that the amount should be multiplied by fourteen years, and that the aggregate should be paid to the new Church Body. His first amendment, therefore, in this sense, applied to the ruined or disused churches.—Agreed to. Mr. Pim proposed to strike out the third section in the clause, that certain large churches of a monumental character, not exceeding twelve in number, should be partially maintained by the Commissioners. After some debating, the committee divided, and agreed to omit the section by 232 to 132. Clause 26, respecting burial grounds, was agreed to, after undergoing a few alterations of an unimportant character, and a discussion of some length, on a motion of Colonel Greville-Nugent, to vest the control over churchyards in burial boards, instead of the new Church body, which motion was withdrawn.

**Church Furniture.**—In the New Church at Sawrey, the communion table, the two chairs, and the kneeling stools, are of solid oak, carved and perforated from designs made by a gentleman resident in the immediate neighbourhood, and are the workmanship of Mr. John Taylor, carpenter, of Far Sawrey, who was the contractor for the woodwork of the church. The reading desk, also of oak, is the gift of the wife of the gentleman alluded to above, and is from a design made by Mr. Robt. Brass, of London, the honorary architect of the church. It matches the oak pulpit, but is lighter in appearance, in consequence of openwork having been adopted instead of panelling.

**Sewers Rate, Lighting and Watching Rate.**—From a lately-published Blue-Book we learn that the sums levied during the seven years ended with 1867 were:—1861: Sewers rate, in counties 35,323*l.* in City of London 21,058*l.*; total 56,381*l.*: Lighting, &c. rate, 3 & 4 Will. IV., cap. 90, 4,598*l.*—1862: Sewers rate, in counties 31,120*l.*, in City of London 17,120*l.*; total 48,240*l.*: Lighting, &c. rate, 42,256*l.*—1863: Sewers rate, in counties 45,796*l.*, in City of London 16,631*l.*; total 62,427*l.*: Lighting, &c. rate, 36,837*l.*—1864: Sewers rate, in counties 44,010*l.*, in City of London 17,242*l.*; total 61,252*l.*: Lighting, &c. rate, 42,194*l.*—1865: Sewers rate, in counties 42,319*l.*, in City of London 17,771*l.*; total 60,090*l.*: Lighting, &c. rate, 41,846*l.*—1866: Sewers rate, in counties 41,325*l.*, in City of London 17,872*l.*; total 59,197*l.*: Lighting, &c. rate, 40,783*l.*—1867: Sewers rate, in counties 42,872*l.*, in City of London 40,075*l.*; total 82,947*l.*: Lighting, &c. rate, 40,888*l.* The leap in the City sewers-rate in 1867 is inexplicable; but on reference to the Home Office Blue-Book, from which the quoted figures were taken, it is plain that the 17,638*l.* 17*s.* 6*d.* paid over by the Chamberlain of London for main drainage purposes has been improperly ascribed to the Board of Works 'in aid of their expenses.' This probably points to the greater part of the increase. The lighting and watching rates look small, but the usefulness of the Act is abundantly manifested by the number of small towns and villages which avail themselves of its provisions. With the exception of Leeds, where the rates under the 3 & 4 William IV., cap. 90, amounted last year to 9,259*l.*, and of Bradford (near Manchester), which raised 1,295*l.*, the heaviest seldom exceed two or three hundreds, and the great majority are below 100*l.* a year. The aggregate amount for 1867 represents the requirements of 280 places. Inclusive of the City of London, 31 Commissions of Sewers have furnished the Blue-Book with accounts for 1867. The total expenditure of that year was 27,105*l.* for ordinary works and maintenance, 10,690*l.* for new works and improvements, 4,951*l.* for loans paid off and interest, 9,179*l.* for salaries and management, 37,170*l.* for other expenses; making the total expenditure 89,096*l.* The expenditure under the Lighting and Watching Act was 40,612*l.* in 1867; of that sum, 3,020*l.* was for new works and repairs of lamps, posts, and pipes; 29,915*l.* for gas, 4,692*l.* for salaries; and other payments, 2,984*l.* The rates are entirely devoted to lighting the localities in which they are raised.

**Fall of a Music Hall.**—The New Adelphi Music Hall, Union Street, Oldham, which was opened a few months ago by the Oldham Philharmonic Society, fell on the morning of April 19, and has become a complete wreck. The cause of this catastrophe is the undermining of the foundations while excavating the adjoining new buildings.

**The Civil and Mechanical Engineers' Society** has just handed us its book of rules for 1869. At the end is a list of papers read up to close of previous year, including some on foundations, iron girders, tunneling, building stones, retaining walls, stone and brick arches, and other subjects interesting to the architect and builder. It appears that the members of the society visited several of our great engineering works in progress during 1868. The hon. secretary is T. H. Roberts, Esq., and the meetings are holden at the Whittington Club, Strand.

**Mr. Turner** has been appointed surveyor to the Herne Bay Improvement Commissioners.

**Covent Garden Theatre.**—It is said that the Government are negotiating for the purchase of Covent Garden Theatre. It will be needed as a central station for the new telegraph system of management.

**Robert Scott Lauder, R.S.A.**, one of our best known Scottish painters, is no more. He was born in 1803.

**Roman Remains at Bath.**—Discoveries are still being made of Roman remains during the excavations on the site of the old White Hart. The remains of the Roman wall, discovered south of the temple platform when the foundations of the south wing of the hotel were put in, have been traced right across Stall Street, and left passing under the foundation of the pump-room. The section of the soil at the site of the Great Temple supports the presumption that this building must have stood perfect or nearly so, less roof, as late as somewhere about 1070. In the angles of the carrying are remains of the red paint used by the Romans to decorate or preserve the stone.

**The Accident at Saltburn-by-the-Sea**, caused by a girder slipping from one of its piers during the erection of a bridge, calls for investigation. The important matter is whether we shall not speedily hear of many similar accidents arising from the defective iron and workmanship employed in the construction of so many modern structures. Ironwork is being let by open competition on specifications which, if faithfully carried out, must entail a great loss on the contractors, or these contractors must resolve to employ only inferior materials and workmanship. It may be said that engineers can secure themselves by close inspection, but the remedy is with themselves. They know, or ought to know, the cost prices of work, and should only recommend contracts being let to respectable contractors, and at reasonable prices; otherwise, the result will be that which invariably attends a penny-wise and pound-foolish policy.

**Sewage Plans for Bucks.**—At a late meeting of the Bucks Local Board the chairman called the attention of the Board to the great necessity which existed for a proper plan of the sewers of the town. At present no one knew their situation or their depth. Mr. Smith recommended that plans be provided without loss of time. Mr. Field said he thought it would be better to decide the other question as to the disposal of the sewage first, and so the subject dropped.

**Fountains Abbey.**—A great pier between two windows in a room next the kitchen in Fountains Abbey has recently fallen. Every misfortune of this kind increases the subsequent risk.

**Destruction of a Church.**—Early this week, the church of All Saints, Surrey Square, Old Kent Road, was destroyed by fire. The church was 110 feet long by 60 feet broad, and was fortunately detached from any of the surrounding property.

**Northern Architectural Association.**—The quarterly meeting of the Northern Architectural Association was held on Tuesday last, in the Old Castle, Newcastle. After the report was read, plans were exhibited of a wooden roof for the keep of the Castle, in which the Society of Antiquaries proposed to store their collection. It was explained that the society had originally intended to build a museum, but funds had not been forthcoming; and, while the idea had not been altogether abandoned, it was proposed in the meantime to deposit the antiquities in their possession in the keep. In the course of the investigations which had been made, it was discovered that there had formerly been a floor in the keep, and it was proposed to erect a gallery where it had been, and also restore a gallery which formerly existed either for the accommodation of musicians or spectators. It was also mentioned that the Corporation were in favour of covering the keep with a low-pitched roof; while the antiquarians were of opinion that it should be a high-pitched one, plans for both of which had been prepared.

**Metropolitan Parishes.**—On last Wednesday a deputation from the St. George's vestry, Hanover Square, waited upon the Right Hon. G. J. Goschen to express their views upon the union between the parishes of St. George's, Paddington, and Fulham, and to request the right hon. gentleman to assist them in obtaining the sanction of the Poor Law Board to discontinue the new parochial schools. Mr. Goschen said that before any order to stay proceedings could be issued, the consent of the two other parishes concerned must be obtained.

**Disputes in the Building Trade.**—A meeting of the master builders of Bradford was held on Tuesday to receive a report as to the result at the meeting of deputations of the master builders and the stone masons, in reference to the proposed alterations in the rules of the trade. It was reported that all the points, except two, which were of no importance, had been agreed to by the deputation of the operative masons, but the workmen, in an aggregate meeting, had refused to confirm the proceedings of the deputation, in so far as they relate to payment by the hour, and stone worked from quarries. The meeting of employers, therefore, came to the resolution that all the correspondence which had passed between the masters and the men should be published, and they would fall back upon their original notice, requiring the conditions as to the proposed alterations of mode of payment to come into operation on May 3, though they are at the same time willing to submit to the decision of an arbitrator. A lock-out on Monday is apprehended.

### MEETINGS OF TECHNICAL AND LEARNED SOCIETIES.

**ROYAL INSTITUTE OF BRITISH ARCHITECTS.**—Monday, May 3, at 8 P.M.—Annual General Meeting.

**ROYAL ARCHÆOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.**—The next Monthly Meeting of this Society will be held on May 7, at 4 P.M.

**ARCHITECTURAL ASSOCIATION.**—May 14, 7-30 P.M.—Special Business meeting. Mr. Birch's Paper 'On the Domestic Architecture of London from the 16th to the 18th centuries' will also be read, having been postponed to that date.

**ARCHITECTURAL EXHIBITION.**—Tuesday, May 4.—Opening Meeting and Soirée.

**ASSOCIATED ARTS INSTITUTE.**—Saturday, May 1, at 8-15 P.M., Montgomerie Banking, Esq., on 'The Renaissance Influence as Traced in the Elizabethan Dramatists.' May 15.—Discussion. Question: 'Was the Renaissance Movement Productive of any Real Benefit to Art?'

**INSTITUTION OF SURVEYORS.**—Monday, May 3, 8 P.M.—Mr. Menzies on 'The Distribution and Agricultural Use of Sewage.' Discussion on, resumed.

**INSTITUTION OF CIVIL ENGINEERS.**—Tuesday, May 4, at 8 P.M. 1. Discussion, 'On the Outfall of the River Humber.' 2. Time permitting, the following Paper will be read:—'Description of the Low Water Basin at Birkenhead,' by Mr. John Ellacott, Member of Institute C. E.

# The Architect.

## THE WORKS OF FINE ART COPYRIGHT ACT, 1869.



THIS runs the 'short title' of a bill, to the great importance of which we have already invited attention. This bill has been drafted in consultation with a committee appointed by the Society of Arts, and has been introduced into the House of Lords, where Lord Westbury has charge of it. On Friday last, as will be seen by our Parliamentary Report, this bill passed its second reading, Lord Westbury consenting—nay, in fact, himself suggesting—that it should be referred to a Select Committee.

'Dealing with a subject full of difficulty,' said he, 'and which the Common Law does not touch, I do not pretend that this bill is perfect, and I am quite willing to have it referred to a Select Committee, that it may be thoroughly sifted and its language carefully weighed.' Even if scrutiny had not been challenged by these admissions of a man by nature less ready than most to own to any inferiority or imperfection, we should equally have felt it our duty to draw attention to the bill; but acting upon this broad hint that there are difficulties yet unsolved, we have examined its provisions carefully.

The fine art of Architecture appears to us to be the one point to which our attention ought to be directed, and it appears also to have been the one which the framers of this bill have felt it beyond their power to provide for. Nowhere are architecture, or the arts accessory to architecture, so much as named; and while we cannot but admit that the bill is a step in advance, so far as it relates to drawings, pictures, prints, sculpture, and even photographs, we are unable to see that it would provide satisfactorily for the case of executed architectural works—stained glass, mosaic, or for models showing unexecuted architectural designs. Perhaps the concluding words of Lord Westbury's speech may explain what has, in part at least, occasioned this deficiency. The noble lord said that 'he believed the bill, after consideration by a Select Committee, would succeed in gathering up the loose and uncertain enactments *already in existence*, and in combining them into one harmonious measure.' And it may well be that any measure not intended to go beyond the scope of existing legislation should fall short of a definite and express protection of architecture, for existing Acts are all equally deficient in that particular, so far as they are known to us.

The bill sets out by laying down the principle that 'The author of every original work of art' shall have for his life, and thirty years beyond, 'the copyright, or sole or exclusive right of copying, reproducing, and multiplying such work and the design thereof.' Nothing can be more reasonable; and to help our comprehension of this principle the bill defines the author as 'he who has designed or made any original work of fine art,' and a 'work of fine art' as 'every drawing, painting, photograph, work of sculpture, and engraving.'

These definitions receive amplitude from the context; but amplify as we may, there remains the fact that a *building*, however noble, is not included under the definition of a work of fine art, though the plans for it might be covered by the word drawing, and sculpture enriching it, paintings representing it, or photographs taken from it, would all receive recognition. Thus, as far as we can see, Westminster Abbey does not come within the definition of a work of fine art, while the smallest stereoscopic picture of a corner of it, or the worst of the many effigies within its walls, does. Here at the outset we have, as it seems to us, a defect which ought to be remedied by the introduction of the word Architecture.

Another blot, possibly, exists in the definition of an author as 'He who has designed or made any original work of fine art.' To the admission of him who has designed such a work we fully agree; and perhaps no better definition of what is meant by a design can be given than that embodied in this Bill—'An original conception represented by the author thereof in any work of art;' but is not the definition of the author open to doubt, so long as it places him who designs or makes on one level, supposing an executed work of architecture to be recognised by the legal mind as a work of art, for surely he who 'makes' the building is not the author, or even the joint author, in any sense? If, for example, the Albert Memorial manages to secure recognition as a work of art, will Mr. Kelk be recognised under this definition as one of the authors, and share the copyright with Mr. Scott? The thing is absurd, and requires to be set right.

We have indicated where the most important omission with respect to architecture exists. Buildings are not recognised as works of art. We are far, however, from feeling sure that practical difficulty may not arise to hinder their being so recognised. The feeling has been pretty generally entertained by architects, that any attempt to protect a building once erected and thrown open to the public is futile, and had better not be made; but if this were so, we should hold that works of sculpture erected in public, and open to general inspection,

ought to be regarded in the same light. If, on the other hand, the principle of copyright is of any value at all, it holds good of one work of art as fully as of another, and it is not justice to ignore a right because there is a difficulty in enforcing it. It is more difficult to preserve game than to protect poultry; yet the game laws are still in force. Why not then admit that a copyright exists in a work of architecture as such, as fully as in a statue?

This once conceded, there would remain other points to amend, or at least to provide for. Among these would be the question whether the copyright of any building remained in the architect's hands or those of the owner of the building, and the most useful enactment possible to architects would, of course, be one which preserved to them the sole right of copying in another building their own original architectural work. This would grant architects a protection that sometimes they sorely need, and would prevent their being employed to design one building, which, when erected, and the plans paid for, is repeated again and again by its owner, with no reference to the original author. It is true that the copyright is considered to go with the work of art in this Act; but we consider that it would be easily possible to show in evidence before the Committee on this Bill that the case of architecture is different from that of other works of art; for to copy a picture requires skill approaching that of the original painter; but to copy a building the handiwork of ordinary journeymen will suffice.

The Bill contains an excellent provision that after registration of a design the author may sell his studies made for the execution of it without prejudice to the copyright—that is to say, that they are absolutely his. Now, although there are few cases in which the architect of any work would desire to sell any portion of his sketches and studies—though, by the way, we can fancy that in many instances such studies would be readily saleable—architects have constantly differed from their employers as to their right to retain the working and other drawings used in the erection of buildings.

The regulations of the Royal Institute of British Architects as to professional practice and charges have done much to establish the architect's right to his plans; but nothing would be more easy or more serviceable than to add here a few words, including the plans of an architect in the same category as the sketches and studies of a painter.

In a further section of the bill (No. 9) occurs a provision which, not modified, might be attempted to be enforced against an architect injuriously. It is very properly made an infringement of copyright to repeat not only a design, but 'any part of a design,' and the original author of the design commits an offence by repeating part of a design after he has parted with his copyright in any work of art.

This could not with justice be left as applicable to architecture in such a way as would for instance exclude an architect from the use of any original feature in several different designs; say for example a series of moulded bricks designed by an architect and made use of by him in one building, the copyright of which passes in any way out of his hands. The same moulded bricks, even if so combined as to form features essentially different, would still be parts of the original design—much more would they be so if they were repeated in the same combination. And yet we conceive that, to prohibit an architect from using such features as these in one building, because they had been designed for another, would be almost as unwise, nay, as futile, as to prohibit a painter from introducing green colour, or representations of a dog or a double-barrelled gun, into one picture, because he has already used the same colour or painted the same objects in another. This point, however, ought to be guarded better than in the present wording of the Bill it is.

We have said enough, we hope, to prove that the attention of architects and the Architectural Societies ought to be directed to this Bill while before the Select Committee. There is now open an opportunity of securing adequate recognition of architectural copyright, which, once lost or overlooked, may not return in the lifetime of any of us, and we do trust it will not be allowed to slip, but that the claims and rights and position of the architect and of his valued auxiliaries, the glass-painter, the decorator, the mosaicist, the carver, &c., will be looked into. The present Bill is very broad, and its wording *probably* covers architectural drawings and decorative designs, but this ought not to be left a matter of doubt. The exact nature of the rights of copyright which it is just to reserve to each of these classes of artists ought to be defined, and the language of the Bill ought to be rigidly scanned to make it certain that that protection is secured, either under the existing clauses or by introducing necessary modifications.

The very enquiry into some of the rights of these artists will show that there are no inconsiderable difficulties in identifying them. For instance, where one artist gives the general design of a stained glass window, while a second makes the full-sized cartoon, and a third the window itself: who is 'the author?' or, are there three authors or two?—and have they joint rights? There is no doubt a right and a wrong in these matters, and the right answer to these enquiries can be arrived at, but it is not obvious and on the surface. One thing we are especially anxious should be noticed. There can be no doubt that gross injustice is often done to architects who submit designs in competition, and that the ideas of those who ultimately commission the erected building are in some instances culled from the drawings sent in and not recognised, but returned 'with the thanks of the Committee.' This ought not to be, and we shall have little satisfaction in the passing of the proposed Copyright Act if we are not assured that the



case of Competitions has been most carefully considered and found to be thoroughly provided for.

It may be satisfactory to know that the matter is under the consideration of the Council of the Institute of British Architects, but that body, especially at a moment when the election of new members has very much changed its constitution, can hardly be expected to do much unless supported and to some extent impelled by the action of the general body of architects.

To them we commend this matter, which is one that concerns them vitally; and we commend it not to them only, but to all our readers, for there is no person connected directly or remotely with arts or buildings who is not interested in an equitable, comprehensive, and final settlement of the question of copyright in works of fine art.

## ARCHITECTURE AT THE ROYAL ACADEMY.

By EDWARD W. GODWIN, F.S.A.

IF anything be wanting to complete the sketch of the gradual disunion of architecture and painting, which appeared in the last issue of this paper, it may be found in what is called the Lecture-room of the new Royal Academy. I gave last week the interesting and encouraging fact that, out of forty-four elections to the rank of Associateship, three only were architects; and it may be added, that the period—1841-61—during which these elections were made, was one signally successful in an architectural point of view. All Saints Church, Margaret Street; the selected designs in the Constantinople Memorial Church and the Lille Cathedral competitions; Brisbane Cathedral, by the same architect; the Oxford Museum; the Kildare Street Club; the Crown Assurance Office; the Assize Courts, Manchester; and some other public buildings which it is unnecessary to mention, have hitherto been unrecognised by an Academy that professes to promote 'the honour and interest' of architecture. This week we have an almost equally interesting and encouraging fact to note. There are 1320 works exhibited, and only forty-six of them represent modern architecture. The amount of wall-space given to architects is about equal to one wall and a half of the lecture-room, the whole of which we might have reasonably expected would have been reserved for and occupied by architectural subjects. Not satisfied, however, with driving us within these poor limits, our drawings in one corner are piled up just as of old, and the principle adopted in all the other rooms—to hang everything in good places—is here set at naught. If our sketches of what we are doing or proposing to do in our art were worth exhibiting at all, they were surely worth exhibiting so that they could be seen. That they are altogether out of place here is not now the question. Whether they are or are not, no one will be hardy enough to deny that it would be better for architects and their art to be a little more united in their annual exhibitions. This can only be done by securing the whole of one room at the Academy, and giving up the Conduit Street room, or by leaving the Academy altogether and making one, and only one, Architectural Exhibition at Conduit Street. What we want is a distinct utterance, and no mumbling. So long as the Academy professes to nurture architecture, so long we ask for something more than the paltry admission to its walls which once a year it does out. I doubt whether, in the history of the Academy, the annual Exhibition of Architectural Works has ever been so thoroughly unrepresentative. When I add that the best places and the largest spaces are absorbed by the contributions of Mr. G. G. Scott, R.A., his son, Mr. J. O. Scott, and Sir M. D. Wyatt, one may naturally wish to know what architecture has done that she should be treated so badly. Mr. G. G. Scott, R.A., sends two large frames, Mr. J. O. Scott contributes no less than five large perspectives of his unsuccessful design for Manchester Town Hall, and Sir M. D. Wyatt, not to be outdone in numbers, also sends five drawings of no inconsiderable area. If all this means that the fight for the Associateship is to be between Sir M. D. Wyatt and Mr. J. O. Scott, we can all of us well understand why they should both muster in such strong force. Although even here some of us would have thought that the buildings—the architecture itself, and not fancy designs on paper—would have been the test, not only of membership, but also of admission to the Exhibition walls in such large numbers. It is possible—scarcely probable—that the Academy has done its best, and had but few and poor works from which to make their selection. This, however, is one of those possibilities which are never suggested by anything but the spirit of amiability. Seriously speaking, I have not a doubt that the Academy cares as little about the hanging of architecture as it does about teaching it. Fair drawings of *executed works* by some of the best architects of the day have been rejected or made 'doubtful' for want of room. In the presence of a dozen frames containing water-colour sketches of old buildings, some of them buildings most of us must be tired of seeing, the excuse to the rejected of 'want of room' must sound idle and vexatious. It is not to be supposed, that because the Academy had got a new home and larger galleries, every architect of any art-position would contribute a specimen of his work. Those who have so contributed may think, and justly perhaps, that their fellow-workers ought to have put in an appearance. We naturally ask for Mr. E. M. Barry, A. We

have but two Academicians and two Associates to represent us, and if two out of the four fail to exhibit, it is hard to say what may become of us. It is not unlikely that architectural students may ask for others outside the charmed circle. Have they declined to send, or have they been rejected? Where are Messrs. Christian, Clarke, Burges, Pearson, Chamberlain, Clutton, Cockerell, Hadfield, Lynn, Jones, Pugin, Slater, White, and Withers? We are used to them, and expected them; we even thought it possible that, under the altered circumstances, Mr. Batterfield, Messrs. Shaw and Nesfield, and Mr. Bodley, might have made themselves visible. It is surely not possible that drawings of the actual works of any of these men can have been rejected for the sake of showing us *five* gaudy drawings of one by no means good design, or to make room for such uninteresting material as that shown in Nos. 984 and 1,017, or such defective architecture as that exhibited by Mr. P. C. Hardwick in No. 983, by Mr. G. F. Jones in 1,002, by Mr. Low in 1,007, and by Mr. Law in 1,015! Now that Mr. Sandys' 'Medea,' which was rejected last year, has at last found a place upon the walls, men have not much difficulty in estimating the art value of an Academy rejection. But this increase of knowledge, although comforting to the rejected, is of such a particularly special character, that it is not calculated to do the art of architecture much service or honour in the eyes of the public. Indeed, so blind are the *οἱ πολλοί* in matters architectural, that even their great leader, the *Times* critic, has forgotten that there is such a thing as architecture, and has quietly wrapped it up in the words 'Engravings and Etchings.' It is true there is some excuse for this, inasmuch as in the catalogue the room in which architecture is placed is thus apportioned:—1. Paintings. 2. Engravings. 3. Miniatures, and—4. Engravings, Etchings, &c. The architectural works are in the second division, and people are thus taught the new creed of the Academy, that architecture is a kind of engraving. So far, then, as the Academy is concerned, it must be tolerably clear that Architecture has received nothing to excite her to thankfulness, and that the change to Burlington House has not proved in any way encouraging to our profession. It is just possible we may manage to survive this. Meanwhile, we have to be thankful to Mr. Street, A., and Mr. Waterhouse, for their drawings, which keep architecture above water. Taking the most favourable, the ultra-liberal view, there are not more than fifteen frames which ought to have been hung in any exhibition professing to be representative of what architects have been doing during the past year. I propose to take these fifteen (not including Burlington House) in the order in which they are placed in the catalogue.

967. 'New Villa at Boscombe, near Bournemouth, now in course of erection.'

Mr. R. W. Edis shows in this little work a decided advance. Good brick walls and tile roofs, well put together, with some artistic feeling in the composition of the roof masses. There is a little ungainliness in the disproportion between the heights of the windows, and the porch is not altogether the sort of thing for the house. A half-timbered porch would have been more in harmony.

975. 'Gonville and Caius College, Cambridge. New buildings now in course of construction.'

There is more uniform strength in this design than in anything I have yet seen from Mr. Waterhouse. At Oxford, and in his Town Hall for Manchester, we see evidence of a disposition to be pretty, to fritter away his masses, and so lose both rhythm and repose. This view of his work at Cambridge shows better qualities than all his other works put together. The style is founded on that of the late fifteenth century—rather French than otherwise. It is a pity that his large plain window and angle turrets in the top storey of the tower should have been rendered heavier by the addition of an accidental shadow in the drawing.

Mr. Waterhouse exhibits two drawings of his Town Hall, Manchester. They have been seen, criticised, and described so often, that it is quite unnecessary for me to do more than mention them.

977. 'New building in course of erection for the University of Glasgow.'

982. 'New parish church, S. Mary Abbot, Kensington (about to be erected).'

Both these works have attached to them the name of Mr. G. G. Scott, R.A. The drawings are showy (there are *red* shadows to the yellow dressings); but the architecture is so far below what we used to get from Mr. Scott, that one is apt to think that the kindness and amiability of the man have overgrown the vigour of the architect, and that Mr. Scott, out of gentle consideration for and desire to advance the young ones around him, has left them a free field with his name to help them. The extraordinary likeness between Mr. Scott's later works and Mr. J. O. Scott's design for a Town Hall is more than a family likeness between father and son. The same weaknesses and youthful inconsiderateness which are visible in the Town Hall, even down to the style of drawing, have been more or less visible in all that Mr. Scott has done since he lost the battle of the styles at the Foreign Office. It is no one's business to object to this style of retirement, but many of us yet long—

For the touch of a vanish'd hand, &c.

988 and 989 are two pen-and-ink drawings of new churches in course of erection. I should not select the steep and western transept of St. Peter's,

Bournemouth, as an example of Mr. Street at his best. The church for the Lord Sudeley, in Toddington Park, is a much more successful work. The drawing is marred by bad perspective in the arches of the belfry windows, which seem to fall outwards at the crown. In the design there are only two very small features which one would like to see altered, and in the hope that they will be reconsidered I abstain from mentioning them.

993. 'View of a Design for proposed new Examination Schools at Oxford.' For a public building this is one of the best designs Mr. Street has ever exhibited. With the one exception of the hipped roof, there is little to which objection can be taken. The work is well-balanced, broad in treatment, and bold in conception. I heard a critic talk of the buttresses being stuck on, and there is some truth in it, looking merely at the drawing, which is in pencil, with a good deal of that brilliant sketching which Mr. Street delights in, and very little constructive detail shown.

Nos. 965, 980, and 1012, show coloured decoration—the first for stained glass, the second for a ceiling, and the third for walls.

The drawing, No. 1016, 'Blythwood,' by Mr. T. Roger Smith, has its merits and demerits so balanced that it is difficult to say much about it. If Mr. Smith thinks barge boards, stepped gables, and plain gables coped with wrought stone tabling, are mere fancies of the middle ages, and not the results of local conditions, then he acts up to his thought; but if, as I believe, these three features are all local peculiarities—the result of obedience to nature, our only governor—Mr. Smith has something to unlearn.

No. 1018 is 'The Interior of New College, Dulwich,' by Mr. C. Barry. Why the eccentric curves to the roof, and why so gaudily coloured?

Mr. Seddon exhibits an enormous drawing of his great building at Aberystwith. The size of the drawing and the bad colouring have, I suppose, been the cause of the frame being skied. Had Mr. Seddon sent a careful pen-and-ink or monotone drawing by his own hand, an eighth or a sixteenth the size, it would have been in every way better. The design has been already before the public in various shapes, and has had its fair share of criticism.

#### LORD ELCHO'S COMMITTEE.

WHILE the Government is maturing its plan with reference to the Law Courts upon that part of Embankment land adjoining the Temple, and so satisfying one set of admirers of the banks of our ancient river, Lord Elcho's Committee is carefully pursuing its enquiries as to other portions of the Embankment, and developing plans for laying out the various sites thereon, which will rejoice those of our readers who take special interest in this subject. And those who may not enter into details will yet be glad to know that there is such an earnest spirit at work to do what is right, that we have every reason to believe this question, like the Embankment itself, will be reclaimed from the state of mud, muddle, and chaos which seemed at one time to be its inevitable fate.

Indeed this Committee, instead of referring solely to the Hungerford Bridge and Lancaster Place 'Viaduct,' expanded the scope of its enquiry to a degree commensurate with the more extended view of its duties taken by the members of the Committee.

As for the roadway, or viaduct, as it was erroneously called—for only a small portion of it was ever intended to be carried upon arches, and this merely to avoid disturbing the Savoy burial-ground—it was easily seen from the first that such a crude project, having all the appearance of a hurried compromise merely to facilitate the progress of the Bill at the time of its birth, was foredoomed by the very appointment of a committee to consider it.

But the question as to what is to be substituted is found to be a wider one than was probably anticipated, and the idea of planting a large public Museum and Gardens upon the site—though not a new conception—when once taken up, necessarily called for investigation and some definite plan of arrangement, if only to ascertain if the idea were feasible and worthy of recommendation, or if there were insuperable obstacles to its adoption.

It has long been evident to us that such a plot of land as that reclaimed from the river between Hungerford and Waterloo was worthy of some grand public building, but that even if it could be covered by such, it would be inadvisable at least to do so without the reservation of some portion for gardens or recreation grounds; while, on the other hand, to appropriate the whole of it to this latter purpose would but waste a valuable site, and necessitate the reconstruction of the back neighbourhood, or the ends of the streets now occupying the various levels of the frontage towards the river in an irregular line, leaving still the overpowering mass of the Charing Cross boiler-shed to be masked by foliage alone, for which fifty years' growth would not suffice. It is satisfactory therefore to think that a plan is being proposed for the establishment of the Natural History Museums on this site instead of at South Kensington, and laying out gardens and vacant spaces around the building, which is proposed to be raised upon a terrace nearly as high as that of Somerset House and the Adelphi. No doubt Mr. Waterhouse will be well able to provide proper access to the Strand, and communications with the various levels right and left.

The evidence of Mr. Fowler and Mr. C. H. Gregory (the President of the Institute of Engineers) as to vibration from railway trains has been highly important, considering the proximity of the new line to the

proposed building works, and no better evidence could be obtained. The mere calling for it was a sign that the Committee is alive to the difficulties attending construction under such circumstances. The opinions expressed, only serve to confirm our own views as to the non-injurious character of mere tremor induced by the passing of trains or any other traffic upon the walls of a building, but the enquiry failed to go far enough into the question to satisfy our minds that there was no danger to the mass of the surrounding soil for a much wider area than that to be covered by the buildings referred to.

The Committee could hardly escape enquiry as to the streets in communication with the Embankment at Whitehall, and from Charing Cross along the walls of Northumberland House; and this naturally led to Mr. Pennethorne's evidence, and the production of his plans for Government offices at Whitehall on the site of the projected palace, incorporating only that part of it which was erected by Inigo Jones—the Banqueting-room, now the Royal Chapel. To this we shall refer, perhaps, in detail, when it may be more decorous to do so. At present, we only express our satisfaction that such a suggestion has been definitely made by such an architect, and in such a manner as to combine the oft-cherished idea—now so lately revived—of working out this acknowledged grand design in a worthy manner and on the right spot, if anywhere.

At the time when it was originally proposed to separate the Natural History collection from the British Museum, the evidence of scientific men seemed to show some diversity of opinion as to site; but now we have the same great names reappearing—Owen, Murchison, and Huxley—in favour of the removal to the Embankment, and of establishing there such a collection as will answer both for popular and special scientific instruction.

The slight degree in which Professors Owen and Huxley differ with respect to the size and arrangement of the collections of Natural History and the Library to be attached thereto, in no way affects their united testimony to the advantages of the position for one or both of the objects of a museum; while Sir Roderick Murchison, speaking as a trustee of the British Museum, and in the name of many distinguished members of that body, thinks this site as good as, if not better for popular purposes than, Great Russell Street itself.

That South Kensington, too, will offer no opposition is evident from the assistance Mr. Cole affords by his well-digested information—as might, indeed, be expected from such a public-spirited director of one of our most flourishing Government establishments. At the same time all must see the difficulties to be dealt with in the possession of the site at South Kensington intended for this very Museum—though there need be no fear of loss on this account, even if it should be determined to resell the ground—considering the wonderful improvement of the locality in late years. Having gone thus far, we may assume that, with these disinterested views distinctly kept before it, Lord Elcho's Committee—by a judicious concert with the Metropolitan District Railway—may at last save the Embankment from the perils which threaten it, and make it a glory and honour to our age.

We must not forget, however, that the plans and ideas broached in our pages from time to time, even if unacknowledged, must have shown that the site was capable of artistic treatment in a variety of ways; and it is only natural for us to refer to what has been published in THE ARCHITECT, when we see with pleasure that the same ideas prevail in influential quarters. It is to be hoped that with reference to the Waterloo and Hungerford section of the Embankment, the importance of the existing features of the Bridge, with the Savoy on one side and the terrace of Somerset House on the other, may not be overlooked. These are, so to speak, natural lines in the general aspect of the whole sweep of the Embankment, which it would be fatal to leave out of calculation. What is wanted has been already suggested by Mr. C. F. Hayward,\* viz., a block of buildings occupying the Savoy Hill (and standing on the very walls of the old palace itself), continuing the architecture and the terrace of Somerset House westwards, and returning northwards to the Savoy Chapel, thus overhanging the Gardens at the west end of the proposed new Museum building which have already been projected and christened Savoy Gardens in Mr. C. F. Hayward's plan. The River façade might repeat the features of Somerset House, and also the form of Mr. Pennethorne's new wing opposite Lancaster Place, so that the roadway to Waterloo Bridge would be flanked on the west by a pile of buildings, set back as on the east, and together forming a sort of square court, which, if connected also with the Strand by quadrant arcades or colonnades, would form an unrivalled access to our most splendid bridge, and to the terraces and the Embankment right and left.

This new building—or, let us say, continuation of old Somerset House—might bear the old name of Savoy, and become the Central Telegraph Station in connection with a West-end Chief Post Office, which will certainly be wanted before long. All this appears capable of being done without encroaching upon the two burial grounds, which have been a difficulty all along; but for the full statement as to these, and opinions thereon as expressed by Sir Chas. Trevelyan and others, we must refer to the Society of Arts' Transactions of last week. However, we repeat, some such artistic treatment of this part of the locality is absolutely necessary, and the more carefully the rest of the space is laid out, the more this small remaining portion will call for attention.

With this (and omitting Blackfriars and 'Alastia' for the present as

\* See THE ARCHITECT for March 13, p. 143.

unfinished), we think we may consider the Embankment scheme complete; and with these definite plans before us for the whole line, east, midway, and west, the occupation of the river-frontage from the Temple to Westminster will be satisfactory. The Law Courts under the able hands of Mr. Street, the Museums and the buildings at Whitehall under the care of Mr. Pennethorne and Mr. Waterhouse, are likely to form ornaments to our metropolis, and produce a series of architectural works which, taken in connection with the adjoining structures, will be unsurpassed by the dreams, even in their most enthusiastic moments, of the advocates of the Embankment site.

To the diversity of design we do not object. The separation between each work is complete, and variety will not be otherwise than pleasing in the long line of frontage; and if only the spirit of unity prevail long enough at the Office of Works to harmonise the several conflicting opinions, there is no reason why Mr. Pennethorne's genius should not have full scope in working out the design of Inigo Jones, at the same time that other architects are at work with more modern materials.

Those who have worked out these problems for themselves as a labour of love—receiving no public acknowledgment of their contributions to the solution of them—may console themselves when they see their hearts' desire accomplished, and take pride to themselves for having mentally seen beforehand what it required the bodily eyes of others to comprehend; or at least to feel such satisfaction as those pioneers in science whose names are lost in the splendour of ultimate results, and whose early work is forgotten in its latest development.

### THE ARCHITECTURAL EXHIBITION.

IN commencing our notice of this the 19th Annual Exhibition of Architectural Drawings, we may fairly congratulate the Council on the general average collection of drawings exhibited by them, notwithstanding the greater attractions of the Royal Academy, which it was presumed would this year inaugurate the opening of the new rooms by doing justice to Architecture, and giving it that space and accommodation on its walls to which the increased importance and position of the Art fairly entitle it. This, we regret to say, is not the case; if possible, architects are worse treated than before, and the Academicians seem determined as far as possible to keep architecture from their rooms. The exhibition in Conduit Street is in every way up to the mark. Mr. Petri's drawings alone, which together with the sketches and decorations we reserve for a separate notice, are well worth a visit; and in addition there is a fair collection of meritorious sketches of old buildings, and a good series of architectural designs. So much may be said in general praise; but this must be tempered with a certain amount of blame, inasmuch as we still notice many drawings which should have been excluded, and we should have liked to have seen the photographs all hung together, and a stricter adherence to the rule as to frames, margins, &c. We must again protest against the number of meretriciously-coloured picture drawings, and regret that there are not more honest sketches or drawings by the architects themselves; we know architects do make sketches, and why we should be treated on these walls to a number of drawings in which the useless landscape and surroundings are made to overwhelm the architecture, as in too many cases they do, is best known to the profession itself. We recommend the Hanging Committee to rectify this another year. Of 300 and odd general drawings, certainly a fourth might have been excluded.

Numerically first amongst the general drawings to be noticed is Mr. Seddon's drawing of Almshouses at Fulham (23), which has much careful study in it, and the arrangement of the lower storey and chimneys is well managed. The arrangement of the rear of the plan strikes us as being crowded and close. The oriel window in a gable, with its attenuated support, suggests the idea of an exaggerated lamp; the dormers are too close, and would not look well in perspective, nor do we understand the use of crowding arch above arch to support some three feet of masonry in the gable tops. In Mr. Seddon's drawings (55 and 56) of St. Nicholas Church, Yarmouth, now in course of restoration, there is much fair and honest study of the old work, although we must dispute the taking out the perpendicular windows in the north aisle to put in those of a century earlier. The tracery to the large window in south transept is poor and weak to a degree. We would only suggest to Mr. Seddon that the drawing of the masonry is hardly to his credit, and that, however pretty it may look on paper, the colour of flint work is not rose-grey.

What can we say of Mr. Ralph Nevill's drawing (26) of Mr. G. G. Scott's New Almshouses at Blackfriars? We forbear to criticise the building itself, as we cannot believe that it is fairly represented by the drawing in any way, and we hesitate to say too much about the drawing itself, as it is evidently that of quite a junior in the office; but we cannot too strongly protest against the vulgar and meretricious colouring, in which body colour seems to be the principal medium.

Mr. E. B. Lamb sends one of his usual designs (29) for a new Memorial Church at Smithfield, very like many of his other churches, but better. The thinness of the buttresses, and everlasting frittering away of broad spaces, cannot be too strongly condemned, and what use or object can there be in the spun-out miniature buttress rising up in the centre of the transept gable? We cannot praise the drawing, but the tinting is clever and artistic.

Mr. Hartsborne sends a good careful drawing (27) of a Church at Walsall, much damaged by the vulgar figures and crude colouring of the surroundings; the wooden porch is bad and inappropriate.

Mr. Brangwyn sends a charming little drawing (31) of the new 'Maison Communale' at Cruybeke, in the design of which the author has seized the spirit of the best type of Flemish work, and done full justice to his design. The dormers are picturesque and well proportioned, and the whole composition well and carefully studied. Mr. Brangwyn must forgive us if we

are somewhat hypercritical, and complain of the apparent weakness of the oriel support, and of the side pier of entrance doorway, the former rendered more weak by the coarse detail of the mouldings, and the latter evidently dependent upon some hidden tie to keep it from giving out; nor do we quite like the difference of the slopes of the chimneys and roof. These are matters which doubtless so good an artist as Mr. Brangwyn will have seen and rectified; as a drawing we cannot say too much in its praise—one of the best in the exhibition.

(25.) A pleasant drawing of some Village Schools near Godalming, by Mr. Howell, which would have been all the better without the laboured attempt to be picturesque and quaint in the bell gable and chimney. The design is otherwise good, but Mr. Howell should have given the name of the artist who coloured it.

Messrs. Walford and Evill send a drawing of a House at Pinner (34), the first idea of which is that it was made to show the patent roof tiles; and indeed an etching of this design, if we mistake not, has been put into the trade catalogue of the tile manufacturers. The design has many good qualities and much careful study. The upright brick arches could hardly carry themselves, but the whole is picturesque in its lines, though somewhat coarse in detail.

Mr. Nisbet would have been wise not to have sent his drawing of a Porch (36), and the Hanging-Committee to have rejected it; it is as constructionally bad as his drawing for a Hunting-Lodge (40) is in design: instead of a Hunting-Lodge we have a pretentious cemetery chapel, and lodge combined.

(37 and 41.) Two clever and careful drawings of a House at Harpenden, by Mr. Crawley, which owe a good deal of their effectiveness to the architectural colourist, whose name ought to be given, though it looks very much like Mr. Nattress's bright tinting. What use is there in the elaborate arches to the tops of the gables, or in the wreathed and spiked cannon-balls in the garden front? The design has many of the bad features of the style with some few of the good. The conservatory, were it not for the weakness of the angle pier, would be good, and the stables look picturesque; we might remind the artist that stained glass does not usually show its colour from the outside. We give Mr. F. R. Kempson all praise for his fresh, bright, and careful isometrical View of the City and County Lunatic Asylum at Hereford (42), the drawing charmingly tinted in three tones of brown and grey. The design is unpretentious, but full of bits of thought; the chimneys and the ventilators are brought in well; we could say something against some of the composition of the windows, but we must not be hypercritical in what is generally so good.

(46.) Not one of Mr. Coles' best, and we can say but little of the building, as it has been elsewhere criticised, and the central tower is evidently not drawn from nature.

We are very disappointed with Mr. Charles H. Mileham's New Church, at Bettws-y-coed, North Wales (47 and 48), for we expected better things of him; the church has three or four styles in it; we presume the arrangement of the east end, without any window, is with a view to having painted decorations on the east wall with the light thrown from the north, but all this might have been done without so much muddle of styles. The bell gable is strong and bold, and a great relief after the pimping little absurdities we have been accustomed to see. The drawings are good in feeling, but evidently hurried.

In 50 we have Messrs. Godwin & Crisp's premiated design for the Bristol Assize Court, perhaps, without exception, the best drawing in the exhibition, and one which we recommend all art students to study carefully. The history of this competition is tolerably well known—how Messrs. Godwin and Crisp were awarded all three premiums in the first competition, and were then ousted by the caprice of a committee who, for sundry reasons, wished for a second competition, and how, in this second competition, Mr. Street awarded the second place to the drawing in question. Those who may compare this design with the successful one will not think that Messrs. Godwin & Crisp's design suffers in the comparison—bold, vigorous, and dignified, and essentially carefully studied in all its parts. We might, perhaps, find fault with the apparent weakness of the angle piers of the first floor, and with the somewhat small balcony over the central door; the boldness with which the tower—the top part of which is suggestive of Compiègne—is designed, crossing the roof without any preparation below might, perhaps, be criticised, but we happen to have seen Messrs. Godwin & Crisp's Town Hall at Northampton, where the tower is similarly treated, and where the effect in perspective is exceedingly bold and good. We cannot accord too much praise to Messrs. Godwin & Crisp both for the design and the careful and honestly-tinted drawing which expresses it.

'Glenbegh Towers,' Killarney (52), by the same gentlemen, was also exhibited, if we remember rightly, in last year's Academy; a simple and effective design, in every way worthy of the authors' reputation.

In 51 we have a joint design by four architects, Messrs. Foster, Wood, Ponton, and Gough, for the new Institution and Library at Bristol, which we are bound to say is one of the worst drawings in the exhibition: bad in style, bad in drawing, bad in colouring—suggesting bad dreams of Mr. Godwin's Town Hall at Northampton, the Ducal Palace at Venice, and the animals at Leon Cathedral; the weakness of the angle piers, the vulgarity of the sculpture, and the poorness of the detail, lead us to regret that four tolerably-known architects should have acted so unwisely as to exhibit such a design. The artist must have suffered in the design, for when he leaves it for the old work in the right-hand corner, he is himself again. Mr. Ladds sends two unpretending and prettily put together designs (53 and 54); we especially like the 'Roadside Inn' (54), but should have liked to have seen the signboard, which is always a picturesque feature. This drawing is good and crisp, while the other is somewhat coarse. Mr. Watson, in his 'Design for a Small Pox Hospital at Homerton' (57), has not shown improvement, and we cannot congratulate him either on the general design or grouping of his buildings, but must commend the drawing as a cleverly tinted sketch, evidently done by himself. His 'Design for the Fever Hospital' (177), is better, but not what we should have expected from Mr. Watson. Mr. W. Smith sends one of the most careful pen-and-ink drawings in the room (58), wanting perhaps in freedom of touch, but showing much care.



In 59 we have the usual annual lithograph by Mr. J. Drayton Wyatt of a very ordinary church by Mr. Scott, R.A.

(61.) Shows a very clever drawing of a good design for the new church of St. Barnabas at Oxford, by Mr. A. W. Blomfield; the plan is in the form of a Basilica with short circular apse, and narrow side aisles, and is in every way well and carefully considered; the decoration is simple and good; the ritual arrangement of bringing the choir into the body of the church is wise, uniting the clergy and the laity as they should be. The general design of the tall clerestory windows is good, but paintings would be wanted in the intermediate blank spaces. We cannot like the roof or its decoration, and we like, least of all, the Baldachino over the altar. But as a clever sketch by the artist himself, too much praise cannot be given to the drawing.

(To be continued in our next.)

### THE FIRST CLUBHOUSE AT BIRMINGHAM.

ON the 3rd inst. there was opened at Birmingham the first building erected in that town solely for the purposes of a clubhouse. The edifice is at the top of Newhall Street, in the centre of and in the highest part of the town; it is within a few yards of the Bank of England and all the other banking-houses. The style of architecture is Italian, with much elaborate detail and carving in every part that would properly admit of it. The fronts are to two streets, are two storeys in height, and of stone from the Pillough quarries, Derbyshire, with a massive balustrade protecting the basement area. The ground-floor is rusticated, and has square-headed windows with boldly-carved keystones, and recessed pilasters in the reveals. The entrance, which is in Colemore Row, opposite to Bennett's Hill, has four massive columns, with rich Corinthian capitals. The first-floor windows have balconies in front; the windows are circular-headed, with pilasters, consoles, cornices, and pediments, with carved keystones to the arches, spandrels, and other parts. These are of varied design, the triple windows being still further enriched to make them as salient points in the elevation. Above them is an elaborately carved frieze of foliage, with shields, charged with armorial bearings, including that of Mr. Colemore, of Cheltenham, who is the ground landlord. The cornices surmounts the frieze, and the whole structure is finished with a balustrade and pedestals bearing vases. On the ground-floor there is a spacious entrance-hall, leading to a corridor, out of which open a dining-room, 41 feet by 24 feet; the morning-room, 60 feet by 94 feet; luncheon-room, &c. The two first-named rooms have richly-pannelled ceilings, and details in character with the principal part of the work. The great staircase is of noble dimensions. It is divided into three compartments by stone columns, and lighted by triplet windows of large size. The first floor, which has a corridor extending the whole length of the building, leads to a drawing-room, library, billiard-room, &c. All the usual and necessary requisites are provided. The cost of it is about 16,000*l.* The architect is Mr. Yeoville Thomason, of Birmingham, whose designs were selected in competition.

### ARCHITECTS AND ACOUSTICS.

WE see with much regret that among the eminent men who have been requested to act as a committee to investigate the acoustic properties of the Lecture Theatre at South Kensington, no architect's name is included. We speak with unfeigned respect of the gentlemen in question. No name, for instance, can be more properly associated with such an inquiry than that of Sir Charles Wheatstone. Nothing can be more proper than that Lieut.-Col. Scott should take his seat at the committee table. But we apprehend that no one would more freely admit, than would that distinguished officer himself, that the large demands made on the time of a military engineer, in order to acquire the mastery of his own profession, allow little opportunity for the formation of a familiar acquaintance with those numerous details which necessarily force themselves on the minds of those professional architects who, devoting their attention exclusively to civil architecture, are in the habit of dealing with public buildings. We object to no one—we undervalue the ability of no one. But the fact remains that an interesting and important inquiry into a subject entirely within the province of the architect, and fully treated of by architects, has been referred by the council to a commission on which no professional architect is asked to sit. It is disrespectful to the profession—of course unintentionally so—but no less is it a distinct slight. It is unjust to the object of the Commission, as much of the information which would thus have been naturally within the cognisance of very many men whose names will occur to the minds of our readers, will, beyond question, be less familiar to an entirely non-professional committee.

We very sincerely trust that it is not too late to amend this blunder. It is of much more importance to the Council of Education than it is to the Profession of Architects that this should be done. Acoustics will not cease to be a prime architectural question, however non-professional men may dabble, or men of physical science may experiment. But desiring, as we all should do, to see the hands of the friends of education strengthened in this country, we view with great regret any such serious miscalculation in any branch or department of the subject as must tend to shake the confidence of all thoroughly crudite men. We hail assistance in our studies from all sources. We welcome the physicist, the musician, the man of order, the engineer, the practical artisan. But we trust to be spared the discomfort of seeing architectural questions treated of, settled, or even bungled, because they are dealt with behind the back of that profession to which they are naturally familiar and germane.

The Memorial to the Rev. J. Rashdall, late vicar of Dawlish, will take the form of a tomb of white marble, with granite base and pedestals, and will be surrounded with iron railings. The work has been entrusted to Mr. J. Bloekler, statuary, of Dawlish.

### INTERNATIONAL ART EXHIBITION AT MUNICH.

A General Exhibition of Works of Art of all Nations is to be held at Munich this year, opening in July, and closing at the end of October, and it is expected to be the most important art exhibition of the year. The direction of the exhibition is in the hands of the Royal Academy of the Beaux-Arts, and the Society of the Artists of Munich, under the immediate patronage of the King. The Commission or Managing Committee consists entirely of artists, headed by the Professors Ed. Schleich and A. de Ramberg.

The exhibition is to be held in a large building called the Palais de Cristal, and is to include works in painting, sculpture, architecture, engraving, and lithography, but not photographs or any copies or other productions by mechanical means. No works are, however, to be received (according to the programme), except from artists who shall be specially invited to exhibit, and yet the Commission assumes to itself the right of rejecting any work, and of making all arrangements, and announces that it will not listen to any complaint or protest on the subject.

The Commission will defray the expense of transport both ways by ordinary trains and routes, and the other conditions of the programme are like those of exhibitions of the same kind. Medals and other prizes will be awarded, and there will be a lottery organised for the purchase and distribution of works of art which are for sale.

Works for exhibition are to be received until June 15; but an exception is made in favour of those which may appear in the Paris Salon, the date in their case being extended to the middle of July.

M. Schwab, Bavarian Consul of Paris, is appointed Special Commissioner for the Foreign Section, and all applications for information from artists of other countries must be made to that gentleman.

### THE BEAUVAIS EXHIBITION.

THE exhibition building, Beauvais, in the Department of Oise, to the north of Paris, will be opened, June 1, for the display of arts and manufacture, and especially for agricultural, horticultural, and archaeological exhibits.

M. C. Levéque—who designed the model of the cathedral which, filled with ecclesiastical furnishings, ornamented the garden of the Universal Exhibition of 1867—is the promoter of this scheme; the architect is M. Delabarre, of Paris. The Beauvais Exhibition promises to be a successful undertaking, and will be of popular interest, the wing devoted to works of art being already filled by 'loans' from all parts of France.

### ARCHITECTURAL EXHIBITION SOCIETY'S SOIRÉE.

THE opening conversation took place on Tuesday evening last, at the Society's Rooms, 9, Conduit Street, and was numerous attended. It was undoubtedly one of the most successful meetings that the Society has had for some time past; and we congratulate the members also upon having dismissed from their programme the usual hour's speechifying. The selection of music was well given by the band under the direction of Mr. W. Hardy. The drawings seem to us superior to those of some previous years, and the large collection of sketches by the late Rev. J. L. Petit cannot fail to be interesting to all architects and amateurs, and will, we should imagine, aid much in bringing visitors to the Exhibition, now open to the public. Amongst those present we noticed Lady Belcher; Lord Henniker; the President of the Society, Jas. Ferguson, Esq.; Professor Delamotte, Professor Kerr; the Rev. Mr. Mitchell, Major Gen. Balfour, Mr. Hyde Clarke, Messrs. E. B. Lamb, J. P. Seddon, T. Roger Smith, W. Burges, C. L. Eastlake, the City Architect, C. Mayhew, Robert W. Edis, Wyatt Papworth, Paley, and many others of the profession. We give, elsewhere, a notice of some of the principal drawings.

### SALISBURY CATHEDRAL RESTORATION.

THE REPORT from the Dean and Chapter (of which the following is an abstract) was laid before the Cathedral Restoration Committee at their last meeting:—

The Restoration of the *Exterior* of the Cathedral, commenced by the Dean and Chapter in 1863, and continued since 1864 by the aid of a public subscription, is at length on the eve of completion.

1. The first operation was to consolidate the Foundations with fresh concrete. The stonework was then repaired or renewed; a channel, coated with Portland cement, was carried round the building; and the whole was effectively drained. At the same time the earth, which to the height of between two and three feet had been heaped up against the walls, was cleared away. The plinth and base mouldings of the edifice being thus uncovered, its architectural effect has been strikingly improved. The surface of the Churchyard has since been lowered to the same level by the Dean and Chapter, from funds at their own disposal.

2. On a careful survey of the exterior, it was found that most of the flying buttresses were in a dangerous state. Some of them have been entirely rebuilt, and the rest have been substantially repaired. The finials, pinnacles, parapet copings, and mullions, throughout the building, many of them in a state of dilapidation and decay, have been made good. The decayed shafts, capitals, and bases of the numerous windows have been thoroughly restored. These were originally of Purbeck marble, a material peculiarly liable to decay. It was therefore resolved, on the recommendation of Mr. Scott, to employ in repairing them a variety of the Devonshire marble, as being more durable and less costly than the Purbeck. The juxtaposition of these two kinds of marble, differing as they do in external appearance, offended the eye. In order to soften the contrast, a process of

rubbing and oiling the surfaces of both is now being employed, under the sanction of Mr. Scott, with a view of assimilating, as nearly as possible, the colour of the new to that of the old material. The result of the experiment has, thus far, been highly satisfactory.

3. We next come to what was justly considered the most important part of this great work—the strengthening of the Tower, and the ensuring thereby the safety of the noble fabric itself. Here, it must be remembered, that the building originally terminated in an open Lantern, projecting 8 ft. above the ridges of the roof; that its walls are hollow, that the outer wall is only 2 ft. thick, the inner consisting merely of a light arcade; that the intervening space is an open triforium passage; and that the four corner piers are perforated by staircases. On a basis thus slight and unsubstantial was erected, about seventy years after the completion of the main edifice, the vast superstructure of the Tower and Spire. The effect of the pressure of so huge a mass soon became apparent, by the crushing of the Lantern walls, and the settlement of the four great piers at the intersection of the Nave and Transepts. As regards the latter, there is no reason to believe that there has been any serious movement in the piers, since they were connected by the two great arches in the Nave, at the close of the fifteenth century. And that they have remained stationary since the plumbing by Mr. Nash, the then Clerk of the Works, in 1691, has been ascertained after a searching investigation by Mr. Scott. The real, the imminent danger, lay in the walls of the Lantern, which, when examined by Mr. Scott, were seen to be in so dilapidated and shattered a condition, that the stability of the Tower for so many centuries may justly be accounted a standing wonder.

4. The grand object, then, was to strengthen and consolidate the walls of the Lantern, without overloading the four above-mentioned piers in the Nave. This object has been fully accomplished by means of an ingenious and elaborate system of iron ties, devised by Mr. Shields, the eminent civil engineer, whom Mr. Scott had called in to assist him in this delicate operation. The basis of the Tower having been thus made as secure as mechanical science applied with the highest practical skill could render it, attention was next directed to the interior. Many parts of this had been, for a long series of years, in a ruinous state. In the Lantern story eight windows, the four staircases at the angles, and the ashlar work, have been restored. So likewise have been two windows on each of the east, west, and north sides of the upper stories. And on the south side of the same stories four windows, which had been built up, have been opened out and completely refitted. At the apices of the windows of the uppermost story there have been added eight piers and relieving arches, on which the weight of the Spire is now in great measure supported. Portions of the interior of the Spire itself have been pointed, and the Cap-Stone, which was much dilapidated by the combined effects of time and weather, has been thoroughly repaired. The Vane has been newly gilded, and its movement facilitated by a simple self-acting contrivance for oiling it.

5. Attention was next directed to the West Front, every part of which stood lamentably in need of renovation or repair. The stone and marble work throughout have been restored, and the enriched mouldings of the Porches, on which a great deal of time and labour has been bestowed, are now far advanced, and will be finished, it is hoped, a month or two hence. These restorations have been executed with the most scrupulous care, every portion of uninjured surface being preserved, and that which was destroyed being reproduced in strict conformity with the remaining traces of the ancient work.

6. The Restoration of the West Front could not be regarded as complete, without an attempt being made to replace a portion, at least, of the Statues that anciently adorned it. The late Professor Cockerell has stated that there were originally on the exterior of the Cathedral 160 Figures, of which 123 stood on the West Front. In a lecture delivered at a meeting of the Archeological Institute in this City, in 1849, that eminent authority expressed his high appreciation of the artistic excellence of the few mutilated Figures that still remained. From a minute examination of them it was inferred that the whole series on the West Front formed what is termed a Te Deum or Theological Scheme.

In accordance with this was the plan of Restoration proposed by Mr. Scott, and by his advice intrusted for execution to a sculptor of rising reputation, Mr. Redfern. The work, begun about two years ago, and still in progress, may be thus briefly described:—In the panel of the great gable of the West Front is a colossal figure of our Saviour, seated in Majesty. Ranged in successive tiers below this grand central Figure, there will be in the first tier, Figures of Angels; in the second, of Prophets and Patriarchs; in the third, of Apostles and Evangelists; in the fourth and fifth, of Saints, Martyrs, and Founders. It will be observed that in this plan Apostles and Evangelists are placed below Prophets and Patriarchs. The remains of two figures, those of St. Peter and St. Paul, proved that this must have been the order in which they originally stood, as in fact both the number and distribution of the niches admitted of no other arrangement.

7. Of the entire number of Statues required to fill the niches on the west front, about fifty will soon have been fixed in their places, exclusive of eight ancient mutilated figures which have been restored by Mr. Redfern. Amongst these are two on the buttresses, right and left of the great porch, the gift of Mr. T. H. A. Poynder, and eleven filling the row of niches immediately over the great porch, and representing the patron saints of Christendom, the munificent donation of the Rev. Charles Brooke Bicknell, Rector of Stourton, in this diocese. For the further prosecution of this portion of the work, or the entire restoration of the Interior, there are no available funds.

South Midland Institute of Mining, Civil, and Mechanical Engineers.—A new Institute has been started in Wolverhampton upon the model of the Northern Institute of Mining Engineers, by about five-and-twenty of the mining and mechanical engineers of the town and neighbourhood. The president is Mr. Henry Beckett, F.G.S. Papers are to be read and discussed from time to time; and the president is to deliver the inaugural address at the School of Art on June 7.

## ENGINEERS AT COURT.

WE learn that the Emperor of the French, to whom the Institution of Civil Engineers have granted a diploma as honorary member, has received with his usual courtesy Mr. Charles Gregory, president; Mr. Bidder and Mr. McClean, past presidents; Mr. Cubitt, vice-president; Mr. Hemans, member of council; and Mr. Manby, honorary secretary, who came on behalf of the Institution to present the diploma. The Emperor has desired that his thanks might be conveyed to the members, with the assurance that he felt himself honoured by being enrolled among their number. He conversed with the deputation at their official reception, and they have had the honour of dining with him.

## THE NEW RAFFAELLE AT SOUTH KENSINGTON.

IN fulfilment of our promise in reference to the supposed original paintings by Raffaele now in the South Kensington Museum, we will take up first that bequeathed to the Museum by the late Rev. C. H. Townshend. For this painting Dr. Waagen, taking the safe ground of objection, yet honestly conscious of its merit, invents the somewhat forced theory of an unknown but excellent Netherlandish copyist, his Northern origin being indicated to the Doctor by the shape of the buildings in the background. These same buildings look to our own judgment as unlike the products of a Northern brain as can well be found; while the fact that the painting was bought from the Duke of Massa's collection by Lord Coleraine, from whom it passed into Mr. Townshend's family, leaves the *onus probandi* on those who insist on giving the picture a Transalpine origin. To the Verity picture a curious and very elaborate chain of evidence is attached, to which we invite our readers' attention, it having been placed at our disposition by the owner of the painting.

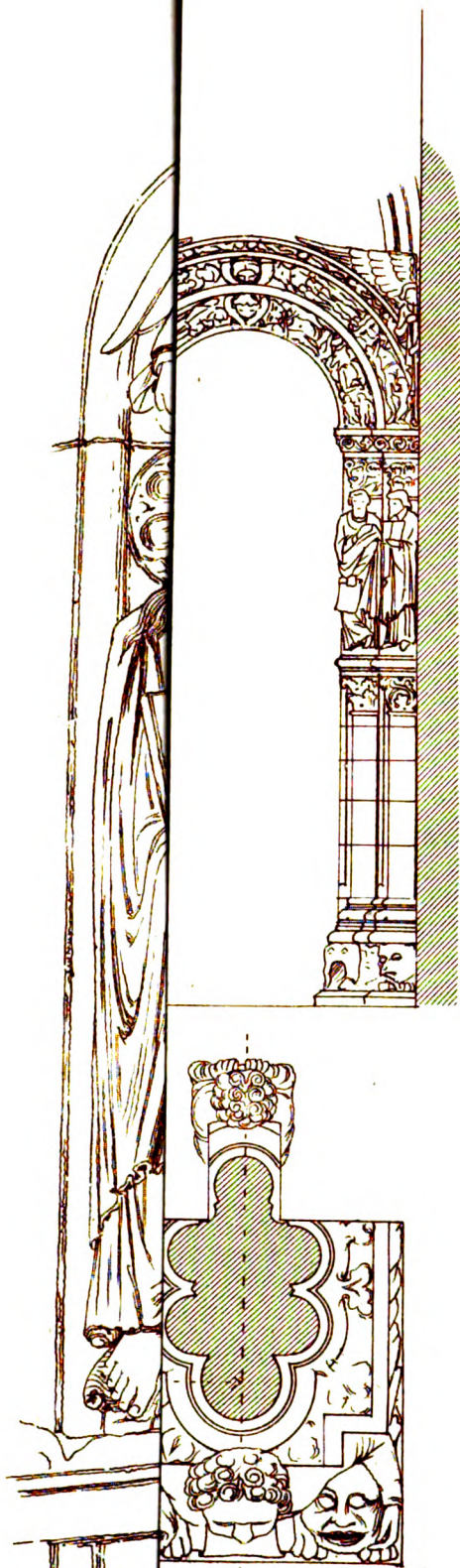
In 1505 Raphael painted, for Lorenzo Nasi, the 'Madonna del Cardellino,' now in the Tribune at Florence. The year following, in 1506, he began the Vallombrosa replica for that monastery, and finished it at the end of 1508. It was ordered by Don Biagio Milanese, General of the Order of Benedictines of Vallombrosa, who wrote a history of the monastery from 1400 to 1513, and whose portrait (now supposed to be by Raphael, and not by Perugino) exists in the Accademia delle Belle Arti at Florence. Some most interesting details are learnt from entries in the original account books of Vallombrosa which are deposited in the State archives at the Uffizi. The first of these entries about the picture is the payment to Raphael of 5 gold florins (*fiorini larghi in oro*) dated Jan. 7, 1506, and similar entries testify to other payments from time to time (as well as to a cask of wine) extending to Nov. 25, 1508, about the time Raphael went to Rome. According to these entries the following is a summary of the sums of money received by him for the Vallombrosa picture, amounting altogether to 60 gold florins, viz.:

		Gold florins.	
1506	Jan. 7	5	} 10 in 1506.
—	Feb. 14	5	
1507	Feb. 12	4	} 20 in 1507.
—	Oct. 24	6	
—	Nov. 27	10	
1508	Feb. 21	5	} 30 in 1508.
—	June 24	1	
—	Aug. 5	10	
—	Oct. 7	5	
—	Nov. 25	4	

It will be observed that although Raphael began in 1506, he received by far the largest number of payments in 1508. From this time the picture remained at Vallombrosa until the general suppression of the monastery in 1808—a period of three hundred years; and in looking through the Memorandum Book of the monastery ('Libro di Ricordanza') it will be found mentioned in 1788 as being the chief picture in their collection, which then included masterpieces of Perugino, Guido, Andrea del Sarto, &c.; and again in 1790, in an inventory of objects of art, made by order of the Grand Duke Leopold I. In the Siena edition of Vasari, published in 1792 by Padre della Valle, the picture is thus noticed in a footnote in the 'Life of Raphael,' page 246, after describing the Madonna del Cardellino of the Tribune, painted in 1505, for Lorenzo Nasi:—'Un altro similissimo di grandezza, d'antiquità e di perfezione, tanto da essere veduto da qualunque si sia intendente una preziosa replica dal istesso Raffaello, esiste nella Sagrestia del Monastero di Vallombrosa, ed è conservatissimo a riserva d'una fissura tra le due tavole che lo compongono scollatesi per l'antichità.'

In 1508 the Raphael is mentioned in the 'Libro di Ricordanza,' which says that the Abbot Don Felice Predallini removed it from the library to his own apartments 'per maggior comodo.' On the suppression of the monastery at this time it was acquired by M. de la Fruet, employé of King Joseph of Naples, from whose widow, in 1835, it passed with other pictures of note into the possession of the present owner. The 'fissura' down the middle between the panels, as seen and noted by Padre della Valle in this edition of Vasari, was skilfully repaired when it was transferred to canvas by Haquin of Paris, but it can be still plainly seen. There exists a copy of it in the Magazzino of the Palazzo Vecchio at Florence, taken from the monastery, and at that time supposed to be the original; but on closer examination afterwards, at the Accademia delle Belle Arti, in 1812, it was found to be only a copy of the first, done by one of the monks. In this copy, the crack between the panels spoken of by Padre della Valle traverses the head, the face, the neck, and body of the Virgin, in the same way as in the original, and the copy bears on its back the seal and number (No. 2,599) which was put on it when taken from Vallombrosa, and shows from certain differences that it has been faithfully copied from their own Raphael (la nostra tavola di Vallombrosa), and not from that of the Tribune. These differences between the Raphael of 1505 in the Tribune, and the Vallombrosa Raphael of 1506-8, are shown in the latter by there being a more developed treatment throughout, as might certainly be expected from the





PLAN OF DOORWAY  
OF INCH SCALE.

FIGURE  
MOS



FIGURE AT B  
S. PETER.

UNIV. OF  
CALIFORNIA

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more mature age and experience of the painter. This is seen more particularly in the hand of the Virgin, which is much younger and of a different type; in the hand and figure of the Infant, and in more effective chiar'-oscuro. Amongst many smaller details, part of the gauze round the middle of the Child is dropped, and the landscape varied.

### ILLUSTRATION.

WEST DOORWAY, CATHEDRAL OF SANTIAGO DE COMPOSTELLA.

THE illustration which we give of this fine work has been drawn from the casts in the South Kensington Museum. Want of space compels us to postpone a careful account of the iconography of the porch, which has been prepared for us by the artist (Mr. Lonsdale), who has drawn and lithographed the illustration. This account will accompany our next illustration of this subject.

### THE BUILDING TRADES' DISPUTE.

THERE seems little chance of arbitration being resorted to at Liverpool. The masons are willing to discuss the position of affairs with the masters, but object to leaving the issue in the hands of an umpire.

Referring to the position of affairs at Leeds, the *Leeds Mercury* says:—'The masons, who number some 300 or 400 men, and who have a strong union to support any action they may take, object almost entirely to the proposals that have been made to them. They say that their present position as to wages is a tolerably fair one to both parties, and while a few of them are desirous that courts of arbitration should have a fair trial, the vast majority are opposed to such means of settling disputes. They point to the joiners, and allege that several of the decisions made in their favour by Mr. Rupert Kettle, when he arbitrated in Leeds some months ago, have never been carried out by the masters, and they also feel, rightly or wrongly, that if a board of arbitration were agreed upon, the masters would be disinclined to accept any umpire whom they might select. The plasterers occupy a position quite as serious as the masons. They are asked to accept payment by the hour instead of weekly wages, and to submit to arbitration; and although it was understood about a fortnight ago that some agreement was come to, the bulk of the men are still dissatisfied with the proposals made to them. If they are to be paid by the hour, they ask that they may be put on the nine-hour system winter and summer, and that they may have  $\frac{1}{2}$ d. more per hour than the masters offer, so as to make their weekly earnings equal under a reduced hour system to what they receive now. Their labourers think that they also are entitled to  $\frac{1}{2}$ d. more than is offered, and, of course, the labourers' hours of labour will be regulated according to any agreement made by the plasterers themselves. With regard to the bricklayers, their position will remain as at present until August 1, a decision in connection with their trade, which was given in arbitration, remaining in force until that time.'

The masons of York as a body are stated to be satisfied with the proposition of the employers to pay them  $6\frac{1}{2}$ d. per hour in summer, and 7d. and 7 $\frac{1}{2}$ d. per hour in winter, which would raise the wages about 4d. per week in summer, and 10d. per week in winter, amounting in the former period to 1l. 10s. 4d., and in the latter to 1l. 7s. 10d. (the hours being much shorter in winter than in summer). The bricklayers, or at least those who were dissatisfied with the proposition to pay them  $6\frac{1}{2}$ d. per hour in summer, and 6 $\frac{1}{2}$ d. per hour in winter, have not so readily made up their minds. They have held two meetings with closed doors, but it is believed that they have arrived at no definite result.

About 250 masons and about 60 labourers connected with the principal building firms in Bradford left work on Saturday not to return again unless some arrangement can be effected in the terms on which disagreement has arisen. The joiners and carpenters have consented to an arrangement with their masters to settle all disputes by arbitration or conciliation. A meeting on this principle was held on Friday week to consider an application from the operative joiners and carpenters for an advance of wages. The reasonableness of the application was conceded, but the present time was regarded as unfavourable to the end desired. The employers, however, consented to make an advance in March next, and the arrangement was accepted by the men.

The iron trade disputes in the North are settled for the present; both sides having accepted the terms of Mr. Kettle, the arbitrator, namely, 5 per cent. rise of wages to the men, with no future changes for eight months.

### ROTHERHAM HOSPITAL AND DISPENSARY COMPETITION.

WE have already mentioned the exhibition of the designs submitted in competition for this building, which is now open to the public. During the week or ten days previous to its opening the committee and their friends were admitted to a private inspection.

Instead of only about eighty that had arrived on the evening of the 15th ult., the number has increased to ninety-two or ninety-three separate designs, not including the alternative plans that accompany many; the individual drawings numbering little under 650 sheets or stretchers. These are, as we have already stated, most inconveniently hung in two wretchedly narrow lobbies, and seven very small rooms, the result being that only five of each architect's drawings—many send ten or twelve sheets—are exhibited in a vertical compartment, and the remaining plans are put out of sight behind the lowest drawing, and useless for reference or explanation of those that are hung. Gaudily coloured views, with backgrounds totally unlike the neighbourhood, occupy conspicuous positions, whilst valuable geometrical drawings are not exhibited. As only about one-third of the drawings are accompanied by perspective views, we ask the committee,

would it not be more fair to the competitors generally to place these out of sight, instead of the line drawings and explanatory plans?

The awkward arrangement of plan, and the scenery represented in the perspective views, lead us to the painful conclusion that few of the competitors have visited the site before preparing their plans. Many, we fear, will have cause to regret this false economy, for the ground is so hilly and peculiar in its approach and boundaries, that nothing short of direct inspiration would enable an architect to conceive its real character. Many really good plans are marred by the want of this very obvious precaution.

The requirements and practical working of an hospital appear to be subjects about which most of the competitors are profoundly ignorant. We have seen the printed instructions, which are very minute, practical, and well considered, and think that they alone should have opened the eyes of many as to what was expected from them. In spite, however, of these rules, many have the wards, convalescent or day rooms, &c., not at all or insufficiently lighted from the south, which all doctors agree in considering to be the most healthy aspect; for the same reason the exercise ground should lie to the south of the building, and in order to be of moderate size the wards should not be placed too near to that boundary of the site. It is required that the wards be at least 60 feet apart, and if separated from each other should of course be nearly as distant from the front or administrative block; but many have lessened this isolation by placing large rooms between the wards or bringing the front block within a few feet of the end of a ward. Ventilation is as necessary for the officers and servants as for the health of the patients. A bath-room for an hospital should be large, and the baths not in the corner of a room, as many suggest, but approachable from three sides, so that the nurses may conveniently place a crippled patient in them.

The mortuary should be so placed in the grounds that it shall be out of sight of the patients and not far from the road, although screened from it.

The attendance of out-door patients at a dispensary should be witnessed, in order to understand the requirements and amount of accommodation necessary. Many have provided very small rooms, others places that resemble private chapels. Some architects have suggested that externs should wander up a flight of stairs to the first floor when they require to see the physician, whilst others would drag them along a corridor and across a principal hall attached to a department with which they should have no communication.

The rules state that no expense will be incurred for any kind of ornamental work, except what is necessary to make the building look respectable. Now, many have used so much decoration that their estimates are thousands of pounds in excess of the stipulated cost. Generally speaking, we found that the more elaborate the design and highly coloured the view the greater the cost, and, not unfrequently, the oftener were the rules broken. Considering the number of the designs submitted in this competition and, in order to protect the committee from being *unduly* influenced by richly-coloured pictures, we would strongly advise them to appeal to some clever and independent architect to assist them in their selection; otherwise the authors of the rejected plans will not feel satisfied as to the justice of an award made by a committee of unprofessional men.

We understand that the medical committee were to give in their report on the sanitary arrangements of the different plans to the general committee on the 19th ult., after which the other members would commence their examination, with, we trust, professional guidance.

This competition is remarkable, considering the size of the proposed building, as having met more responses from the profession than any previous one of similar character or estimate.

Either business must be in a very bad state indeed, or pupils and draughtsmen are becoming very ambitious, to have allowed such a small work to have kicked up such an architectural dust. The practice is excellent for the young men, but tends rather to confuse a committee, who can protect themselves in such a case only by appealing to an expert.

### PARLIAMENTARY PROCEEDINGS.

#### Ecclesiastical Dilapidations Bill.

IN the Lords on 29th ult., the Archbishop of York moved the second reading of this Bill. The subject, he said, had often engaged the attention of their lordships, and the present state of the law of dilapidations was very unsatisfactory. Cases often occurred where an incumbent was called upon to repair the house, upon entering on a benefice, that he might find almost a complete ruin; and yet he would be bound, if he obtained another living, at whatever period subsequently, to sustain the cost of the repairs, even when the work of ruin had been going on for years. The next defect of the law was, that there was not sufficient inducement to the clergy to keep their houses in good repair. The Bill, though by no means a complete measure, proposed to deal with these two points, and to provide for the appointment of official surveyors in each archdeaconry, in order to secure the uniform administration of the law. They would be appointed by the archdeacon and the rural deans. The Bill also provided that during a vacancy in a benefice, a survey should take place by order of the archdeacon, and upon the surveyor's report the incoming incumbent would be required within a certain time to execute the work; but in order to lighten the burden upon the successors of insolvent or imprudent incumbents it was provided that the governors of Queen Anne's Bounty should be empowered to advance money on mortgage, in the usual way, to the new incumbent to assist him in executing the repairs. There was also a provision for the inspection, by the surveyor, of benefices belonging to livings under sequestration; but if an incumbent chose to have the survey during his incumbency, and put his glebe-house or other building in perfect repair, he should be insured against any further demands for dilapidations for the next five years. The bill did not at present contain clauses affecting episcopal houses, or the residences of deans and chapters, because it was based on the recommendation of the committees of the Lower Houses of the Convocation of Canterbury and York, who had shrunk from dealing with that part of the question, but he hoped the clauses dealing with them would be

inserted in committee. Another omission was that the rights of patrons seemed to be insufficiently protected, inasmuch as it did not provide that the patron's consent to all loans should be obtained, nor was there any provision to enable patrons, in their own interest, to have buildings inspected from time to time. Reserving further comment on the details until they went into committee, he hoped the House would consent to read the bill the second time.

Lord PORTMAN suggested that the Bill should be withdrawn, and that the most reverend prelate should substitute for it the measure recommended by the select committee which met upon the subject in 1862, under the presidency of Lord St. Leonards. By this course a great saving of time would be effected, and much unnecessary discussion avoided.

The Bill was at length withdrawn, and the Bill which had passed through Committee was introduced and read a first time.

#### Public Institutions.

In the Lords, April 29, Lord ROMILLY laid on the table a Bill for facilitating the incorporation of educational, scientific, and charitable institutions, and reducing the expense of electing new trustees.—Read a first time.

#### Fine Arts Copyright Consolidation and Amendment (No. 2) Bill

In moving the second reading of this Bill in the Lords on 30th ult., Lord WESTBURY said: We only give protection of copyright to works of fine arts in some cases for the author's life and seven years beyond, while in foreign countries the protection is given for the author's life and for a much longer period. Not only do we give a much shorter term of protection to foreign artists than our artists receive in other countries, but in other respects the state of our law is so imperfect as to make the reciprocity between this and other countries very imperfect. There are at present eight or nine statutes on the subject of copyright, the provisions of which are in many cases inconsistent, while their construction is throughout a matter of extreme difficulty. The first object of this Bill is to consolidate these statutes. It thus gives to the author of every original work of fine art first sold after the commencement of the Act a period of copyright for the term of the natural life of the author and for a term of thirty years after his death. He had fixed upon the term of thirty years because it is about equivalent to the average term of protection given by the laws of foreign countries. The Bill entitles the author to the right of reproducing his own work, the right to engrave, and the right to photograph. When the work is executed on commission, it is proposed that the entire copyright should vest in the person who gave the commission. When the artist executes the work for himself, then, if it be sold without reservation, the entire copyright will vest in the purchaser. But the artist may by an agreement, to be executed in writing, reserve to himself any part of the copyright—that is to say, he may reserve to himself the right to make a replica, the right to engrave, or to authorise others to engrave, and similar rights to which it was not necessary to allude. The Bill then proposes to allow the artist to retain his right of property in the sketches or studies he may make for his pictures, and it protects them against an execution for debt to the extent of 15*l*. It then points out how copyright may be transferred, and certain forms of transfer are given in schedules. All assignments, either of the entire copyright or of any part of it, are to be in writing. The next clauses relate to the covenants or agreements that shall be held implied on an assignment of copyright. Other provisions relate to the mode of registration, the forgery of monograms, and the sale of pictures with fraudulent misrepresentations. Penalties are imposed upon other frauds, such as working off a greater number of prints from an engraving than are stipulated for; or, upon working a plate until it is nearly worn, and then recutting it, and selling engravings taken from it as if they were impressions of a new plate. In the next place the Bill gives to copyright engravings the same protection against the importation of piratical copies from abroad which is now given to works of literature. It will give a person whose copyright has been infringed the right to obtain a search-warrant, in order to ascertain what number of piratical copies have been made by the person who is engaged in injuring him. The noble lord concluded by saying that he should be happy for the Bill to be referred to a select committee.

The Earl of KIMBERLEY thought that the best course would be to read the Bill a second time, and then refer it to a select committee. Although he admitted the expediency of protecting works of literature and art by copyright, he could not regard copyright as an inherent right of property. It seemed to him the creation of legislation. He trusted, therefore, that they would not take an extreme view of the subject, but that while they would give adequate copyright to works of really high art, they would not extend the same protection to works of an inferior class.

The Bill was then read a second time.

#### Hamilton Gardens.

In the Commons, Mr. LAYARD, in reply to Mr. C. DENISON, said the rights of the Crown over that portion of Hyde Park known as Hamilton Gardens are precisely the same as over the Park itself. A small portion will be taken in order to carry out the scheme for widening Park Lane. He did not think it would be desirable to make any change by throwing open the remaining portion.

#### Site for the Public Offices.

Mr. LAYARD, in reply to Mr. W. H. SMITH, said it was intended to proceed this session with the bill for the acquisition of an additional site for the public offices in Great George Street, Delahay and adjacent streets. But certain properties on the plan in the two streets named would be excluded from the bill.

#### The Ordnance Survey.

Mr. CARDWELL, in reply to Mr. A. JOHNSTON in reference to a paragraph in the report of the progress of the Ordnance Survey, said it had been greatly retarded by obstacles thrown in the way by owners of deer forests. He was in communication with Sir Henry James, and he trusted that arrangements would be made with equal regard to the progress of the survey and the interests of proprietors.

#### The New Law Courts.

On May 4, Mr. PEMBERTON asked the First Commissioner of Works whether the particular attention of the Lord Chancellor had been called to the new site for the Law Courts selected by the Government, and whether his lordship approved the selection.

Mr. LAYARD observed that the Bill relating to this matter was a Government Bill, and the hon. member would perhaps excuse him from answering an inquiry as to the opinion of an individual member of the Government in such a case.

Lord H. LENNOX asked whether the right hon. gentleman would insure that members were supplied with plans before the Bill came on for discussion, and whether he would place a model of the new building in the library for the information of members.

Mr. LAYARD said he hoped to have lithographed plans in the hands of members perhaps before Whitsuntide; they were now being prepared by Mr. Street. As a model entailed an elevation, it would be a longer affair; but nothing would be settled until the House and the public had full opportunity of criticising the whole plan.

#### LEGAL.

##### 'Surveyors' Fees for Plans.

DOWLING v. HILL.

This case, tried at the Lord Mayor's Court a few days since, raised a question as to the rights of surveyors to recover for preparing plans and drawing up specifications. Mr. Kemp appeared for the plaintiff, a surveyor, of 15, Duke Street, Adelphi; Mr. Alexander representing defendant, a solicitor of Salisbury. Mr. Kemp called his client, who stated that he had been requested by the defendant to draw up a specification for a building. After he had proceeded with the work for some time it was shown to defendant, who submitted it to his builder, when it was found that the cost would be some 600*l*.; and defendant said he should not go on further. He had kept the drawings. In cross-examination, Mr. Dowling admitted that the specification was incomplete, but there was no necessity to finish it, because the defendant declined to go on, the cost exceeding the amount he had fixed. Mr. Harper, an attorney, deposed that he had a conversation with defendant, who wished to have a fair copy of the specification so far as it went to submit it to his builder. Mr. Alexander called defendant, who stated that he had known plaintiff as a friend. Being desirous to erect a building, he told Mr. Dowling that if he would draw up a specification he would give him 5*l*. Plaintiff submitted some drawings, which defendant said were fanciful, and more fit for almshouses than the building he wished to have erected. Subsequently the specification, in an incomplete state, was submitted to the builder. Defendant found then that the cost would be 600*l*., and as he did not intend to go to more than 300*l*. or 350*l*., he abandoned the plan. In cross-examination Mr. Hill said he was never prepared to pay more than 350*l*., as his lease would not warrant his going to any more expense. Mr. Edwards, the builder to whom the specification was submitted, said that the plan was useless, as it was incomplete, and would only lead him into difficulties. His Lordship, in summing up, said the case appeared to be an undefended one. Defendant himself admitted that he requested plaintiff to make the plans, and then abandoned the business in consequence of the cost, while he had kept the drawings from which the specification would have been completed, so that plaintiff could not finish the work. The jury, after a very brief consultation, found a verdict for the plaintiff for the full amount claimed, 5*l*. 18*s*. 6*d*.

##### Vice-Chancellors' Court, May 4.

(Before Vice-Chancellor Sir R. MALINS.)

CORNISH v. HALL.

This bill was filed to restrain the erection of certain buildings at Dagnall's Park, Norwood, within 25 feet of a road called Dagnall's Grove, of the value of less than 200*l*., or as a shop or beer-house, or in any manner contrary to a certain covenant. It appeared that the land known as Dagnall's Park was the property of the Rev. J. L. W. Venables and the Rev. G. A. Oddie, and was divided into lots for building, some of which were sold by auction, and other portions eventually purchased by the London and Brighton Railway Company, a part of such portion becoming surplus land, and having come into the possession of the defendant. The plaintiff became the sub-purchaser of other lots, and built two houses of the value, as was alleged, of 1,200*l*., which he had opened as schools. Under the original conditions of sale it was provided that the covenants should run with the land, that the buildings should not be placed within a specified distance of certain roads, should be of the value of 300*l*. and 200*l*. respectively, and be used as private residences, not as a shop or public-house or beer-house, and in the conveyance these restrictions were extended to 'any trade or business whatsoever.' The defendant having purchased the surplus land from the railway company in the early part of January, commenced building three houses, and it becoming apparent that they were to be used as shops and a beer-house, notice was given to him in writing by the plaintiff, and ultimately this bill was filed. An *ex parte* injunction was granted, and an undertaking given, which was continued till the present hearing.

Mr. Cotton, Q.C., Mr. Everitt, and Mr. Harvey, for the plaintiff, contended that the defendant's establishment not being permitted under the covenants was distinctly infringing the agreement.

Mr. Glasse, Q.C., and Mr. W. Pearson, for the defendant, argued that the covenant by the purchase by the railway company had been discharged; that the defendant purchased without any notice of the covenant, that he was not put upon inquiry, and that the conditions affecting the property had been entirely altered, and it had been parted with to persons not bound by it, because it was a simple conveyance in fee. The plaintiff took under the covenant of 1854, the original one being in 1851, and having two houses one was used entirely as a school, and therefore not as a private residence.

Mr. Cotton, Q.C., was heard in reply.



The Vice-Chancellor said, he should not dispose of this case without careful consideration. It involved a question of the highest importance, because if the defendant succeeded, there was no property in this great country, where privacy was so valuable, which might not be subject to the noise and the nuisance of trade. The plaintiff had offered not to insist on the question of distance if the defendant would not use his buildings as shops or public-houses, and it was for him to consider whether he would accept that offer.

## ON THE DUTIES OF AN ARCHITECT.

ON THE DUTIES OF AN ARCHITECT, WITH REFERENCE TO THE ARRANGEMENT AND CONSTRUCTION OF A BUILDING. Read at the Society of Arts, on Wednesday, April 28. By T. ROGER SMITH, Esq.

(Continued from p. 238.)

WHEN the subject is once fairly grasped, the architect begins his design. Probably the mode of originating and elaborating an architectural design varies considerably, according to the habits and idiosyncrasy of each artist. I am inclined, however, to believe that, in most cases, a building is not first imagined as a building, but as a drawing—in fact, as a ground plan. Certainly the almost invariable custom is to commence upon the plan of the principal floor, and carry the arrangement of that on for some little way before touching any other part of the work. There will be ordinarily some simple germ, usually growing out of the arrangement of the communications between the best rooms, which will give the key-note, so to speak, of the whole. Such questions as the following are the ones which determine the lines of the skeleton of a plan:—Shall the building be symmetrical or irregular? Shall the rooms be entered from a hall or a corridor? In which direction will the offices, &c., lie best? From which side will the approach come? Where can the leading rooms be best placed for aspect, prospect, communications, and grouping? The chances are, that when these questions have been thought over for an hour, the true principle of arrangement, in order to combine them all, presents itself to the mind, and the key to the problem once found, the plan seems, in practised hands, almost to develop itself spontaneously.

From the first the designer ought to have present to his mind the possibility of forming a convenient series of upper rooms over those on his ground floor, the general nature of the roof which his ground plan will render necessary, and the leading masses externally and effects internally which his building will possess; and after he has gone some way with his ground plan he prepares plans of the upper floors, and elevations, or a prospective sketch of the exterior. This is all usually done to a small scale, and in many cases the drawings thus made have a very large amount of study devoted to them, and are altered and re-done very many times over, for in them lies the germ of the whole future work.

At length a series of fair sketches, embodying the main ideas of a design, has been prepared; and now, if not before, it usually becomes necessary to look into the question of cost.

In many cases the architect is furnished by his client, at the outset, with a statement of the sum to be laid out, as well as of the accommodation to be obtained, and it not unfrequently happens, by-the-by, that the first is not adequate to secure the latter. It is, however, a more frequent case that, in the first instance, the accommodation desired is named, and the architect is requested, in making his design, to state its cost as near as he can. However this may be, it may be accepted as a general principle, that most of us, when about to build, want more for our money than we can possibly get, and that, sooner or later, a conflict between cost and size has to be encountered. I, for one, always like to encounter it at the outset, and to endeavour to dispose of the question finally, although it is, undoubtedly, the most difficult part of our professional work to approximate, with anything like reliable accuracy, to the cost of a work for which nothing but the first sketches have been made, and perhaps hardly those completely.

The elements of this difficulty of estimating are two-fold—first, the extremely wide range of costliness or cheapness possible to buildings of the same size and for the same purpose; secondly, the extraordinary discrepancies which the estimates for the same work will present, when a dozen men are all tendering for the execution of the building, even when all of them are men whose business it is to get their living by knowing what work will cost to execute.

It may be supposed that architects have, or ought to have, at their finger ends, a series of trustworthy average prices; that it is familiarly known, for example, how much per bed a hospital ought to cost, how much per sitting a church, how much per room a dwelling-house, and how much per child a school. Again, it may be supposed that, bulk for bulk, one building will so closely resemble another that the price per cubic foot of bulk, or per superficial foot of area covered, can be gauged to a nicety; and it is quite true that such rough rules exist, and form the basis of our approximate estimates, but nothing short of very considerable tact, skill, experience, and adroitness in applying them to practice, will make them of any real value. It is a matter of simple counting to say how many rooms there are in a house, and of simple measuring to say what the cubic contents of a building, as shown on a set of plans, will be. It requires an amount of sagacity and experience not given to every one to say at what, of all the possible prices between eighty pounds and eight hundred, each room should be rated, or at what figure between fourpence and two shillings each cubic foot of contents should be priced. A few illustrations will show the truth of what I have been saying.

It is often urged that the difficulty of obtaining reliable preliminary information as to cost is greater than it ought to be, and perhaps it is so; but buildings are not the only articles of manufacture where prices range over a very wide margin. It appears to me that a house is a more complex thing than a black frock coat, or a wooden chest of drawers four feet high; yet the price of a coat probably ranges from three pounds to ten guineas, and that of a chest of drawers from thirty shillings to twenty pounds; and no such extremes as are exhibited in these prices, or a hundred other familiar

examples that I could name, are known in the building trade. In fact, it may be safely said that an approximate estimate of a building, prepared with care and candour by an experienced estimator, is to the full as reliable a document as any of the ordinary bases upon which transactions are begun; while the building which is the subject of it is very widely open to variations in the course of its after-progress.

It is very important to the future success of the undertaking that the plans, made at this its early stage, should be understood by those who commission the building. To some a plan is an almost unintelligible document, and, in that case, some slight model ought to be constructed, to make arrangement, and even in some cases appearance clear. With or without this aid, and with more or less trouble, the architect has now to see that his client fairly understands what he proposes, and fairly comprehends what he, the architect, judges will be the probable outlay. The amount of alteration which takes place at or about this stage of the work is often very great. In many cases the building has to be planned afresh, or rearranged, or cut down, or enlarged, many times over, before a result considered satisfactory is obtained; in others, the design is accepted without modification. Sooner or later, however, the design is supposed to be in the main settled, and now commences the preparation of the definitive drawings.

In some rare cases, the drawings made to embody the idea of the design can be completed for the execution of the work. In the majority of instances this is impracticable, and an entirely new set of plans is prepared. These ordinarily go by the name of 'contract drawings,' as they form the basis of the agreement with the builder who executes the work. The favourite scale for these drawings is one-eighth of an inch to one foot, that is to say, the drawing is very nearly one-hundredth of the size of the actual work, and the drawings usually prepared to this scale are plans of the foundation, of each storey, and of the roof: geometrical elevations of each side of the work; and two or more sections, cut through the building from end to end and side to side, on arbitrary lines chosen so as to show those portions of the construction or arrangement which it is most important should be exhibited. These are followed by drawings on a larger scale; for the whole course of the development on paper of an architectural work consists in re-drawing again and again portions of it (or the whole), each time to a larger scale. Thus the contract or working plans, if to an 'eighth' scale, as has been explained, are to a scale larger than (in fact the double of) the scale most frequently used for first sketches, and in their turn they are supplemented by drawings on a scale twice as large, namely, one quarter of an inch to a foot, showing in greater detail portions of the building; parts are again drawn out to scales of half an inch and one inch to the foot. Some details are then usually given to an eighth of full size, and the most important mouldings, enrichments, &c., are drawn full size. The set of contract drawings thus made by no means includes all the drawings necessary for the erection of the building, or even the larger number of them, but it contains all the most important general drawings, and sufficient details to enable a fair estimate to be formed of the work throughout.

The work to be gone through in the preparation of the set of contract drawings is arduous. They have often to be executed under pressure as to time, and yet they always ought to receive very full, careful attention, as in the preparation of them every point of importance, either in arrangement, construction, or treatment, ought to be anticipated and settled.

When the set of contract drawings is approaching completion, the architect has to prepare a document which accompanies them, and specifies the exact quality of material to be used, the precise mode of executing each portion of the work, and the thicknesses, weights, and other precise numerical definitions of every article open to doubt. This document is called a specification, and in writing it the custom is to describe the materials and work under different trades, thus:—1. Excavator. 2. Bricklayer. 3. Mason. 4. Carpenter. 5. Slater. 6. Joiner. 7. Plasterer. 8. Plumber. 9. Smith and Ironmonger. 10. Painter. 11. Glazier. 12. Bellhanger. 13. Paper-hanger.

The proper drawing of a specification is a work of labour amounting almost to drudgery, requiring great care, patience, precision, and acquaintance with work. The most essential points about it are, that nothing should be omitted, that nothing should be slurred over, or insufficiently described, and that the same amount of detail or compression should prevail throughout. It is, of course, a work in which system, amounting almost to routine, is essential; but, even with that assistance, the greatest vigilance is necessary to prevent omissions, however good the system may be. It is also customary to append to this specification a series of conditions, either those usual in building contracts, or such a modification of them as will suit the circumstances of the case. When these contract-plans and the specification are settled and near completion, it is not uncommon to make a second approximate estimate, and it is almost always worth while, for the basis of the estimate being in a much more complete state, it is possible to form a much more reliable calculation of the probable cost.

We have now reached the close of one complete phase of the architect's work, but one which has embraced really three distinct processes—the study of the subject, the general designing of the building, and the elaboration of the design in a practical shape. Let us for a moment review the nature of the work done thus far.

Of the architect's study of his subject, I said at the outset little—in fact, perhaps, too little—as in many cases this is a severe labour, and if, in any individual instance it is quite easy, the reason is because the architect has gone through the work of acquainting himself with the same subject on some previous occasion. In the example I have selected—that of a large dwelling-house—the habits of English families are so uniform, that an architect who has once mastered the subject may plan a house without much trouble, when he knows the size of the family and its customs. But in the case of each house-building architect there occurs a first good house, and to prepare well for that he requires to consider thoroughly the position and use of every room, and every part of a room, from the drawing and dining-rooms to the oven, scullery, and brewhouse. There are, however, many architects much engaged on public works, whose different buildings vary so much that each requires a separate investigation. For example, you can quite understand that there is little in common between a post-office, an hospital, a theatre, a palace, a court of law, a cathedral, a

range of public offices, a fountain, a country house, a college, and a temporary exhibition building; yet in one architect's practice, with the work of which I am very familiar, the drawings for all these were going on within a space of about two years. It is manifest that each of these subjects must have required no small amount of special study, in order to produce a building thoroughly suited to the convenient discharge of the business to be carried on.

(To be continued.)

## SOCIETIES.

### Royal Institute of British Architects.

ABSTRACT OF REPORT OF THE COUNCIL READ AT THE ANNUAL MEETING,  
3RD MAY.

Since the last annual report was issued 26 Associates and 12 Fellows (of whom 9 were previously Associates) have been elected. In other classes of membership the numbers are as follow:—13 honorary Fellows, 9 honorary Members, and 78 honorary and corresponding Members, making, with ordinary Fellows and Associates, a total of 608 Members. There are also 10 contributing visitors, 9 students, and 10 temporary students.

The Council have to report that several meetings of the Professional Practice Committee have been held to deliberate on important questions, both of a private and public nature. In December last they received a deputation from the London Builders' Society, who were desirous of submitting, for the consideration of the Institute, the details of an arbitration clause proposed to be incorporated with future forms of contract. In the course of the conference many points were raised, which rendered it desirable that the professional relations between architects and builders, as well as between builders and their employers, should be discussed *in extenso*; and, with this object in view, a sub-committee was appointed, who, after collecting from various sources sufficient material for their purpose, will shortly report the result of their labours.

The exceptional terms offered to architects in connection with the limited competitions for infirmaries and similar buildings, to be erected in or near the metropolis, engaged the attention of the Committee for some time, and in connection with the scale of professional charges generally adopted by the Institute, involved a delicate and difficult question, which the Council trust has been sufficiently met by the resolution on this matter—a copy of which was forwarded at the time to individual members of the Institute.

The necessity for a careful examination of the Metropolitan Buildings and Management Bill, suggested at the Ordinary General Meeting on January 20, 1868, led to the appointment of a Select Committee on the subject, by whom the Bill was considered, clause by clause, during many sittings. Their final report, it will be remembered, was submitted for the approval of a Special General Meeting held on February 1, 1869, and, after a few amendments, was forwarded to the Metropolitan Board of Works in accordance with a resolution of the Special Meeting and at the request of the Board itself.

The Committee for the "Conservation of Ancient Monuments and Remains" has, happily, had but few instances of threatened destruction or neglect brought before its notice within the last twelve months. It has, however, tendered its advice on some matters of importance, and generally with a satisfactory result. The preservation of the Church of St. Mary Somerset, in Thames Street, one of the works of Sir Christopher Wren, which was proposed to be removed during the recent alterations in the City, may be mentioned as an instance in which the timely intervention of this Committee has been successful.

In reference to this subject, the Council have to record with much satisfaction the appointment of the Hon. Austen H. Layard, M.P., hon. Member, as First Commissioner of Her Majesty's Works, and that, in his official capacity, that gentleman has already claimed the attention of Parliament as to the necessity of placing ancient monuments of architectural interest under the proper supervision of Government.

The question of artistic education for architects, after a lapse of some years was again revived at the last Annual Meeting of 1868. The Council, feeling that the scheme of a voluntary architectural examination had not met, of late days, with the response which was at first anticipated, appointed a committee to reconsider that scheme, and in consequence of its recommendation passed several resolutions, their object being to encourage candidates to come forward for examination, not only by affording them increased facilities for study at the Institute, but by granting some formal acknowledgment to those who pass the examination with success. The Council has also been requested to determine the most appropriate form in which such an acknowledgment could be furnished.

A voluntary subscription was opened in 1868 by the Institute, in aid of the Palestine Exploration Fund. Upwards of 50*l.* was collected for this object, and forwarded to G. Grove, Esq., hon. sec. to the fund, whose interesting paper on the results of the expedition will be remembered. Additional interest will no doubt be felt in this undertaking from the fact that Professor Donaldson, P.P., Hon. Sec. F.C., has since become officially connected with it, and in the autumn of last year started for the Holy Land and joined the party of exploration. His letter, dated December 21, 1868, and published in the Institute Transactions, has already given some information on this head, and no doubt much more may be expected from the same source. Another letter from that gentleman, dated from Rome, March 3, 1868, refers to many important architectural works now being carried on in Italy. Both these communications have been published in the Transactions of the Institute.

The sessional papers read during 1868-69 have been of varied interest, and have comprised the following subjects:—

"On the Foreign Artists employed in England during the Sixteenth Century, and their Influence on British Art," by Sir M. Digby Wyatt, Fellow. Discussion on Sir M. Digby Wyatt's paper. "On the Fall of the Cupola of the Leopoldstadt Basilica, Pesth." "Apparatus to Determine

the Pressure of the Wind," by Professor F. Lange, honorary and corresponding Member, Karlsruhe (translated by C. C. Nelson, F.S.A., Fellow). "On the Works executed in Terra-Cotta at the new Alley's College, Dulwich," by Charles Barry, Vice-President. "A Short Description of the Plans of Hospitals at Paris, Munich, and St. Petersburg," by Dr. Oppert. "The Opening Address by the President for the Session 1868-9." Discussion on Mr. C. Barry's paper "On the Works executed in Terra-Cotta at New Alley's College, Dulwich." "On Mosaic Decoration," by A. H. Layard, Esq., M.P., D.C.L. "Notes on the Celtic, Roman, Moorish, and other Architectural Remains in Algeria," by Professor T. H. Lewis, Fellow. "A Descriptive Sketch of the New House at Homewood, Co. Wicklow," by Wm. White, Fellow. A communication from Professor Donaldson, past president, honorary secretary foreign correspondence (dated "On the Archipelago, *en route* from Athens to Trieste"). "On a Development of the Theory of the Architecturesque," by Professor Kerr, Fellow. "On the Science of Colour," by William Benson, Esq. "A Memoir of Joseph Bonomi, Architect and A.R.A., with a Description of his Design for 'Rosneath,' &c." (illustrated by many original drawings), by Wyatt Papworth, Fellow. "On Masons' Marks, including an account of the Chevalier Da Silva's work, 'Signes qu'on voit gravés sur les Anciens Monuments du Portugal, &c.," by George Godwin, Fellow, F.R.S., F.S.A. "On Architectural Criticism," by E. Ingress Bell, Associate. A letter from Rome, dated March 3, 1869, addressed to the President, W. Tite, M.P., &c., by Professor Donaldson, past president, honorary secretary for foreign correspondence. "A notice of the Professional and Literary Works of the late Arthur Ashpitel, Esq., F.S.A., Fellow," by Wyatt Papworth, Fellow.

Ample accommodation has been provided for the display of architectural designs and drawings in the new buildings of the Royal Academy; and it is also noteworthy that the collection of casts possessed by the Institute, and hitherto preserved in one of the basement rooms, has been offered as a loan to, and as such accepted by, the authorities of the Architectural Museum, where they will be more accessible for inspection in future.

After the Report was adopted, the usual election of officers took place, and Mr. Tite was once more nominated to the Presidential chair. As, however, the result of one of the remaining elections was not formally declared on that occasion, we abstain from giving the list till our next issue.

One point deserves to be widely known. On the motion of Professor Kerr, a special meeting was agreed to be held, at which the whole question of how to give greater efficiency to the Institute, and render it more serviceable to the profession, is to be discussed. There is great room for improvement, and we heartily welcome the prospect of such an enquiry.

### The Institution of Civil Engineers.

The annual festival was held on Wednesday week at Willis's Rooms, King Street, St. James's. Mr. C. H. Gregory, President, in the chair. The Duke of Buckingham, in giving 'Prosperity to the Institution of Civil Engineers,' coupled with it the name of the senior past president present, Mr. Bidder, and paid a high though deserved tribute to the value of the services of the civil engineers, whose works were not intended to benefit one class or one country, but the world at large. They had turned swamps and marshes into fertile grounds, raised water in dry and scorched-up plains, developed the hidden riches of sterile and trackless lands. They had promoted trade and commerce everywhere, and had done more to advance the happiness, prosperity, and convenience of mankind than any other body of men that ever lived. Mr. Bidder briefly returned thanks. Amongst the other speakers during the evening were—Lord Stratford de Redcliffe, Lord Lawrence, Lord Houghton, Baron Bramwell, Lord Bury, &c.

### The Art Union of London.

The annual meeting of this Union was held at the Adelphi Theatre a short while since. Mr. Lewis Pocock, F.S.A., the hon. secretary, read the report, which stated that the amount of subscriptions to the Union was 11,109*l.* 10*s.* 6*d.*, and that the picture this year presented to the subscribers was a chromo-lithograph of Mulready's 'Choosing the Wedding Gown,' which had been very successfully printed. It was announced that the next work of art issued to subscribers had been chosen by competition, the artist being Mr. H. C. Selous, whose works, the 'Pilgrim's Progress' and the 'Surrender of Calais,' had been selected in 1852 and 1853 for the subscribers. The new work is to consist of a volume of twenty plates, illustrative of 'Hereward the Wake.' An announcement was made that Mr. Godwin was about to retire from the post of hon. secretary, that Lord Stanley and the Dean of Canterbury had become vice-presidents, and that vacancies on the council had been filled by the election of Sir Walter Stirling and Mr. G. W. Reid, of the British Museum. The reserve fund now amounts to 14,911*l.* 14*s.* 7*d.* The council keep in view the importance of obtaining a gallery, and are considering the practicability of establishing a permanent exhibition in connection with the society. The report referred to the extensive connection established abroad, and especially in our colonies, Peru, New Zealand, Boston (United States), and other places; and draws attention to a munificent bequest by the late Mr. Felix Slade, setting apart 45,000*l.* for the foundation and endowment of professorships and scholarships of fine arts. From the directions given by the testator to his trustees and executors, it appeared that unless the arrangements proposed be promptly carried out, this munificent gift will be lost. The ballot was then taken for the prizes before the meeting, and art gifts, to be chosen by the winners, of the value from 200*l.* to 10*l.*, with other gifts, were distributed. The proceedings closed with the usual vote to the chairman.

The Proposed Infirmary near Kennington Road.—The best, second best, and third best designs for this Infirmary (St. Mary, Lambeth) are respectively those of Mr. Andrew Wilson, Messrs. Stenning and Lepard, Messrs. Tyler and Foulsham. Messrs. A. and C. Harston's is the best Workhouse plan. The premiums are 150*l.*, 100*l.*, and 50*l.*; also 50*l.* for the Workhouse plan.

## NEW BUILDINGS AND RESTORATIONS.

**The New Church at Kensington** has a nave, 110 feet long and 30 feet wide from centre to centre of the columns; the height to the apex of the wooden roof is nearly 80 feet. The two aisles, which are separated from the nave by columns of red granite, contain lateral arched recesses for altars. The chancel, which is 40 feet long, is terminated by a five-sided apse, vaulted and lighted by nine large two-light windows, under which is a richly moulded arcade. Over the chancel arch rises a *flèche* of wood and lead 150 feet in height.

**New Swimming Bath.**—At the last meeting of the Marylebone Vestry, the Chairman announced, as a Commissioner of Baths and Washhouses, that the new swimming bath would be opened for inspection in a few days.—Mr. Poland moved and carried a resolution approving of the proposal of the Metropolitan Board with regard to appropriating a portion of the Finsbury Park for building purposes.

**The Sanitary Committee of the Paddington Vestry**, at their last meeting, resolved that any plan for improving the old churchyard ought to comprehend a scheme for erecting a mortuary. It was proposed that the matter be referred to the Churchyard Committee, which was adopted by the board.

**Lambeth Vestry.**—At the last vestry Mr. Hill called attention to the fact of the purchase of a piece of ground by the guardians for the erection of a workhouse; and also to the opportunity it gave the guardians to open a line of communication between Kennington Road and Kennington Lane, in continuation of Hurley Road; and asked the guardians if they would provide for its being done? The chairman said the matter had been under the consideration of the Board, and that the guardians would do what they could in the matter for the benefit of the public.

**St. Olave's Board of Works.**—The clerk is empowered to purchase certain property for the purpose of extending the present stoneyard.—1,600*l.* is also to be borrowed from the London and Westminster Bank, wherewith to purchase certain property in Mill Lane and Tooley Street for street improvements.

**The Foundation Stone of a chapel and schools for the Primitive Methodists of Leigh** has just been laid by Jabez Johnson, Esq., J.P., of Pennington Hall. The building will be of a semi-Gothic style of architecture, having its principal front towards Bradshawgate. It will be constructed of brick, having Edge Fold stone and blue and white bricks for door and window dressings, and a pressed-brick front on north elevation. The means of ingress to the chapel are by two porches, one on either side of the principal front, and over each porch door there will be an inscription stone, with artistic riband name, having date, &c., carved thereon. The chapel will be an amphitheatre in form, and will be above the school, class rooms, &c., having neat open pewing to accommodate from 400 to 500 persons. The building—to cost 1,512*l.*—is to be completed by October 1 next. Architect, Mr. Edward Pritchard, C.E., of Leigh; builder, Mr. Thomas Bethell, of Earlestown.

**St. James's Church, Halifax.**—The works at this church have been rapidly pushed on since the laying of the corner-stone. The working of the four-light west window and the bell-turret (which is to contain two bells) are now complete. The aisle roofs have been put on, and the roofing of the chancel has been commenced. The chancel arch and east window are also finished, as well as the clerestory on the north side, and it is expected that the building will be ready for the roof of the nave by Whitsuntide.

**Sunderland.**—The foundation-stone of a United Presbyterian Church has been laid in this town. It is in the Gothic style of architecture, and will be built entirely of stone. Accommodation is provided for 300 persons; and the total cost will be about 3,500*l.* Mr. Thomas Oliver, of Newcastle-on-Tyne, is the architect.

**Cullercoats.**—A new hotel is about to be erected at this marine village, on the north-eastern coast. It will be in the centre of the bay, and have a fine sea view. Mr. Thomas Oliver, of Newcastle-on-Tyne, is the architect.

**The New Smithfield at Hanley, Staffordshire.**—The New Cattle Market at Hanley, provided by the Town Council at a cost of about 3,000*l.*, was opened on the 20th ultimo. It contains an area of eight thousand square yards. The principal frontage in Bethesda Street will be about one hundred yards in length. The accommodation to be provided, in the first instance, will be for 220 head of cattle, 1,620 sheep, and 100 pigs. The pens are formed of strong iron pillars with sockets, in which rails of wood are inserted. There will also be a 'champering' ground for horses, ten yards in width, along the west boundary wall. Some two thousand square yards of land will remain within the enclosed area of the market, even after pens to the above extent have been all fixed, on which additional pens will be erected as they are required; but that space is levelled and sewered, and the foundations for the necessary pavement and pens are laid, so as to admit of enlargement in conformity with the plan of the market. When the whole area is thus covered, there will be ample accommodation for 380 cattle and 3,600 sheep and pigs. The new Smithfield has been designed and laid out by Mr. T. Hewson, the borough surveyor.

**Buxton, Derbyshire,** wants to borrow 1,200*l.*, being 600*l.* for the completion of the Market Hall, 500*l.* for the construction of sewage tanks and the extension of the main sewer, and 100*l.* for sheep pens and sheds in the Cattle Market.

**Warrington Workhouse.**—At the meeting of the Warrington Board of Guardians on April 27, the Chairman said he was informed it was five years since the house was painted, and as the alterations were going on, it was thought not well to delay it too long. Mr. Johnson, at the request of the Board, promised to draw up a specification of what was necessary and the probable cost, in order that tenders might be advertised for.

**Accident at Ruswarp Church.**—On Saturday morning last, Samuel Dean, clerk of the works at the Ruswarp new church, fell from the sloping roof of the side aisle, and broke one of his thighs.

**St. Jude's Church, Wolverhampton.**—The new district church of St. Jude's, erected near Newbridge, on the right-hand side of the Tettenhall Road from Wolverhampton, has lately been consecrated. The site for the church and parsonage, together with 2,000*l.* towards the endowment fund, was the gift of Miss Stokes. The building was erected by Mr. Nelson, of Dudley, from the designs of Mr. Bidlake, of Wolverhampton, at a cost of 4,500*l.* The plan is cruciform. The nave is 92 feet 6 inches long by 32 feet 4 inches wide, the aisles 13 feet 6 inches wide, and the chancel 35 feet long by 23 feet wide. On the north side of the chancel is the organ chamber, and on the south side the vestry. The tower is at the west end of the south aisle, and the entrances to the church are under the tower and a porch in the north aisle. The seating is divided into four bays by central and aisle passages. The shafts supporting the nave arches and clerestory wall are of Aberdeen granite polished, as are also the shafts to the chancel arch, the caps being richly carved. The style of architecture is Geometric Decorated, and the materials used are Codrall stone for the walling, laid in level courses, rock faced, with dressings of light-coloured stone. The different colours of the two stones are very effective. The timber work is deal, stained and varnished. The glazing is with cathedral tinted glass in lead lights of geometric design. The pulpit and reading desk, which are of oak, and the font of stone, are in part a gift from the Rev. A. B. Gould. The contractor for the heating apparatus was Mr. Blakemore, of Wednesbury, and for the gas fittings Mr. Thomason, of Birmingham. The carving, which is well executed in the conventional style, is by Mr. Forsyth, of Worcester. The edifice seats 812 adult persons.

Some gentlemen in Leamington have resolved to start a new Provident Dispensary there; and a public meeting has been held, under the presidency of Lord Leigh, for the purpose of establishing it. The 'governor's fund,' derived from subscriptions and donations of governors, is intended to bear the general expenses of the institution.

**The Foundation Stone of a New Chapel** was laid at Framwellgate Moor on the 26th ult. The site is situated behind the row of houses skirting the high road. When completed, the building, which will be of red brick, with stone dressings, will seat about 150 persons, and the cost of erection is estimated at about 200*l.* Mr. Herbertson, of Brandon, is the contractor for the mason's work, and Messrs. Saunder and Mellerby, of West Hartlepool, for the joiner work.

**The New Temperance Hall**, in Exchange Street, Doncaster, has been formally opened, the occasion being celebrated by a public tea in the hall. The building has been erected from plans prepared by Mr. S. Richardson. It includes, in addition to the hall, a large room to be fitted up as a workman's free reading-room. The total cost will be about 400*l.*

**Memorial Window.**—During the past week a beautiful stained glass window, in memory of the late Mr. Thomas Stubbs, of Boroughbridge, York, has been placed in St. James's Church. The design, which has been executed by Messrs. Hughes & Ward, London, is founded on Simeon receiving the infant Saviour in the Temple. Underneath the window, on a brass plate, is placed the following inscription:—'Thomas Stubbs, of Boroughbridge, died 6th November, 1867, aged 71.'

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

## A New Exhibition in London.

The extraordinary number of pictures excluded from the Exhibition this year—a considerable proportion having been actually accepted, and only finally omitted on the ground of want of space—has induced a committee of gentlemen and artists to form a select supplementary exhibition. A noble and spacious suite of rooms has already been secured in Bond Street, within two minutes' walk of the Academy. Mr. Moy Thomas has consented to act as secretary; and all communications should be addressed to him at 25, Old Bond Street.

## Notes for Connoisseurs.

**Berlin.**—By command of the King, a great stained-glass window, destined for the Cathedral of Aix-la-Chapelle, is now on view in a temporary shed, specially erected for the purpose, in the 'Lustgarten.' It forms the last of a series of windows presented to that church by the late King Frederick William IV., and has for its subject the Virgin Mary as Mediatrix. It is considered one of the most important works of the kind—in size, richness of tone and execution—produced in modern times, and is especially interesting because all the accessory figures are portraits. This, as well as the windows which are already in their places, bear laudable testimony to the activity and skill practised at the Royal Manufactory of Stained Glass, which has now been in operation for twenty-five years.—The committee appointed by the municipal authorities to consider the interior decoration of the Townhall (Rathhaus) has closed its labours, after arranging the amount and disposition of the frescoes and sculptures to be executed. A sub-committee is appointed to control the actual execution of these several works of art.

The School of Art has begun its summer term with 350 pupils. The masters and lecturers are Messrs. Jacobsthal and Scholtz, architects; Messrs. Ewald and Schaller, painters; M. Göritz, sculptor; and M. Greiner, civil engineer.

**Paris.**—We have noticed the sale of the pictures belonging to M. Edouard Fould, but his collection was principally remarkable for other works of art than pictures. An Oriental sardonyx, mounted on a box, sold for upwards of 300*l.*; and a similar stone merely set in a ring of gold, 100*l.*; a Milanese vase of the sixteenth century, in rock crystal, fetched 554*l.*, and a cup of the same period and material, 368*l.*; a small *aiguïère* in Oriental agate, 584*l.*; and a modern vase in Persian lapis lazuli, 404*l.* The collection of works in precious and hard stones was magnificent, and fetched very high prices. There were, however, objects of more artistic value, especially two



Limoges enamels—a triptych, with six leaves, attributed to Martin Didier, and sold for 316*l.*; and a picture of Bathsheba leaving her bath and surrounded by her women, attributed to Jean Courtois, which fetched 405*l.* The entire collection realised nearly 23,000*l.*

Two magnificent specimens of tapestry were disposed of the other day at Prince Demidoff's sale. A large piece, of Gobelins manufacture, representing an Oriental scene, after Leprince, sold for 644*l.*; and two pieces, of Beauvais manufacture, with four *portières*, with subjects from Don Quixote, which fetched 440*l.*

The collection of French pictures owned by the Marquis du Lau were sold in Paris on the 5th ult.; they only numbered twenty, but were nearly all gems. There were five works of Eugène Delacroix, one being the best of his easel pictures, 'The *Convulsionnaires*, or Fanatics, of Tangiers;' others, a splendid sea piece, horses emerging from a bath, and a noble figure of a blind man, scarcely known, and quite out of his usual style. The other pictures are by Decamps, represented by two works; Daubigny, Rousseau, Isabey, Ziem, Troyon, Diaz, Corot, and others; and it is evident that M. du Lau's only aim was to secure one of the very best illustrations of the talents of each artist.

An account produced during a late debate in the Corps Législatif shows how great exhibitions interfere with the regular progress of other affairs. The amount taken at the doors of the *salon* reached 132,000 francs in 1866; in the following, Universal Exhibition, year, it fell to 66,000 francs; and last year, when the visitors to Paris were comparatively few, it amounted to 118,000 francs. The number of works purchased by the Government reached in each of these years the large sum of 165,000 francs, or 6,200*l.*

#### Notes from Germany.

**Vienna.**—The suburb of the 'Brigittenau' is for Vienna (on a very small scale, it is true) what Blackwall is to London, and here a new parish church is in course of erection from the designs of M. Fr. Schmidt. It consists of nave and two side aisles, with two towers and an open hall or *pronaos* at its western extremity. The chancel is apsidal, flanked on both sides by projecting sacristies and vestries, over which are arranged the oratories—as far as we are aware, a somewhat unusual position for the latter. Only the chancel is gabled, the rest being covered in with a coved and panelled ceiling of stained wood, the principals exposed and wrought. There are no galleries, but stairs in each western tower reach to the ringing floor, and are left visible to that height from below. The style is a late Gothic, with boldly projecting buttresses, mullioned windows with tracery heads, and flying buttresses across the aisle roofs and between the clerestory windows. The walls are of brick, the freestone from Bohemian quarries, and the internal dimensions are 190 feet by 65 feet. The church is intended to accommodate 2,000 worshippers, and is estimated at 180,000 florins (18,000*l.*).

**Munich.**—A second Protestant church is about to be erected here, funds for which are now being collected. The King has contributed 25,000 florins from his private purse, and the Minister of Public Worship has promised another 10,000 florins.

**Bremen.**—Two new parish churches are being built in this city. One is in the Humboldtstrasse, from the plans of Herr Toppe, the contract of the builders (Struckmann Brothers) being 3,500*l.* The other is a new church for the old parish of St. Remberti. M. Henry Müller is the architect after competition, and the peculiarity is that the churchy has no chancel, this feature having been declared as un-Protestant by the Committee. The communion table will consequently be in front of the pulpit.

#### International Art Exhibition at Brussels.

The triennial exhibition is to open at Brussels July 25, and to close Sept. 26. The number of works which each artist may send is limited to four, but a number of drawings, miniatures, medals, &c., may be contained within the same frame. The Belgian Government pay the expenses of carriage within the frontiers going and returning. No work will be received after June 30, unless it has appeared at the Paris *salon*, in which case the time is extended to July 10; but as the *salon* does not close till the 20th of that month, works can only appear at the two exhibitions by special permission of the French commission.

The Government will apply a certain sum of money to the purchase, for the State, of works of art recommended by the jury, and also for the encouragement of young Belgian artists by pecuniary recompenses not to exceed in any case more than 1,000 francs.

The general prizes consist of a gold medal of honour—in each section, we presume; five other medals for painting, two for sculpture and medal engraving, one for engraving and lithography, and one for architecture. Three other supplementary medals may be awarded if the jury recommend it. This is certainly the very shortest list of awards ever offered at an international exhibition.

#### Passage of Mount Saint Gothard.

The Prussian and Italian Governments have determined upon the tunnelling of Mount Saint Gothard as the most favourable scheme in the interest of the two countries. The cost of the work, which will probably occupy eight or nine years in execution, is estimated at 6,840,000*l.*, and the capital is to be made up by subventions amounting to 3,600,000*l.*—1,800,000*l.* in obligations and 1,800,000*l.* in shares. The North, East, and Central Companies undertake to supply two-fifths of the capital in shares, and will take an equal share in the direction and administration of the line.

#### Bombay.

Dr. Macleod, in writing of Bombay, remarked that, 'save for the surrounding scenery, Bombay would be an uninteresting city to a traveller;' and 'as to the native town, no Irish village of the worst kind has a look of greater poverty, confusion, and utter discomfort.' The *Bombay Guardian*, in commenting upon the above, remarks as follows:—'There are many large and rather costly buildings in the native town, but they are built without the slightest regard to architectural effect. A European who should lose his way in the native town would discover many of these in

narrow and secluded streets and gullies. He would often see a capacious many-storied dwelling-house, and would perhaps see cows and buffaloes going up the steps and in at the front door. Such an idea as that of building their houses on some common plan, with reference to combined effect, is utterly foreign to the minds of our native follow-citizens. Unfortunately, builders have a *Shashtra* giving minute instructions regarding the building of houses, the points of the compass which they are to face, and other details of construction, neglect of which would be considered fatal to the fortunes of the occupants. As the municipality have not taken these things into account in laying out streets, it often happens that the houses on a street, instead of presenting one face, all stand a little sideways, and exhibit a succession of zigzags. But we cannot assign all blame of the unsightliness of Bombay to the natives. The ugly-tiled roof spoils all our buildings. The hiding of the roof the Greeks considered almost a *sine quâ non* in architecture; but it seems to be the fashion here to make the roof as obtrusive and naked as possible. A good many expensive buildings are springing up on the Esplanade, but we look at them with more or less of trembling. It is a great mistake to insist upon a fine *façade* when the rear of the house (more conspicuous than the front, perhaps) is recklessly ugly. The row of out-houses connected with the bungalows on the Esplanade is more conspicuous than the bungalows themselves, and sufficiently suggestive of Dr. Macleod's Irish village.'

## General.

**Civil and Mechanical Engineers' Society.**—The members of this Association made their second visit to works on Saturday last, and inspected the new Blackfriars Bridge (which is soon to be opened to the public traffic), by permission of the engineer (President of the Society of Engineers). The members afterwards visited the Blackfriars section of the Thames Embankment, by permission of Mr. Bazalgette. Amongst the gentlemen present were B. Haughton, president; F. H. Roberts, secretary; R. M. Bancroft, F. A. Klein, and G. W. Usill, members of council; G. R. Godson, H. Siccama, A. H. Pain, &c., &c. This day (May 8) the members of this Society, by permission of the architect, will visit the Italian Opera House, now building in the Haymarket.

A fire broke out, on Saturday last, in the stables adjoining the saw-mills of Messrs. Tomkins & Co., Green Bank, Wapping; and these (90 feet long by 20 feet broad), with a loft above, were completely destroyed. The Independent Chapel in Old Gravel Lane also had its back window burnt out.

**Monumental Stones in Scotland.**—At the last ordinary meeting of the Society of Antiquaries of Scotland, Mr. James Drummond, R.S.A., said: 'In the churchyard of Kilmartine is an ancient cross covering the grave of a family in the village; and the minister of the parish told me that not a long time ago it had stood by the roadside about a quarter of a mile from the church, where the socket still remains built into a wall. It was taken from that spot and appropriated by the village smith, whose only descendant, an old woman, holds by the claim. From the burial-ground attached to St. Oran's Chapel, one of the most interesting and beautiful of the monuments has been removed. This theft is especially to be regretted, as the stone had a small figure in a sort of central niche, dressed, it is asserted, in the Highland garb. Moreover, it was one of the few with the remains of an inscription, 'Hic jacet M'Leod.' There was also a galley sculptured on the top of it.'

**Free Library and Museum for Paisley.**—The foundation-stone of this fine building, the gift of Mr. Peter Coats, of Paisley, was laid one day last week with full masonic honours. The occasion was observed in the town as a general holiday, and from an early hour in the morning the streets were crowded with people from the neighbouring country, Masons in full costume, and the townspeople themselves in holiday attire. The place was decorated with flags, arches of evergreens, and innumerable festoons. A grand procession of trades, comprising 37 divisions, was formed at several different points, and marched through the principal streets towards the site of the building in High Street. Of Freemasons there were present no fewer than 4,300, with the Earl of Dalhousie, W.G.M., at their head, and comprising deputations from 109 lodges in the counties of Renfrew, Dumbarton, Lanark, Argyll, Bute, Dumfries, Stirling, Forfar, and Midlothian. In due time the procession reached the building, where the Provost and magistrates of the burgh, Mr. Crum-Ewing, M.P., Sheriffs Fraser and Cowan, Mr. Peter Coats, Mr. Thomas Coats, and the leading office-bearers of the Grand Lodge of Scotland, had assembled. Lord Dalhousie having advanced to the foundation-stone, Mr. Peter Coats handed him a silver trowel, with which he at once performed the usual ceremony. A grand banquet in the evening terminated the proceedings. The building, which is nearly completed, has been erected at a cost of from 3,000*l.* to 4,000*l.*, and is in the Early Greek style of architecture, with a portico over the main front 48 feet in height, the entrance being approached by an imposing flight of steps. Besides ample accommodation for the purposes of the library and museum proper, the building contains an excellent lecture-room, committee and retiring rooms, &c.

#### MEETINGS OF TECHNICAL AND LEARNED SOCIETIES.

THE ARCHITECTURAL ASSOCIATION.—June 11, at 7.30 P.M. Nomination of Officers.—'An Historical Account of the Artistic Treatment of Piers, Pillars, and Columns.' By J. Tavenor Perry, A.R.I.B.A.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—Wednesday, May 12. Annual General Meeting, 4.30 P.M.

ASSOCIATED ARTS INSTITUTE.—Saturday, May 15, at 8.15 P.M. Discussion: Question 'Was the Renaissance Movement productive of any Real Benefit to Art?'

SOCIETY OF ARTS.—Wednesday, May 12, at 8 P.M. 'On the Ventilation of Drains,' by James Lovegrove, Esq., Assoc. Inst. C.E.

# The Architect.

## THE ARCHITECTURAL ASSOCIATION'S SCREEN AT THE EXHIBITION, CONDUIT STREET.

BY EDWARD W. GODWIN, F.S.A.



HIS screen is, to my mind, incomparably the most interesting feature in the Conduit Street galleries. For a few years past some of us have looked at this portion of the annual Exhibition of architectural studies with much hope, and talked not a little among ourselves on the future life of English architecture, as foreshadowed in these slight sketches. Slight sketches

unquestionably, perhaps a trifle too slight as a rule; but most of them anything but slight as designs, and deeply, solemnly important as the early youthful exhibits of an architectural student's first thoughts.

Many of my readers know better than I can tell them what the Association is and what it does. For outsiders like myself, it may, however, be noted that, within the body, there is a sort of practical self-education going on under the form of classes established for the study of various subjects connected with the great all-embracing art of architecture. A selection from the annual labours of one of these classes, called 'the Class of Design,' is brought prominently before the public every year in the Conduit Street Gallery, and is thus exposed to the test of examination and criticism. And here it may be reasonably asked why the labours of only one class should be submitted to such a test? Why have we not another screen, exhibiting the progress in free-hand drawing, or indeed of anything the classes may be doing? I do not now propose to discuss the machinery which the Association employs, but the Council may perhaps be inclined to receive one suggestion. Would it not conduce to better results, if architects from outside the body, distinguished for special knowledge, would give an occasional evening to a class in the character of visitor—say, for example, the subject for a given evening in a class devoted to the scientific branches of our art was Acoustics; would it not be desirable to secure the critical remarks of such a man as Mr. T. Roger Smith? If the Association fancy they would not receive encouragement and help from the members of the Institute, they are much mistaken. Of course, architects are no exception to the general selfishness of mankind, and your selfish architect is naturally the last man to wish prosperity to rising young architects; but, I take it, the Institute is not altogether composed of selfishness. Believing, too, that the labourer is worthy of his hire, and having no faith in *honorary* anything, I would suggest that the visitors should be retained by fee, for the sake of the principle involved, and not at all with a view to anything like remuneration. A nominal fee of a guinea for every attendance would be sufficient for a recognition, whilst the amount of knowledge thus flowing into the body from experienced men would be incalculable. Had such machinery been at work during the past year, I believe some of the work, as for example the designs for a Theatre, would have been impossible.

Turning now to the Screen, we find 19 exhibitors and 46 works. Of these, about one-half might have well been kept back. Of the remainder, the Association might fairly be proud; notably of Mr. Walter Spiers' Parsonage-house, Mr. R. S. Came's and Mr. Deal's Warehouses, Mr. Hill's Iron-work, Mr. E. C. Lee's Steam-Boat Pier, Mr. Henman's Sideboard, and Mr. Reed's Bridge Toll-gate. All the six designs for Churches are promising, especially those by Mr. Henman and Mr. Lee, and the three Cathedral Portals are also good, especially that by Mr. Henman.

Some of those which show more than usual care may be examined a little in detail:—The six designs for a Brick Town Church, and the three designs for a Cathedral Portal, are more uniformly

good than any other group of designs. Mr. Henman's Church is altogether admirable. It looks what it is intended for—a town church, and he has secured this appearance by means of a low external ambulatory, and a lofty grand clerestory. Where so much is good, I shall but draw the author's attention to his belfry, feeling sure that he can reconsider this advantageously. Mr. Lee's Tower is by far the best on the screen. The belfry and louvres under the square spire, peeping just over the parapet, have a charming effect; but Mr. Lee must be careful to avoid being tempted by these bits of 'charming effect.' They are too often nothing more than temporary delights—momentary pleasures, which grow fungus-like round art and life, stifling the architect, and leaving him little more than a clever sketcher. The nave is very good, and the church well planned; but the chancel is so depressed that it looks more like a western porch or galilee than the chancel of a town church. The nave is vaulted, but I am at a loss to see why the roof should be hipped. The section shows the wall decorations very fairly designed, but drawn on such a small scale (16 feet to 1 inch), with such a coarse line, that the whole design suffers from plethora. To know what to leave out when drawing to a small scale, and under certain conditions, is one of those bits of knowledge not too often sought, and when sought not so very easy to find.

The designs for a cathedral portal are very carefully and elaborately worked out. I cannot but regret that Mr. Webb should have expended so much good labour on such an impure style of art as the Flamboyant. Mr. Hill's design is very carefully drawn in pencil so far as the skeleton goes; but as the flesh of the design is the figure sculpture, and this happens to be omitted, Mr. Hill must not be surprised when I ask him to give us something more next time. Mr. Henman's portal is one of the best pen-and-ink drawings in the room. The details are most carefully drawn, and the proportions have been so far considered and *reconsidered*, that the author writes upon the doorway, 'Please to consider the height increased by 12 inches.' This reconsideration is especially gratifying. The figures in the tympanum are fairly drawn, especially S. Peter, but inlay should not have been selected for such a position. If Mr. Henman will take the trouble to put his work into perspective, he may probably discover the reason why all such inlays are objectionable.

Mr. Walter Spiers, in a somewhat rough, but cleverly tinted drawing of a design for a parsonage-house, shows effective roof-grouping, and some sympathy with half-timbered houses. It would be interesting to see a perspective of this design, with the cinquefoil over the staircase omitted. Mr. Alexander exhibits a very carefully drawn design, and deserves great praise for his treatment of the gables; but wood parapets are thoughtless introductions. The designs for a warehouse are very nearly being all good. Mr. Came's perspective, delicately drawn in sepia, is admirable as a design and as a drawing. It lacks vigour in line, and there are defects of detail, such as in the terminations to string-course on the fourth floor, the dormer in the hoard between the gables, and the coarse finials on the gable-tops. The capitals are all ill drawn, both in this and in Mr. Deal's two designs of the same subject. Indeed, wherever free-hand drawing has been applied, it is hesitating and weak. Apart from the drawing and tinting, which are dull, Mr. Deal deserves credit for both of his designs. Mr. Verity's 'classic' attempt derives some force and beauty from the grouping of the openings, and the execution is bright and pleasing. Mr. Reed in his Bridge Toll-gate is as successful as 90 out of every 100 architects could hope to be. I know of nothing in the Academy or Conduit Exhibitions more thoroughly piquant and pleasing than this little unpretending work. Mr. Reed, however, wants practice as a draughtsman. Very praiseworthy, too, is Mr. Lee's Steam-Boat Pier, carefully drawn and thoughtfully designed. If, like Mr. Henman's Portal, it reminds us too forcibly of a certain popular dictionary, we must not grumble. We must all of us walk before we run, if we intend to run at all; but when able to walk, there is no need for leading-strings. I have heard of a big boy in his teens, who was always hungering after his baby brother's food. Architects do the same too often; they take the children's food, to save themselves the trouble of digestion, and can descend to be mean, rather than work and think out with sweat of brow their designs for themselves and by themselves. Furniture does not seem to be much understood by the Class of Design. Mr. Henman's work, although very ineffective as a drawing, is incomparably the best. All the others are more or less heavy, fussy, and pretentious. It is too evident that Mr. Lethbridge and Mr. Barter have been founding their work on the very bad specimens of furniture which have been lately published in the pages of a contemporary.

## OUR RAMBLER

ALONG THE SOUTHERN THAMES EMBANKMENT.

THE ANCIENT LAW provided for the arrival of a time when there should 'be no poor' among those who obeyed those merciful precepts. An observant visitor to London might almost be led to the conclusion that this happy time was close at hand in that metropolis.

It has been said that so rapid is the adaptation of the habits of the vast nomadic horde that lives amongst, without mingling with, the more settled inhabitants of this great capital, that if a row of hog-heads were left on the pavement in certain quarters, they would, within a few days, form the homes of a distinct tribe, or group, of street folk, whom it would be by no means easy thereafter to dislodge.

It almost seems as if our improvers—railway makers, market builders, road makers, wharf builders, sewer diggers, or what not—had considered that the converse of this view must hold good; and that, by destroying the accommodation, such as it is, that sheltered many of the poor, they could, to an equal extent, destroy poverty itself.

The circumstance which led our Rambler to form the above reflection did not, however, so directly apply to poverty, as to commerce. Whether or no the builder can drive away the former, it is undoubtedly in his power to check and banish the latter. To a certain extent he seems to have recently become bent on so doing.

The Ramble along the 6,640 feet of Northern Embankment, from Westminster to Blackfriars Bridge, which we described on a former occasion, would give but a partial and inadequate idea of the works in course of completion for the protection of the shores of the Thames, without a glance at the southern quay wall, which extends from the south-western abutment of Westminster Bridge for a distance of 5,000 feet up the river towards Vauxhall. The section and river elevation of this southern wall are similar to those already described, but the work on the Lambeth shore has been far less expensive than that which replaces the ancient line of 'Strand.' The 6,640 feet of Northern Embankment were let in three contracts, for the sum of 875,500*l.* The 5,000 feet of Southern Embankment were let in a single contract for the sum of 309,000*l.* Thus, the former cost 305*l.* per yard run, the latter 184*l.*

To obtain a distinct idea of the Embankments they must be viewed both from the river and from the shore. The Rambler, therefore, took to a steamer at Westminster Pier, and made a trip to the Victoria Bridge and back again, with the express purpose of observing the pictorial effect with which the newly girdled reach of the river strikes the eye of the traveller by water. Then he walked from end to end along the partially completed roadway, visited the docks and cuts, wandered out on to the banks which are being removed from the widened channel of the Thames, and thus gained a clear idea of what had been done, or was doing, on the land.

The first thought, however, that occurred during the survey—a consideration more important than either the architectural beauty of the scene, or the engineering skill displayed in the works which adorn it—was this: What is to become of the commerce of the Thames? Two and a fifth miles of wharfage and river-side frontage have been swept away. From Westminster to Blackfriars, on the southern side of the stream, the wharf wall will, no doubt, some day be continued. As it is, this portion of the river frontage appears to be chiefly in the possession of a few large and wealthy proprietors, who make use of it for their individual convenience, rather than for the purposes of general commerce. Above the hideous new Suspension Bridge of Lambeth, a grim and sullen river wall extends to a considerable distance in front of the Penitentiary. From the lower part of this wall, down to the immediate vicinity of the Palace of the Legislature, a short length of riparian property remains in all the picturesque confusion that indicates a diversity of private owners. But this little space is all that is now allotted, above the limit of London Bridge, to that on which the wealth and importance of London were originally based, the water carriage borne by the Thames. It is true that the introduction of the railway system has done very much to alter, whether permanently or not remains to be seen, the value of water transit. But, in some instances, lines of internal canal are still in full activity. In other cases, where the water communications have fallen into the hands of the railway companies, and have been neglected and discouraged in consequence, there seems reason to conclude that the railway people, commercially speaking, have made a great mistake. But is it conceivable that, while the Birmingham Canal remains an active channel of traffic, the Thames should be improved away into a non-commercial stream? Parliament, no doubt, in its wisdom, ought to have duly considered this question before sanctioning a quay wall, the solid granite parapet of which looks down with contempt on the useless mooring rings held in the lions' mouths; but somehow Parliament is mostly too busy to attend to matters which merely concern the prosperity of trade, or the general welfare of the people.

For good or for evil, however, this great stretch of water-side frontage is now closed against its former traffic. In three places there are entrances through the southern wall, sneaking, subterranean sort of entrances, covered, not by drawbridges, that would admit any floating craft provided with a mast; but with flat girder bridges—bridges that make it their chief business to maintain the road and the foot-

way, as if there were no inlet beneath them. Nor is this so much to be wondered at when we observe that they give access merely to private basins. Potters thrive along this southern shore; and great potteries have provided private docks of their own, with inlets to the river, closed by substantial gates, every way equal in their workmanship to the fine granite mouldings of the wall, but each, one must confess, unblushingly exclusive and selfish.

One provision seems to have a more public aim. Beyond the boundary of one of the great pottery yards is a means of access to the river, which goes by the name of a 'draw-dock.' A roadway runs down for some distance between two walls, parallel to the bank, and then, turning at a right angle, continues, under a double girder bridge of some 12 to 14 feet span in each aperture, to the side of the stream. Communication is thus rendered possible between the river and the district behind the quay walls; but it is an accommodation of a very questionable, and, so to speak, unaccommodating, kind. Two great Thames lighters, if they could pass through the narrow openings of the draw-dock bridge, would choke up the whole of the roadway, or waterway, or whatever this hybrid slope may be called. And if the passage be intended to allow carts to descend to the river at low water, and amuse themselves in the mud, the plan does not seem to be eminently useful. For a means of drawing timber from the river the draw-dock would, no doubt, prove highly suitable, were it not for the right angle in its course, which would arrest the passage of any piece of timber but one of inconsiderable length. On the whole, therefore, it seems that the erection of this long quay wall must have inflicted a serious blow on the trade of the district which it bounds, a blow for which it does not attempt to offer any compensation.

Our Rambler heard that the inhabitants of this low-lying district had been subject to great inconvenience from floods, and that Father Thames was wont to enter their cellars, or even their kitchens, when he was a sheet or two in the wind, in a manner more familiar than welcome. A quay wall, combined with a proper regulation of the drainage, is no doubt a remedy for so serious an evil—obnoxious as it is to health no less than to comfort.

But such a river-wall as should fully answer the purpose of keeping out floods might be, at the same time, capable of utilisation as a continued wharf, or real quay. There is no absolute necessity that the road should immediately skirt the river. A line of communication was to be secured, existing interests were to be considered, and no doubt the simplest arrangement, and the one which involved the least purchase of land, and the least consideration of any kind, is that which has been adopted. But the construction of a true wharf-wall, to which lighters could moor, and on which they could load and unload, with, perhaps, the addition of a long timber gridiron or cradle for their support at low water, served by a parallel roadway, or by good lines of access to the street which runs parallel to the river between Lambeth and Vauxhall Bridges, would have been, it struck the Rambler, something far more suitable to the locality than the present very elegant esplanade.

The beauty of Mr. Bazalgette's wall does not suffer from the want of a foil. All persons whose ideas are hazy upon the subject of the picturesque should endeavour to clear them by paying a visit to the Lambeth Suspension Bridge. If the questions, sometimes keenly contended, as to the proper limit or boundary between the provinces of the engineer and of the architect could be decided by a single experiment, that is the one. Structural beauty, we are told, consists in the adaptation of the means to the end. That which does the duty required, at the least cost, is that which the engineer seeks. In some cases, indeed, while striving after economy, he has attained to actual beauty. Telford did so in his suspension bridge over the Menai Straits; Rennie did so not unfrequently; Brunel did so repeatedly. The masons of Gloucester and other cathedrals did so in their flying buttresses and in many other of those graceful problems wrought out in stone; William Rufus did so, in the rafters of his Hall. And there is a school, or at all events there are professors, who tell us that the two things are one, or, at all events, if we can attain one we may wisely contemn the other. Let us have what is cheap! It is sure to be beautiful enough for us; or, if not, what signifies? Engineers do not build to please the eye, but to earn dividends.

A visit to the naked, bald, unmitigated hideousness of Lambeth Suspension Bridge will afford a mute but irresistible reply to all such preaching. It is, no doubt, very cheap and very convenient. The substantial cylinders, plunged in pairs to support the piers, or towers, or whatever the odious coffins set up on end that carry the chains are called, are workmanlike and well set. Economy is written in the largest letters over every detail of the work, and so is UGLINESS. One feels the poorer, the meaner, the worse, for looking at the structure. One shudders to pass under it. How it feels to go over it the Rambler had not the courage to try. Not only is it hideous in itself, but it is the cause of hideousness in every portion of the landscape of which it forms a part. Coming down the stream from Vauxhall, one of the finest views in any city in the world is obliterated and spoiled until this grim barrier is passed. Look down a full Thames towards Westminster. Northward, the gilded pinnacles soar towards heaven; to the right the white granite wall of the southern shore glitters in the sun; the light and graceful arches of Westminster Bridge span the water with the happiest effect—all in vain; so long as those rigid, shapeless bars, that trunk tucked up under the roadway, that everywhere obtrusive, everywhere offensive, utterly tasteless,



bundle of rods stretches across the view, you have no eyes for anything else. Pass Mr. Barlow's engineering triumph, and a nightmare seems removed from the breast, and the scene opens on your relieved vision with a beauty that is magical.

The Northern Embankment of the Thames is a scheme which has had the advantage of being discussed for some forty years at least. Sir Christopher Wren planned it. The imagination of Martin the painter was kindled by the desire to realise in London some of the noble architectural features of his cloud-built cities. The veteran James Walker prepared a plan for the Corporation. Mr. Page brought forward a design of his own. Thus before the frontage line was decided on by Act of Parliament, and the construction of the Embankment was committed to the Metropolitan Board of Works in 1862, the subject had received the full attention of competent advisers. The state of the river bank in the very centre of so populous a part of London, the need of relieving the over-charged traffic of the Strand, the gaining in time, in distance, and in health, which the passenger from Westminster to Blackfriars would receive by the use of the embanked road—and the reclamation of about 37 acres of land from the bed of the river—all these concurrent reasons appear amply sufficient to justify the occupation of the Middlesex shore by the northern quay wall.

The line of, and the scheme for, the Embankment on the southern side of the Thames, originated with the Metropolitan Board of Works. The Act of Parliament for its construction was obtained in 1863. The amount of time and consideration which could have been devoted to the subject, within the brief period of a year from the authorisation of the northern wall, appears ridiculously small when compared to the long and repeated study bestowed on the northern plan. We trust it may not prove a case of 'more haste, worse speed!' The shoal of barges that cluster round any accessible spot west of the present termination of the river wall; the foundations of wharves and piers which are now being removed from the bed of the Thames far to the outside of the new line of frontage; and the naked state, so far as river wharfage is concerned, of the 1666 yards now fronted with granite, did not seem, to our Rambler, to testify to the wisdom of the Metropolitan Board of Works. The value of the reclaimed land, on the Middlesex shore, is a gain equal to some three-fourths of the cost of the Embankment. On the southern side more land is given up to the Thames than is gained from it, and the whole 309,000*l.* appears to be an uncompensated outlay. It is a great cost for a new road through a locality that by no means appeared imperatively to need one. Why this road should have been constructed so as to shut out commerce from the Thames we are at a loss to understand.

As an architectural embellishment of a previously poor and squalid locality, the Southern Embankment wall has unquestionable merit. The direction of its line of strike with regard to the position of the sun in the heavens (during those hours when Londoners are aware of the existence of sunlight) is probably the reason why the mouldings and other details of this wall look so much bolder than do those of its Middlesex pendent. The section is, so far as the Rambler could ascertain, identical, but it requires actual measurement to convince one of the fact. In each instance, however, may be regretted the absence of a boldly projecting string-course, which would at the same time have given the great pictorial element of shadow, in which the elevation of the work is deficient; and have allowed the gain of at least a foot in width, over the entire length of quays, by avoiding the present set back from the upper part of the curved retaining wall, to the face of the parapet. The gain, indeed, would only have amounted to rather more than a quarter of an acre, but even the modest sum of five thousand pounds is not to be despised, when it can be earned without any cost but that of a little forethought.

The long unbroken structure of the Lambeth wall is another feature which it possesses, that renders it more admirable, architecturally speaking, than its opposite brother. The huge piles of granite that beset the staircases necessary for the service of the river traffic, on the Strand Embankment, contrast, to their own disadvantage, with the greater simplicity of the Lambeth quay. Looking at the great engineering merit of Mr. Bazalgette's work, and at the questionable character, to use the more courteous phrase, of certain of its architectural details, we are reminded of a book written, in the French language, by an able French author, but containing English quotations. Our readers who are familiar with French literature know how such quotations usually make their appearance. If the Lambeth Suspension Bridge could only be removed or replaced, the effect of this long, white, regular line of gently curving wall would be one of a simplicity approaching to grandeur.

The engineering effect of the Lambeth wall on the river will be to increase its scour. A large area is offered to the incoming tide. The old bank, which is now being excavated at low water, filled into barges, and sent down the Thames to be used as ballast, ran out in one part as much as fifty yards beyond the present shore line, defined by the quay. At the lower end, on the other hand, the water-way is contracted; and here the substitution of the sheer unbroken wall for the old sloping banks will allow of the more rapid rush of that larger body of water for which the upper enlargement of the width of the Thames will make room. There can be little doubt that the tendency of the recent works on the river, considered as a system, the contraction of the water-ways between Blackfriars and Westminster by some thirty-seven acres, the substitution of vertical banks for the old broken flats, the repeated narrowing of the actual channel by the piers and

cylinders of so many new bridges, will be to induce the current to burrow deeper in its bed. Thames, with a full tide and an easterly wind, will flow higher than it could have done while choked by the narrow water-way of Old London Bridge. Thames, lined by retaining walls, and vexed by repeated bridges, will be engaged in a constant effort to deepen his channel. We are far from having heard the last of this result of our recent engineering.

## THE INSTITUTE OF PAINTERS IN WATER COLOURS.

IT may be fairly said of this Society—if we are to judge from the standard of excellence reached in the present and recent Exhibitions—that it has avoided the fate of many other junior Art Societies, which, taking a confessedly second-rate position in the limner's world, become a refuge for those artists whose works are rejected elsewhere. It cannot indeed boast of a Burton, a Boyce, or a Burne Jones. The several specialities of art which are associated with such names as those of Frederick Taylor, Carl Haag, Alfred Hunt, and Basil Bradley, may be unrepresented on its walls. But, happily for that diversity of taste which exists and which always will exist among British painters and their patrons, it does include in its list of members many whose fame rests not more securely on the individual excellence of their work than on the peculiar character of subject, which by a sort of prescriptive right they have made their own. First and foremost among these subjects may be reckoned the pictorial treatment of architecture, which, since the death of David Roberts, might have fallen into desuetude but for the exertions of Louis Haghe, Carl Werner, S. Prout, G. Simonau, W. Deane and others, whose works have long been identified with the Exhibition at this Gallery.

In the first page of the catalogue we find the title of a spirited and powerful work by Haghe, viz.: 'The Transept of Tournay Cathedral' (4), deftly drawn and coloured. The splendid chancel screen, rich in marble and carved panels, forms a prominent and effective feature in this view, while the picturesque crowd of ecclesiastics and peasants below is grouped with all the knowledge of a painter who has attained the secret of making his figures subservient to the purpose of architectural effect, without forgetting the interest derived from their costume and action.

The 'Interior of All Saints' Church, Margaret Street' (8), by John Chase, is, from the glaring freshness of its local colour, a far less thankful subject; and though the painter has taken what most artists would consider a fair license in subduing the crudity of certain hues, he has failed to give pictorial interest to the scene. Much of the execution is undeniably *painty*. The brass work fittings, for example, are represented by pure yellow, with little or no gradation of tint or suggestion of metallic sheen, while the drawing of carved work—especially in the capitals—betrays an ignorance of *motive* in architectural detail which is fatal to the picture.

With a word of praise to Mr. Harry Johnson's 'Granada and the Alhambra' (10), we must pass on to Mr. W. Deane's 'Interior of San Francisco, Assisi' (31), the very name of which recalls the highest sense of beauty which we can associate with grand simplicity of architectural forms, and delicate, well-toned hues of surface decoration. There is much that is tender and well-intentioned in this work, but unfortunately Mr. Deane wants practice in figure-drawing, and to this fact, taken in conjunction with an apparent indecision as to which portion of his subject should be defined and which generalised, may be attributed an appearance of weakness—the worst fault of his drawings.

Whatever may be the shortcomings of Mr. Haghe, want of force is a charge which cannot be brought against his interior of 'St. George's Chapel, Windsor' (37), where the Burial of King Charles the First is introduced by way of giving historical interest to the scene. We might, indeed, have spared some of the stern rigidity with which the minuter details of the elaborate stall canopies are mapped out, but, with that single drawback, every portion of this remarkable work is all that could be wished. The incident of the burial itself is full of dramatic power, and the clever group of Royalist figures in the fore-ground—watching half-mournfully and half-indignantly the obsequies of their lamented King—lends powerful aid to the composition. It is, perhaps, unfortunate for Mr. Skinner Prout that he bears a surname which was once associated with the best productions of English art in the pictorial representation of architecture, and we say this in no disparagement of his own work, which is often excellent, but because people *will* draw comparisons, especially when, as in the present instance, something in the choice of subject or method of treatment suggests what may be, after all, an unconscious plagiarism. It is well known that the elder Prout made no scruple of exaggerating on his paper those effects of time and weather which have generally more charm for the painter's eye than the refinements and proprieties of architectural detail. This license—call it fault or virtue as we may—his relative certainly perpetuates. It is impossible to examine his views at Abbeville (21), Rouen (42), Vire (55), without feeling this tendency in the artist to prettify and make a scene of his subject. They are all, however, excessively clever drawings, full of that dash in execution and play of colour which are sure to make such works attractive, and far more attractive than the result of more conscientious adherence to fact in representation.

Mr. Carl Werner's delineation of architecture is, in regard to accuracy of form and scrupulous fidelity of detail, absolutely faultless; but we cannot accept his colour as equally true to nature's key. Whether it be that in the latter case his perceptive faculties are less keen, whether he lacks as a painter the extraordinary power of execution which he certainly possesses as a draughtsman, or whether he wittingly and with definite purpose avoids the subtleties of blended and superimposed tints, we cannot say; but it is remarkable that while his studies have all the startling reality of a photograph, there is a uniform smoothness of tint in his treatment of local colour which is suggestive of printed work. This peculiarity is more than usually apparent in his view of the 'Entrance of the Citadel at Cairo'

(204), which presents an otherwise perfect picture—not only of the interesting structure which gives it title, but (by the addition of a crowd of well-studied figures) of Arabic street life. The Château de Chillon (71), with Bonnard conducted as a prisoner to the fortress by the soldiers of the Duc de Savoie, is an excellent composition, full of beauty, whether we regard it as a landscape or an architectural study; though here again we must submit that the colour of the lake and distant hills has an unfortunate tendency to *prettiness* not worthy of the artist's brush.

Of Mr. Werner's 'Memmons at Thebes during the Inundation of the Nile' (92) it is scarcely too much to say that, however much opinions may differ as to the method of his work, this extraordinary drawing could have been produced by no other water-colour painter in England. It embraces a double effect of light, the greater portion of the scene being steeped in full moonshine, while a fire lighted by a group of natives between the colossal and half-defaced figures casts a flickering glare on each. The first impression produced—let us honestly confess it—is one of intense truth in representation; and it is, perhaps, only the exceptional conditions of effect, coupled with the fact that it must have been to a great extent studied from memory, which leads one first to examine more closely, and afterwards to doubt whether this drawing is, after all, so literal a transcript of nature as a casual observer would certainly take it to be.

The same painter's studies of Oriental life, 'A Barber's House at Cairo' (138), and 'A Tailor's Shop at Damascus' (276), will be examined with pleasure by those to whom incident in pictorial art is of more importance than the impress of individual handiwork and feeling, and it must be remembered that a large majority of amateurs belong to this class.

The architectural subjects selected for illustration by Mr. G. Simonau, a Brussels artist, differ not more widely from those which we have just mentioned than their broad, bold handling does from the scrupulous neatness of Mr. Werner's execution. Under the title of a 'Bridge on the Nahe at Creuznach' (170), Mr. Simonau introduces us to one of those dreary half-dismantled 'back settlements' of an old German town, in which no one but a painter would tarry for five minutes, and in which half the picturesque interest depends on poverty and dilapidation. The crumbling plaster and neglected roofs—the ducks paddling in the lazy stream, over which women stoop to wash their dirty linen—do not sound cheerful materials for picture-making, and yet this is a noble drawing, limned and coloured by a master hand. Let us compare it with the pretentious struggle for architectural effect and magnificence of costume embodied in Mr. Deane's 'Festa of the Corpus Domini, Venice' (169), which hangs immediately above, false in colour and feeble in drawing; and we can but repeat the old truism that, after all, it is not the subject, but what a painter does with it, which constitutes a real work of art. Mr. Simonau also sends the view, 'A Street in Limburg' (145), another artistic and powerful work.

We must now turn to some of the more important landscapes and figure-pieces in the exhibition. Among the former, Mr. Edmund G. Warren exhibits a wonderfully realistic study from nature, the subject being the skirts of a wood in the full bloom of summer, with chequered light gleaming through the thick foliage and falling with startling reality on the foreground and middle distance. Here every detail is made out with extraordinary care—ferns, foliage, beech trunks, deer—all individually true to fact, but without obtrusion, and in perfect harmony. Such a work is at once an honour to, and characteristic of, its age, for in no other age has this literal rendering of landscape been achieved or even attempted in such degree; and here a serious question presents itself in connection with Mr. Warren's work, viz., as to whether it will last. Here is a landscape painted almost entirely in body colour—a material of whose permanent endurance we can certainly not yet judge, seeing that its present use is a comparatively modern innovation. We trust, for the sake of posterity, that such drawings may stand the test of time.

Mr. Kilburne's opening scene in Enoch Arden (207)—the boy and girl lovers sitting on the rocks in close converse, while Philip stands moodily apart, watching them—is admirably conceived and executed. Such a subject, in the hands of a commonplace artist, would assuredly have degenerated into affectation or vulgarity. But the chief charm of this picture is, that while Mr. Kilburne has invested the expression of his children with genuine sentiment, he has lost none of the simplicity of childhood in their features. Let us add of the accessories to this group—rock, sea, and sky—that they are equally worthy of the artist's brush.

'The Doubtful Coin' (45), by Mr. H. B. Roberts, is but a new name for a typical scene with which, under the title of the 'Rent Day,' &c., most of us have been long familiar. We recognise at once the conventional landlord or rent-collector, stern and uncompromising in expression, with his right-hand man or bailiff, half grim, half comical, in his yellow waistcoat and spectacles—the stagey tenant, in his traditional cloak—the parchment deeds and other 'properties' spread about the table, after the regular and approved fashion. This class of art is sure to find admirers in the mixed crowd of Exhibition loungers, and, what is more, rarely fails to fetch its price. But, with the exception of a certain cleverness in execution, it has little attraction for educated taste.

We have only space to mention a few other of the most notable works in this Gallery, viz.:—'My Grandfather's Choice' (16), an effective and characteristic old-world study, by Corbould; Mr. Green's 'Persuasion' (22), a *genre* picture, of some merit; the 'Faust and Marguerite' (163), chiefly remarkable for its original treatment of a hackneyed theme, by Mr. J. D. Linton, who also sends two other works, 'Squire Thornhill and Olivia' (245), and 'The Connoisseurs' (252), and two historical pictures widely different in aim, sentiment, and mode of execution, but each praiseworthy after its kind—L. Haghe's 'Cromwell on the Morning of the Battle of Naseby' (93), and Corbould's 'Joan of Arc' (63).

Upwards of 100 gold coins, some of them belonging to the reign of Henry VIII., were recently discovered at Dunblane while an old house was being pulled down. The coins are in a good state of preservation. It is said that the value of the metal is about 80l.

## ON THE MOTTO OF THE ACADEMY CATALOGUE.

'If it be true,' says Rosalind, 'that good wine needs no bush, 'tis true that a good play needs no epilogue; yet to good wine they do use good bushes, and good plays prove the better by the help of good epilogues;' and we may presume to extend her argument by adding, that good books of all kinds prove the better by the help of good mottoes. This is hardly the place to enquire into the origin of mottoes on title-pages, however interesting the subject might be, or to discuss the purposes they are supposed to subserve. There is evidence enough of the extent to which they continue to be adopted, in books of all kinds, from the 'Modern Painters' to the 'Tuscan Catalogue.' Whatever may be its value, the custom of using them is a good old-fashioned one, and deserves to be commended, as amongst other ends, it sometimes suggests to the reader the spirit in which it is wished that a book should be read, or the subject be regarded, and sometimes the spirit in which the author professes to have written.

There was nothing unusual in the first Catalogue of the Royal Academy, published in 1769, bearing a motto on the title-page, and it was hardly surprising that it should be in Latin:—

Major rerum mihi nascitur ordo.

The Academy's Professor in Ancient Literature, Dr. Samuel Johnson, considered English words unworthy to form the epitaph on an English writer in an English church, so it would be strange if at such a time the infant Academy lisped in English. The interest of the public in the early exhibitions was therefore solicited for the title-pages of the succeeding catalogues by Pliny, Cicero, Livy, Horace, Quintilian, Publius Syrus (the patron of the *Edinburgh Review*, although none of the founders ever read any of his works), Martial, Ovid, Seneca, Ariosto, Epicharmus, Valerius Patereulus, Pindar, Homer, and Philostratus. If the first Professor in Ancient History, Oliver Goldsmith, M.B., had lived long enough, one can fancy him suggesting that his erudite friend, Ephraim Jenkinson, might be allowed to grace the catalogue with some of the opinions broached by Sanchoniathon, Manetho, Berossus, and Ocellus Lucanus, for the apophthegms with which that gentleman confounded Dr. Primrose have almost as much reference to painting, sculpture, and architecture, as some that might be taken from the Academy's favourites.

For forty-three years no English writer was considered eligible to supply a sentence for one of the title-pages. In 1812, however, the Academy had the hardihood to take a few lines from the 'Winter's Tale,' and with all due respect for those very pretty fellows Epicharmus and Valerius Patereulus, the English motto appears to be quite as appropriate as theirs; indeed it seems to us to indicate one relation of art more subtly than all the previous mottoes combined, or than many a ponderous discourse subsequently delivered in the Academy and elsewhere. It is from the well-known speech of Polixenes to Perdita, and this is how it appeared:—

Nature is made better by no mean  
But nature makes that mean; so o'er that art  
Which . . . adds to nature, is an art  
That nature makes.  
The art itself is nature.

Observe how neatly it was trimmed, before it was served up. In 1853 the same quotation is made, but copied more truly, and this is all, it would appear, that it is possible to discover in Shakespeare during a whole century, in any way fitted for the compilers' purposes.

Shakespeare was succeeded by the Classics (the learned Benjamin West was President) until 1817, when another English motto appeared; this time it was taken from the Report of the Parliamentary Committee on the Elgin Marbles, and it is equally deserving of attention by the Parliament now sitting:—

Your Committee cannot but submit to the attentive reflection of the House how highly the cultivation of the Fine Arts has contributed to the reputation, character, and dignity of every Government by which they have been encouraged, and how intimately they are connected with the advancement of everything valuable in Science, Literature, and Philosophy.

In 1819, and again in 1852 (good English mottoes are supposed to be scarce, therefore there must be thrift in using them), Bacon was allowed to supply the sentence:—

Painting raises the mind by accommodating the images of things to our desires.

Then, until 1827, Greeks, Romans, and Michael Angelo were the chosen ones, when what Dr. Johnson said of dramatic imitations was applied to painting and sculpture:—

Imitations produce pain or pleasure not because they are mistaken for reality, but because they bring realities to the mind.

Not a very deep remark, perhaps, but there are worse in Latin; and such as it is, it served again in 1844. In 1830 there was an extract from an old report of the British Institution, with which we are sure everyone will agree:—

We feel, however, no apprehension but that the spirit of the British artist will be awakened and invigorated whenever a free and fair scope shall be given to his talents, whenever he shall be stimulated by the same patronage as that which raised and rewarded the Italian and Grecian masters.

In 1833 Adam Smith's 'Theory of the Moral Sentiments' was the source from which the motto was taken, but it is rather long for quotation here. Sir Joshua's 'Discourses' were first thought of in 1836, and artists and visitors were reminded that

The value and rank of every art is in proportion to the mental labour employed in it, or the mental pleasure produced by it.

This motto answered also in 1861. In 1846 Sir Joshua was again honoured by being chosen, this time informing us that—

A passion for art and an eager desire to excel will more than supply the place of method.

And the somewhat eclectic motto for 1862—

We must be contented to make up our idea of perfection from the excellences that are dispersed over the world,

was taken from Sir Joshua's 'Tour.'

In 1839 the motto was from Wood's 'Essay on Homer,'—

We consider nature but transiently till the poet or painter awake our attention and send us back to life with a new curiosity, which we owe entirely to the copies that lay before us.

The President, Sir Martin Shee, furnished the motto for 1847, which says, in the true Academy style—

To nature still we must look, through the productions of the great masters, and consider even the best works of antiquity but as the telescopes of taste to mend our vision, not to bound our view.

For 1848 a characteristic sentence was taken from Hogarth:—

True art can only be learned in one school, and that school is kept by nature.

Pope, in 1850, shrewdly says:—

Art is like a prudent steward that lives on managing the riches of nature.

And in 1851, the Great Exhibition year, the capital motto,  
The pencil speaks the tongue of every land,

is from glorious John Dryden, and is a model of what a motto ought to be—short, vigorous, and appropriate.

For 1854 this familiar couplet was taken from Pope:—

Nature, like liberty, is but restrained  
By the same laws which first herself ordained.

With the addition of the two preceding lines, it was used again in 1865.

It is hardly necessary, perhaps, to give the later English mottoes, but we do so to make our selection complete. In 1866, the year after his death, the fine motto was from Sir Charles Eastlake:—

Beauty in all its highest forms is calculated to impress on human beings the belief in a perfection greater than the world contains.

In 1867 it was from Sir Thomas Brown:—

I call the effects of nature the works of God, whose hand and instrument she only is. Nature is not at variance with art, nor art with nature, they being both servants of His providence.

And last year's was from Isaac Disraeli:—

The poet and the painter are only truly great by the mutual influence of their studies. Milton, Michael Angelo, and Handel belong to the same order of minds; the same imaginative power and the same sensibility are only operating with different materials.

To sum up the results: in a hundred years the Academy Catalogues have eighteen mottoes in English. If we exclude those from painters and from official reports, we have ten sentences to represent all the allusions or sentiments that in any way relate to art in the richest and noblest literature in the world. There are seventeen mottoes from Cicero (almost as many as from all England), and not one word from Edmund Burke, of whom such a judge of ancient and modern literature as Thomas De Quincey could say, 'that for the intellectual qualities of eloquence, in the fineness of understanding, in depth and in large compass of thought, he far surpassed any orator ancient or modern.' It cannot be possible the Academy Authorities know so little of English poetry, that one garbled sentence from Shakespeare, four lines from Pope, and one from Dryden, are all they can discover suitable for so simple a purpose. An ordinary school-boy ought to be able to find a hundred sentences from a hundred English authors in every way appropriate.

It does not matter much in what language the motto of the Catalogue is expressed, as a large number of the visitors probably never look at it. Even if there were no motto, its loss would not be minded, for the paintings would be likely to be of the same character, and would meet with as much appreciation as if the title was nearly covered with the best sentences in any language. But if such things are to be used, our own language answers all purposes as well as any dead or living language. Why should another tongue be adopted rather than ours? English words are as fair, they become our mouths as well, and if they are conjured with, they will fill the Academy treasury with shillings as quickly as any other words can. The English mottoes we have taken will compare favourably with the remainder in other languages; and remembering this, we must regret the want of national spirit by which it has happened that so small a proportion are home made.

Since the present President attained his high office, none but English mottoes were adopted until this year. We had hopes that we saw the last of the classical mottoes until those in English were exhausted. We were disappointed, however, at finding on the Catalogue just issued the words

*Labor et ingenuum.*

There are some words for which corresponding and equivalent terms may not be found in other languages. But it is not so in this case. It would have been easy to represent the ideas as truly by familiar English words as by Latin words. Neither is the motto a sentence that can be ascribed to any 'classical' author for its origin, it denotes no great research on the part of whoever suggested it, nor is it easy to see the advantage it gives to the Academy or to the visitors. It is merely the latest example of an absurd fashion which the Academy has too long followed.

## PARIS ANNUAL EXHIBITION OF WORKS OF ART.

THE doors of the *Salon* in the Champs Elysées were thrown open on the morning of May 1, and ten thousand visitors went to take a first glance at a collection of nearly five thousand works of art. The growth of the Paris *Salon*, or exhibition, is marvellous; in the year 1853, the catalogue of which is before us, the number of entries was 1,768, this year it is 4,230. The number of oil paintings is 2,452, and this is not so large as that of last year.

The possession of a permanent place of exhibition enables our neighbours to find room for everything, and to put it where it can be seen, and they could still do so even if the extent of the collection were twice as large as it is, which is certainly not to be desired. As to the management of the light, the method adopted in the French galleries at the Universal Exhibition—namely, that of covering the glass roof with thin unbleached cotton, and then suspending a semi-transparent false ceiling or canopy in the centre of the room, at about the height of the top line of the pictures—

seems to be definitely adopted, and to give general satisfaction. The fact that such a number of paintings as are contained in the fifteen great rooms devoted to oil paintings should all have sufficient and not too much light is one which well deserves notice and the attention of artists of every class as well as managers of public institutions; and being produced by the simplest possible means gives additional value to the achievement.

The sculpture is placed in the central area of the building, which is laid out as a geometric garden and charmingly decorated by the Horticultural Society, whose spring exhibition will be held here during the current month, the larger pieces being placed in the central and transverse avenues, and the rest against the sides and ends, which are draped with dark neutral-tinted calico. This placing of sculpture amongst vegetables, as certain carping critics expressed it, is, on the whole, eminently successful; every work is sufficiently isolated and can be viewed from all sides, while the large expanse of the area keeps the air fresh and the senses of the visitor un-fatigued. The superiority of this to the gallery system was triumphantly proved when on two occasions lately the works of the sculptors were exhibited in the lower side aisles of the building. In 1867, when much of the French sculpture was shown in the enclosed central garden, it was almost universally admitted that the glare of unshaded light was injurious to the effect of the more delicate works. Notwithstanding the central roof-covering of unbleached cotton referred to, the mass of light is too great for delicate sculpture in white marble, and probably it would be well on some future occasion to try the effect of a *velum* or canopy suspended at a moderate distance from the ground, or else to place a slight screen over the smaller groups and statues which occupy the sides and ends of the garden. As many English artists and amateurs are in the habit of visiting the Paris *Salon*, we think it well to draw attention to this important subject of the lighting of works of art, which may here be studied on a large scale.

The Emperor's grand prize of a hundred thousand francs has had a bad effect on the exhibition of paintings; there is an unusual number of large canvasses which, in spite of great technical ability and a very marked improvement in colour and—in general—admirable drawing, only prove the absence of historical, religious, and high poetic art. Every attempt to reach either of these pinnacles must, we fear, be pronounced a lamentable failure, and we deeply lament that such is the case, for in the fine arts every great achievement is a benefit and a stimulus for the whole civilised world.

There is one large work, not painted with a view to the great prize, which occupies the most prominent place in the central room of the exhibition, and deserves special notice; it is a painting of immense size, for a concert room connected with the new Grand Theatre of Bordeaux, by M. Bouguereau; the subject, Apollo in Olympus. The brilliant god is playing before Jove and all the assembled divinities. The composition of this work is wanting in keeping; Jove is wanting in grandeur, Apollo in importance as the central figure, Venus and the Graces in beauty; but there is a large amount of fine, bold, and careful drawing in the figures of Mercury and others in the foreground, especially valuable in a decorative work of such magnitude. A school which can produce such drawing as is here seen only wants a little more sentiment to place it in the first rank.

It would be unfair to speak generally of two thousand easel pictures in a few short lines, but we may just indicate the remaining contents of the great central room in which most of the gems are placed. Muller has a really fine historical work—a worthy pendant to his famous 'Last Days of the Reign of Terror'—representing the struggle between Lanjuinais and the savages of the Convention on June 2, 1793. The scene wants the sad charm of the former, the passion exhibited is all of one kind; but the work is that of a master, and the most remarkable that we have yet found in the exhibition.

A picture by Fromentin, representing Algerian Arabs performing a military fantasia, occupies the place of honour on the lower line, and is a brilliant work, full of life and colour; the central figure, a fierce old soldier, who seems to have excited both himself and his horse to madness, is very remarkable; in fact, the whole composition, drawing, and colouring of the work reflect the highest credit on the artist.

The most noticeable amongst the remaining works are two military subjects by Protais, showing no advance on the part of this artist; landscapes by the late Paul Huet, d'Aubigny, Nazon, and Français; a bit of remarkable Alpine scenery by Gustave Doré, who this year exhibits two works of the same class; and a charming study beneath the beeches in Burnham Wood, by our countryman, MacCallum. We should like to see this clever artist extend his horizon a little, but admire his observation, his truthfulness, and his effects, whether of gnarled roots, crumbling banks, or sunny glows. We must not omit to mention one of Blaise Desgoffe's marvellous pictures of *objets d'art*, flowers, and tissues; and exquisite fruit-pieces—ripe plums and apricots lying on a mossy bank—by M. Maisiat of Lyons.

We must dismiss the sculpture for the moment, with the simple mention of a few of the most prominent works. A statue of Mdlle. Nilsson, as Ophelia, by M. Falguière; Despair, by M. Perraud; Narcissus, by M. Hiolle; the Woman taken in Adultery, by M. Cambos; and a statue of Cleopatra before Cæsar, by M. Clésinger, an elaborate example of composite statuary, tinted marble loaded with enamelled work and jewellery.

In the Architectural section there are upwards of ninety exhibitors, but the names and numbers were not in order on the opening day. There seems to be a paucity of designs for great buildings, but a good many churches, and some important restorations proposed or executed. We are sorry to find only one English name in this section.

**Fire at Plymouth.**—A fire broke out on Sunday morning (the 9th) in the large steam biscuit factory of Messrs. Dawe & Serpell, Commercial Road, Plymouth. The whole of the buildings and their contents were destroyed. The premises were formerly part of the Government Lambhay Victualling Yard, where the men-of-war were victualled from before the erection of the Royal William Victualling Yard, Stonehouse.



## SOUTH STAFFORDSHIRE INDUSTRIAL AND FINE ARTS EXHIBITION.

ON last Tuesday the South Staffordshire Industrial and Fine Arts Exhibition was opened by Lord Granville in the hall which has been erected for the purpose in the grounds attached to Molineux House, Wolverhampton. The building, which is of iron and glass, forms a central nave 150 feet long by 60 feet in width, and 18 feet high at the spring of the roof, which is semi-octagonal, and rises to a height of 45 feet from the floor. Around the building is a Fine Arts Gallery, containing nearly 800 oil and water-colour paintings. The objects of industry exhibited are placed on the floor and outside the building. The Executive Committee, in their address to Lord Granville, said the first idea of this undertaking was conceived about a year ago by a few persons who were much interested in promoting the welfare of the Wolverhampton School of Practical Art and of the South Staffordshire Educational Association. Both these institutions were much in need of funds to increase their utility; and a proposal was made that any surplus derived from the proceeds of the exhibition should be divided between them. It was felt, too, that the great importance and variety of the manufactured products of South Staffordshire and East Worcestershire had never hitherto been fully shown by collecting them in one place, and that the proposal to supply this want by a local industrial exhibition, supplemented by fine arts and natural history collections, could not fail to excite widespread interest, and benefit all classes in the district. The address went on to show how, with these objects in view, the building had been erected. Three acres of pleasure ground had been secured around it, and a list of 200 guarantors obtained. It stated that the industrial exhibitors numbered upwards of 130, and the contributors of art treasures more than 120. The committee then acknowledged the kindness of Her Majesty in lending the Abyssinian trophies; of the Kensington Museum managers in sending specimens of metal work, water-colour drawings, &c.; and of the Secretary for India in contributing objects from the East Indian Collections.

Lord Granville stood upon a dais (surrounded by Lord Lichfield, Lord Wrottesley, the Bishop of Lichfield, Sir Smith Child, M.P., Mr. M. Ingram, M.P., Mr. Villiers, M.P., Mr. Weguelin, M.P., the Mayors of Wolverhampton, Birmingham, Worcester, and Kidderminster, and many others), while the address was read by Mr. N. N. Solly, J.P., Vice-Chairman of the Executive Committee. In responding, he spoke of his having fifteen years ago laid the foundation stone of the School of Art in that town, a town with which in early times his family had been connected, and in the chief industries of which he was himself immediately interested. It was a high distinction for the district that they should have been among the first to erect a building specially for the purposes of promoting industrial art. The address spoke of a surplus. His experience since the first exhibition was that if the promoters made two ends meet they deemed themselves fortunate. As, however, the committee here, who aspired so high as to look for a surplus, were men of business, he supposed and trusted it would be secured. His Lordship praised what he saw around, speaking with especial pleasure of the building, and the chasteness of its decoration. It was no slight praise to the contractors that it should have been delivered up complete on the day promised. What was exhibited in the hall could not but prove highly instructive to all who saw it. Fifty years ago no thought was given to the education of the operative, and twenty-five years ago it would have been thought unnecessary to educate him beyond the immediate range of his calling. But now that we had rivals in other countries, our industry, if it was to be successful in its competition with that of other nations, must be educated, and the education must extend, not to the men only, but also to the masters. Referring to the committee's acknowledgment of the Queen's contributions, the noble Earl spoke of Her Majesty's unabated desire to promote that which was at once most dear to herself and to her late Consort, the industrial and art education of her people.

After the ceremony, his Lordship was entertained at luncheon in the Exchange.

The architect and designing decorator of the Exhibition Hall was Mr. Bidlake, of Wolverhampton, and the contractors were Messrs. Clarke & Co., of the same town.

## NEW CONSERVATIVE CLUB HOUSE.

THE new Junior Carlton Club is from the designs of Mr. Brandon, and has been erected by Messrs. Lucas Brothers, at a contract cost of about 40,000*l.* The principal front is in Pall Mall, nearly opposite the old Carlton, and the other front in St. James's Square. The Pall Mall entrance is at one end of the building, as there was not sufficient space for the length of the rooms to run from front to back. Three storeys are shown externally, beside a basement. The ground storey has circular-headed windows, an entrance porch on rich and massive columns at the eastern end corresponding with a similar projection, containing a circular bay window at the western. The first floor storey is the site of the coffee-room, which runs along the entire length of the house, and presents nine windows, surmounted by richly carved circular pediments, resting on polished red granite shafts. The second floor has an equal number of square-headed windows with richly moulded architraves, above which is a panelled and carved frieze and cornice, the whole elevation being surmounted by a balustrade. With the exception of the granite columns to the first floor windows, the whole front is of wrought stone. The entrance hall is square, and the staircase entirely of stone, with heavy bronze balusters; a polished marble plinth extending to the second floor. The columns and pilasters in the hall, too, are of the same material, the floor being a tessellated pavement by Minton & Co. A smaller entrance hall gives access from St. James's Square, and contains another staircase. On this floor also are the reception room, morning room, and members' smoking-room. The grand coffee-room, before referred to, is 123 feet long, by 30 feet wide, and 20 feet in height: about 30 feet from the western end of it is a screen of Scagliola marble columns, beyond which is

the portion of the room allotted for strangers, and the length of which extends from front to back of the building. The walls and ceilings of these rooms are panelled, and richly moulded and ornamented. A handsome library looking on to the square occupies the remainder of this floor. On the second floor are—a strangers' smoking-room, two billiard-rooms, one to contain two tables, and the other one table, the Parliamentary library, a small card-room, old newspaper store, and offices, and private apartments for the secretary and assistant-secretary of the club. Above this floor is an attic storey, devoted almost entirely to sleeping rooms for the servants, and provided with bath-rooms, and every requisite for them. Descending below the ground again we come first to a mezzanine basement, in which are sundry offices in connection with club business, but chiefly dressing-rooms for members. On the main basement is a vast kitchen, fitted with every appliance necessary for cooking on the most extensive scale, a proportionately sized scullery, housekeeper's, butler's, or still-rooms; several larders for different kinds of provisions, and extensive cellarage, with a lift provided especially for the lowering of wine from the street. There is lavatory accommodation on every floor; the bells throughout the house are rung by electricity; there is a hydraulic 'lift' for raising to each floor, and the latest improvements in heating and ventilating have been adopted. The building is fire-proof. The gas fittings and other metal works are provided by Messrs. Benham of Wigmore Street; and the upholstery is supplied by Messrs. Banting of St. James's Street.

## ARTISTS' GENERAL BENEVOLENT INSTITUTION.

THE Fifty-Fourth Annual Dinner of this Institution took place on the 18th instant, at Willis's Rooms, under the presidency of Lord John Manners.

The CHAIRMAN, in giving the toast of 'Success to the Institution,' observed that in some countries gratitude was shown towards those who embellished the forms of civilised life in various modes, and the claims of art were recognised by a generous State patronage. Such a course was not consonant with the habits and customs of England; but in this matter of assisting art, the Government of this country could claim credit for having done something by the installation of the Royal Academy in its new home at Burlington House. That measure of public support still, however, left to private individuals the duty of showing their gratitude to those who achieved these triumphs of art. It was with the reverses, wants, and sufferings of artists that this society, whose claims he advocated, occupied itself. During the last year the society had received eighty-one applications for assistance, and had distributed 1,432*l.* in grants for relief. Among the recipients of the relief afforded were representatives of several miniature painters. There were no collections in ancestral houses that were more interesting than miniatures. Their wonderful finish and brilliancy of colour, and the minute rendering of dresses and accessories, brought back to mind the qualities of the sovereigns, statesmen, and eminent men of the fifteenth, sixteenth, and seventeenth centuries. The great luminary of day, the sun, had, however, lately cast its shadow over this charming branch of art. That being so, and the sphere of the miniature painter becoming more contracted, it was the more incumbent upon individuals who derived pleasure from the contemplation of works of art to endeavour to meet the ever-widening circles of distress which these changes must produce. All the branches of art were subject to the countless vicissitudes of human life, and in the moment of suffering and despair this society offered its discriminating aid, respecting the sacred privacy of the artist's life and home, and administering with economy the funds which the benevolence of its subscribers had provided. A proposal had been made to found a college for providing education for the children of artists, and that plan would shortly be submitted for the consideration and support of the institution (cheers).

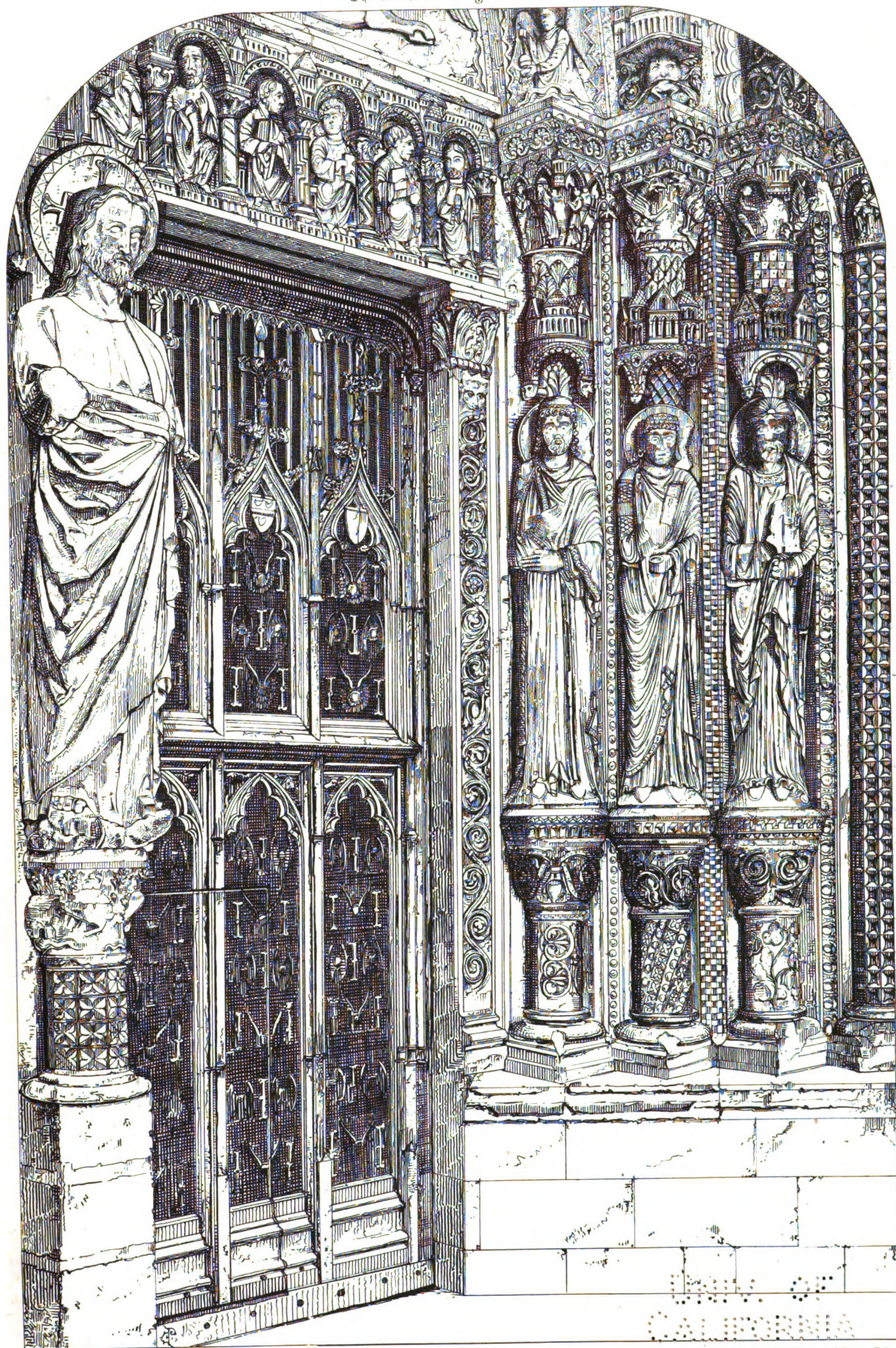
Sir F. GRANT, in replying to the toast of 'The Royal Academy,' made some interesting observations respecting the present exhibition. The committee's task this year had presented special difficulties, arising from their inexperience of the capabilities of the new building, but they hoped that next year, with increased knowledge and experience, they should be able to give still greater satisfaction. The first impression of the committee was that they would not have pictures enough to cover the walls, and it was not till a late moment that they became aware of the melancholy fact that they would be straitened for room; but the committee went to work with the most laborious zeal, and at length all the selected pictures were hung. They were immensely indebted to the energy of their architect, Mr. Smirke, who came to the rescue in what threatened to be a serious emergency, and in a couple of days, by employing a large number of workmen, had temporarily prepared the lecture-room so that it could be used for the purposes of the exhibition. But when all had been done, the committee, to their great sorrow, found themselves obliged to refuse some thirty or forty pictures whose merit was sufficient to make the committee anxious to have found room for them if possible, as forming part of the 4,600 works of art sent in. It was said, there was to be a supplementary exhibition. He begged to say, on the part of himself and colleagues, that he earnestly hoped it would obtain the greatest success.

Among other toasts, Mr. A. TROLLOPE proposed the various Societies in connection with Art, the Old and New Water-colour Exhibitions, the Dudley Gallery, and others, reminding his hearers that the Royal Academy was by no means the only exhibition in the metropolis in which the painter's art was represented.

To this fact the CHAIRMAN also bore testimony, observing that in the various exhibitions now open in London not less than 3,750 pictures were on view.

The subscriptions acknowledged during the evening reached the handsome figure of 1,617*l.*, a larger amount than is on record at any previous gathering of the friends of the institution.





Bourges Cathedral,  
DOOR WAY IN SOUTH PORCH.  
FROM A PHOTOGRAPH.

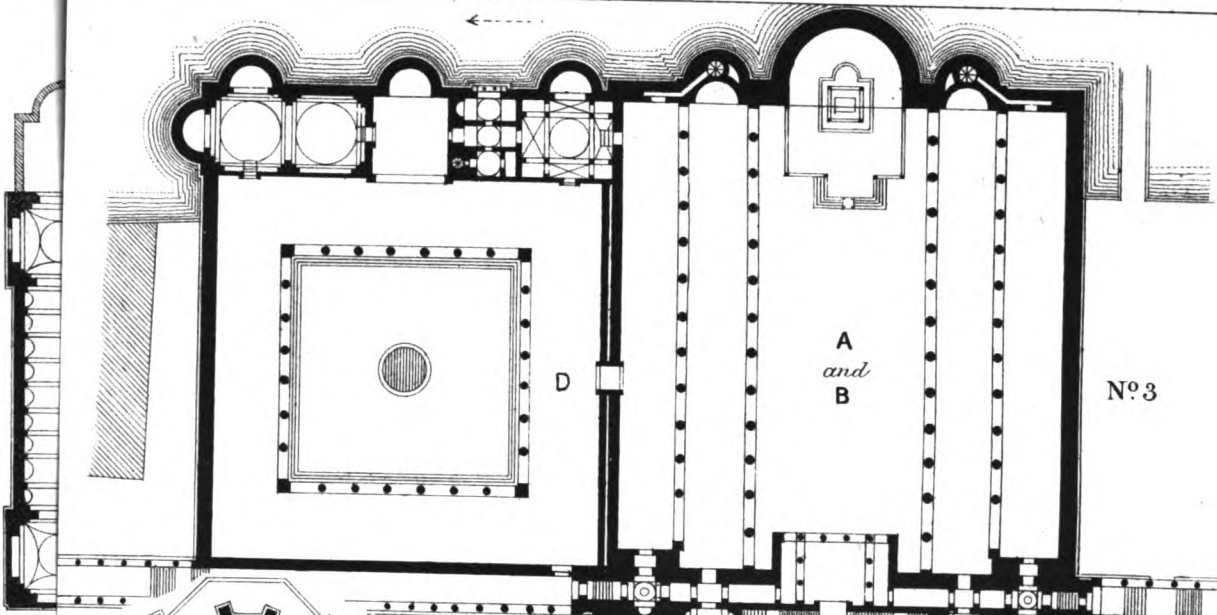
Engraved by W.W. Spangus & Co. London, E.C.



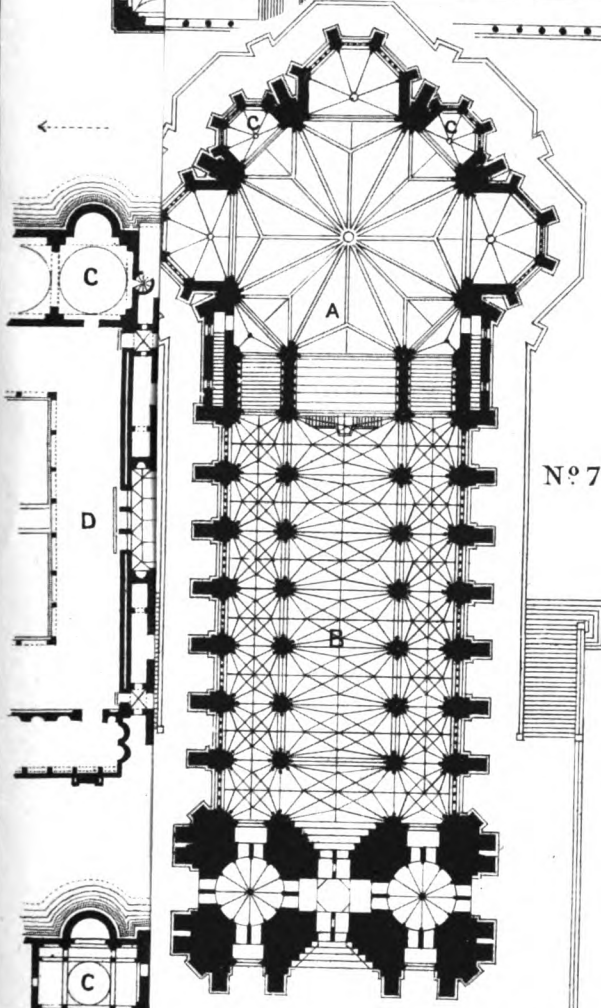
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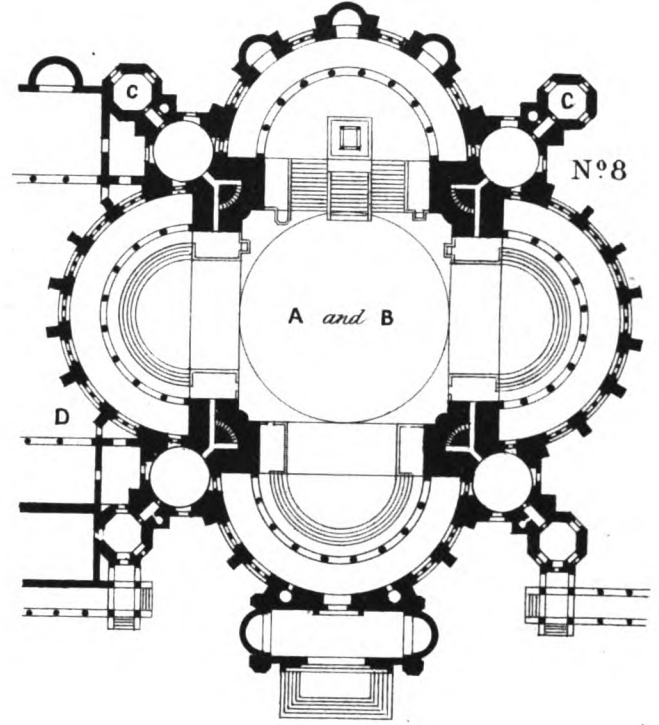
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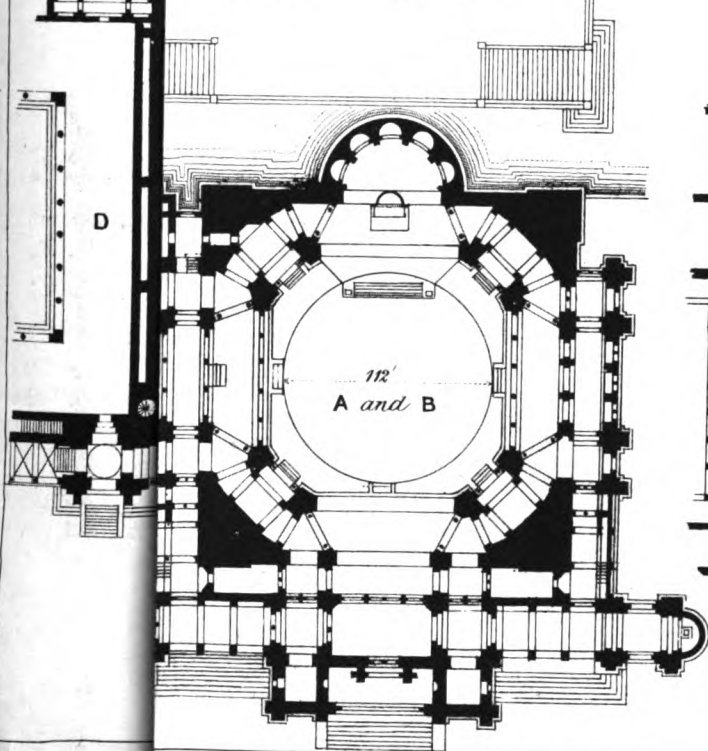
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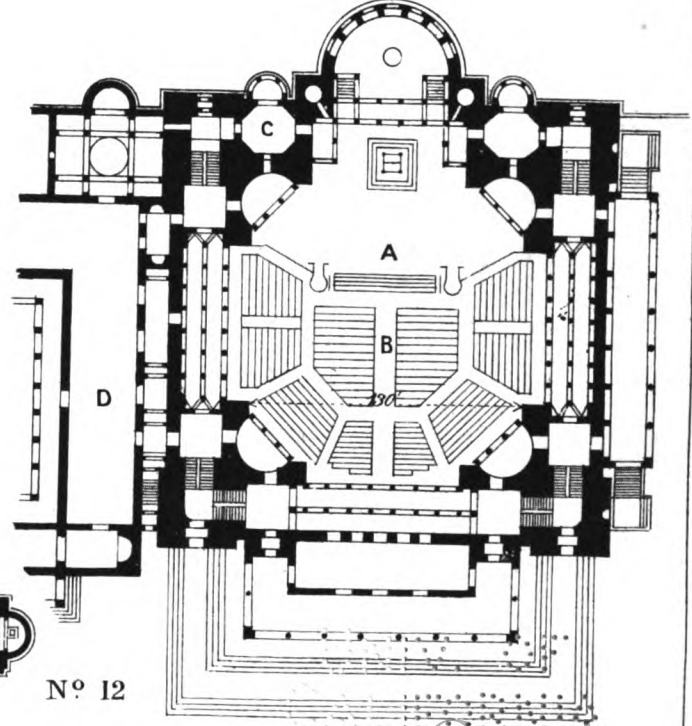
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## THE STRIKES IN LANCASHIRE AND YORKSHIRE.

ON Saturday, 8th inst., seven hundred plasterers struck work in Manchester, leading likewise to the enforced idleness of a hundred and fifty labourers. The masters some time ago gave notice of their intention to adopt the system of payment by the hour, and to refer trade disputes to arbitration; but on Thursday, only two days before the notice expired, the men announced their determination to reject those conditions, and left their work simultaneously.

The operative stonemasons have for the most part refused to comply with the appeal of Lord Lichfield and others to avoid a strike, by submitting the questions in dispute to arbitration. Those questions chiefly refer to the masters' proposals for payment by the hour, the abolition of restrictions on the use of machinery, and the cancelling of the rule which prevents stone being worked at the quarry. The Liverpool men have come to a temporary arrangement with their employers; and at Lancaster, on Saturday, it was resolved by a majority to continue work on the masters' terms; but at Bradford, Bolton, and several other towns, there was a turn-out on Monday, and there is every likelihood of the strike becoming general.

The masons of Wolverhampton have also struck against payment by the hour, the settlement of disputes by arbitration, and the using up of worked stone. There has been a partial lock-out at Bolton.

The ironmasters of the North of England and their workpeople are to be commended for the sensible way in which they have settled disputes. Some time ago the men demanded an advance of ten per cent. upon their wages, which the ironmasters declined to accede to, and the matter was submitted to the local board of arbitration, but no settlement could be arrived at. Mr. Rupert Kettle was then called in as arbitrator, and that gentleman, after going through the masters' contracts, intimated that the trade would not bear an advance now, but would probably bear what the men asked before long. Mr. Kettle, however, suggested an advance of 5 per cent., and the compromise has been cordially accepted on both sides. A further happy suggestion has met with general approval, and is to be tried. It is that a sliding scale of wages should be formed, based on the selling prices of manufactured iron. It is obvious that such a scheme has great difficulties in its way; but if it can be made to work, the question between capital and labour will be so far settled. Once get it generally accepted that profit and wages should bear a certain definite relation to each other, and let it be distinctly agreed what that relation should be, and a treaty of peace between capital and labour will have been signed and ratified.

The operative house-painters of Glasgow struck work on Monday for an advance of wages.

## RENOVATION OF ARTHURET CHURCH.

THE ancient church of Arthuret is situated at almost the extremity of the English Border. Originally a low, mean building, adapted to its exposed situation, and often destroyed by the Scots in their devastating raids across the Border, the present church, according to Hutchinson, was built in 1609; but the date, judging from the principal parts of the present edifice—chancel, nave, and aisles—appears to be earlier than the year 1500, and it is probable that the original edifice was built during the latter part of the 15th century. The style of architecture is 'Tudor.' Now, however, the old has been made new, most of the leafy covering of the walls has been removed, and the pleasing alternations of green yet sombre ivy and grey crumbling stone have given place to a mixture of light and shade occasioned by the difference between the ancient and modern masonry, which has, to a considerable extent, destroyed what mainly constituted the charm of the edifice. The tower, except as regards the doorway in it, has not been touched, the principal portion of the external improvements having been made at the east end. Originally the roof of the chancel was flat, and somewhat lower than that of the nave. It has now been raised so that the whole of the roof from the tower to the end of the chancel is of the same height. The old east window has been accurately and carefully restored, and the gable surmounted by a cross. This cross is entirely new, is four feet in height, is very neatly sculptured, and has the date of the renovation, 1868, carved at its base. The raising of the gable in this manner is a great improvement, and gives a better effect to the large chancel window. The other external alterations require little notice, being merely renovations of the old walls, without changing the construction of the edifice. In the interior, however, everything is changed, the whole of the arrangements having been altered; and there is nothing to remind one of the past except one or two old cenotaphs upon the walls. Perhaps the most important improvement is in the roof, from which the old flat plaster ceiling has been removed, and succeeded by an open roof of oak. The floor, except in the centre aisle, has been boarded—an improvement which increases the comfort of the congregation. The pillars and arches, which were previously covered with plaster, have been stripped of their covering and carefully cleaned. In order to increase the number of sittings, the centre aisle has been made narrower by elongating the seats, which have also been greatly improved by having been converted from old-fashioned square pews into open benches. The western and chief doorway has been enlarged; it was formerly small and round, but is now composed of a pointed arch, and is a very handsome doorway. But the chief improvements and alterations are in the chancel. Here the old reading desk has been replaced by a new one of oak, elegantly carved; and a handsome oak pulpit has also been substituted for the old one, and has been placed in the nave at the foot of the chancel steps, instead of in the chancel itself, as was the case with the old one. On the north side of the chancel a Gothic oak screen has been erected in front of the pews appropriated to the use of the Graham family. On the south side is a small vestry, a convenience which the church did not formerly possess.

The greatest ornament of the chancel, and, indeed of the whole church, and that for which the church will always be most celebrated, is the

window erected in memory of Sir James Graham. It is 18 feet in height, and 14 feet in breadth, and alike as a whole and in its minutest details cannot be regarded otherwise than as one of great beauty. It contains six lights, all filled with stained glass, and its general appearance is very imposing. The building has been renovated under the superintendence of Mr. D. Birkett, architect, the window being from the establishment of Messrs. John Scott and Son, stained glass manufacturers, Rickergate.

## ILLUSTRATION.

SOUTH DOOR, BOURGES.

THE Cathedral of St. Stephen of Bourges is remarkable for the number of its portals. The western façade has five grand entrance doorways, corresponding with the respective widths of the nave and the four aisles. On the north and south sides of the church, which is without transepts, at the sixth bay, are lateral porches, forming, in each case, the approach to a richly-sculptured doorway. A view of a portion of the southern portal is given as one of our illustrations for this week.

The doorway is divided into two entrances by a central shaft; against this is placed a standing figure of Our Lord, whence the porch derives its name of 'le portail du Christ.' The statue is now much mutilated; originally the right hand was in the act of blessing, and the left held the orb.

The lintel is carved into twelve niches, containing seated figures of the Apostles, and, in the tympanum above, not shown in the drawing, is Our Lord in glory, surrounded by the evangelistic emblems. In the nooks of the jambs are figures of kings and prophets, standing on short pedestal columns, and surmounted by canopies. The nook-shafts terminate in richly historiated capitals, the key to the interpretation of which is now lost. The semicircular enclosing arch consists of three orders of mouldings. That next the tympanum is carved into figures of angels in adoration, and offering incense; the next is formed of apostles, prophets, and kings; and the third is a roll-moulding, richly ornamented with interlaced work. The whole bears traces of the colour with which it was formerly decorated (Girardot & Durand, Cath. de Bourges).

This portal, together with the parallel one on the north side of the church, is remarkable as being, for the most part, of a much earlier date than any of the rest of the work in the building. The present Cathedral was projected in A.D. 1172 by the Bishop Etienne, to replace the old church of the eleventh century, but was not actually commenced till the early years of the thirteenth. Now the sculpture on these doorways dates from A.D. 1140–1150, with the exception of the figure of Christ, the mouldings of the plinth, and some of the little columns supporting the figures (in the lithograph, the one in the central shaft and the outer one in the jamb); these are evidently work of the thirteenth century. These doorways must, therefore, have formed part of the earlier edifice, and, on account of the beauty of the sculpture, were preserved and incorporated with the new work (Viollot-le-Duc, vol. viii., p. 204). A parallel case to this is the Porte Ste. Anne, of the Cathedral of Paris; in England, also, there are numerous instances in which a richly-sculptured Norman doorway is the only relic of a previous structure. The porch in front of the portal was erected in the middle of the thirteenth century.

The door, which is a fine specimen of fifteenth-century woodwork, was presented to the Cathedral about the year 1450 by Jean, Archbishop of Bourges, and son of the celebrated Jacques Cœur of that city. The arms of the Cœur family are seen displayed on one of the little shields in the upper panels.

H. W. L.

## THE BERLIN CATHEDRAL COMPETITION.

ON several former occasions we have mentioned the competition which was invited for this purpose, and which resulted in the production of 55 sets of designs, now exhibited at Berlin. Although all Europe was invited to compete, but few non-German architects responded, and the exceptions were one Belgian, two Frenchmen, and a naturalised Egyptian (a German by birth), Herr v. Diebitsch, of Cairo. The last, yet in many respects not the least, to arrive was a set of plans designed by H.R.H. the Crown Princess of Prussia. The idea of a great Protestant Cathedral for the capital of Protestant Germany emanated with the architect Schlüter, who, about a hundred years ago, was employed in erecting the present Palace, at right angles to which then stood an old Dominican church. But Schlüter did not live to finish the Palace or to begin the Cathedral, and his successor Baumann, after finishing the former building, pulled down the Dominican church in 1797, and erected the barn-like edifice which at present does duty as the chief metropolitan church of Berlin. Then Schinkel, who afterwards did so much for his native city, appeared on the scene, and attempted to give Baumann's barn a more monumental character by adding the three domes and the portico, with which the traveller is familiar. But he felt that even in its altered form the Dom was not worthy of the position it occupied, and produced a Gothic design, magnificent in plan but faulty in elevation, faulty at least as regarded by the light of our present knowledge of and feeling for Gothic. This is the plan No. 7 on our illustrated page. The third design was that of King William IV. of Prussia. Having to deal with a site measuring about



400 ft. by 250 ft., he appropriated the space to a Cathedral 223 ft. by 210 ft., and a 'Campo Santo' 183 ft. square by the side of it. The church was to have five aisles, the central one or nave having a width of 80 ft. by a height of 140 ft. to the top of the vaulting. The 'Campo Santo,' destined for the interment of Prussia's greatest men and of the royal family, was to consist of open cloisters round an open central space, and the walls were to receive frescoes, the studies for which were prepared by the great Cornelius.\* Unlike the two former plans, this was in the Byzantine style, the motive for the adoption of that style being to identify the simplicity of the Lutheran service with that of the primitive church, as distinct from the Roman Catholicism of the middle ages. About the year 1846 operations were commenced by laying the foundations of the cloisters, but two years later the works were stopped.† M. Stüler was then commissioned to prepare the *fourth* design (see No. 3). He did so. A large model was made, and the plan, which was a modification of the King's, was adopted, when the project was again shelved at the death of the late King. Then M. William Stier produced his plan (see No. 5), but it was not accepted; and finally, in 1867, the idea was once more brought forward, and in the autumn of that year the present competition was published by decree of the Minister of the Interior. But, from what we hear, this ill-fated work is still as far as ever from actual execution. The jury, after throwing out all Gothic designs, as unsuitable to the surroundings and to the character of the city generally, have closed their deliberations; and their verdict is that, whilst admitting the beauty and fitness of many of the plans, and especially those of ten competitors, they cannot recommend the execution of any particular plan, and they advise a fresh competition. The ten designs recommended are those of Messrs. Ende and Böckmann, Orth, Heyden and Kullmann, Eggert, Gropius and Schmieden, Adler, Klingenberg, Spielberg, Hildebrandt, and von Quast. All these gentlemen discard nave and aisles as unsuited to the Lutheran form of worship, and have adopted the central hall in the various modifications shown in the collection of plans which we give this week. They all accept the idea that the Campo Santo should be retained intact as already begun; we have thought it unnecessary to show it more than once, namely, at No. 3. Another feature is the attempt which has been made to have as it were two churches within one building, namely, one for ordinary service and another for great occasions of public character. How far this has succeeded may be best seen in Plan No. 1, that by Messrs. Ende & Böckmann (who make one altar do duty for both churches). The style adopted in the present series of plans (except Nos. 3, 5, and 7) is chiefly Renaissance and Modern Romanesque, with central domes, rising in some instances to a height of 350 ft. and 400 ft., whereby the Museum on the one side and the Palace on the other side of the square would be completely dwarfed. The present competition has done some good; it has called forth the artistic talent of Germany, and especially of Prussia, in a manner never attempted before, and the appeal has been answered in a satisfactory way, and has proved that the arrangements of a Protestant Cathedral are capable of other than the ordinary treatment as exemplified in Nos. 5 and 7. It has also shown the *fallacy* of the idea of building two churches in one, and the *possibility* of retaining the Campo Santo, upon the foundations of which so much money has already been expended.

#### References to Plans.

- A. Space for ordinary services.
- B. " Festival services, coronations, &c.
- C. Vestries, &c.
- D. Campo Santo, begun 1846, left unfinished.

#### Names of Authors.

1. Ende and Böckmann.
2. Heyden and Kullmann.
3. Stüler. Idea of King Fredk. William IV. Before competition.
4. H. Spielberg.
5. Wm. Stier. Before competition.
6. Klingenberg.
7. Schinkel. Before competition.
8. Von Quast.
9. Orth.
10. F. Adler.
11. H. Eggert.
12. Gropius and Schmieden.

**South Staffordshire and East Worcestershire Institute of Mining Engineers.**—The monthly meeting of this institute was held lately at the George Hotel, Walsall. The final arrangements were made for the transfer of the property and funds of the old association to the new, and it is hoped that the site for a new building for the institute and museum will soon be provided. The visit to the North of England district is fixed for the 25th inst., the members returning on the 28th. Eleven new members were appointed, making 115 in all. After the conclusion of the business, Mr. Henry Johnson, the honorary secretary, was presented with a gold watch-chain and locket, as an expression of the appreciation of the members of his services during the last two years.

\* From whose hand huge cartoons, covering no less than 6,588 square feet, are preserved.

† After a sum equal to 45,000l. had been expended in foundations and preliminary works, such as embankment walls, &c., next the river Spree.

## THE NEW WOOLWICH WORKHOUSE.

### ARCHITECT'S RATE OF PERCENTAGE.

AT the last meeting of the Guardians, in pursuance of notice of motion to rescind the Board's resolution appointing Messrs. Church & Rickwood architects of the new union house, the Board was specially convened to consider the subject. Mr. Gibson said he had no doubt that Church & Rickwood would do the work properly, but argued that the remuneration of 4 per cent. was too high. He cited Beverley, Oxford, and Islington, where only 2 per cent. had been paid. Mr. White complained that no definite answer had been given to his question at the last meeting, and said he had received numerous letters from ratepayers complaining of the high charge. If the Poor Law Board had not confirmed the appointment of Messrs. Church & Rickwood, the resolution could be rescinded. It was usual, where contracts exceeded 5,000l., to pay 2 or 2½ per cent. He understood that Stepney workhouse had been selected by the Board as a model for their own. If that were so, there would be no great inventive power required, but simply a matter of copying, which was in favour of a low remuneration. He had no doubt of Messrs. Church & Rickwood's ability, but considered that if they were employed it should be upon a reduced scale. The Rev. H. Brown said, Messrs. Church & Rickwood had already commenced the work, and would have to be paid if the resolution were rescinded, whilst other undesirable consequences might accrue. Mr. Tuffield believed Messrs. Gibson & White were acting in good faith, and with every disposition to benefit the ratepayers, but he considered 4 or even 5 per cent. fair remuneration. They might get it done for 1 or even ½ per cent., but there would be the probability of collusion between the architect and builder, and underhand practices, so that he regarded it as an absolute essential that the architect engaged should be of undoubted rectitude. They had the latter quality in Messrs. Church & Rickwood. Mr. Graham said with regard to Mr. White's observation relative to inventive powers, there was a vast amount of professional skill beyond the mere dimensions and arrangement of the wards, workshops, &c. There was a difference in the levels on the two sides of the workhouse site of 25 ft. The remuneration of 4 per cent. was most reasonable, and he did not believe any honest architect would take it for 2 per cent. He then cited several instances where architects and builders had connived together, and where patented articles, particular kind of bricks, &c., had been used.—The motion for rescinding the resolution was put, but subsequently declared lost.

A letter was read from the Poor Law Board, enclosing a letter from Messrs. Gosling & Son, architects, 76, King Street, Woolwich, in which they informed the Poor Law Board of the appointment of Messrs. Church & Rickwood, as architects, at 4 per cent. They complained that it was in direct violation of a resolution "That no appointment should be made unless duly advertised and competed for." The first they heard of it was from the reports in the newspapers, and considered 4 per cent. excessive, causing a loss of 600l. to the ratepayers, the Islington Workhouse having been built at 2 per cent. They begged that the Poor Law Board would not sanction the 4 per cent., but that they would cause the work to be thrown open to fair competition. It was resolved, on the motion of Mr. Tuffield, to send a reply to the Poor Law Board, stating that no such resolution as referred to by Messrs. Gosling & Son existed on the minutes; but that the Board had in the exercise of its judgment accepted Messrs. Church & Rickwood's offer of 4 per cent. He believed the 4 per cent. included the taking out of the quantities. Mr. White said if the latter was the case, his end would be accomplished; on which Messrs. Church & Rickwood were communicated with, Mr. Church attending and stating that it did not include the quantities, which were paid for by the builder, who added it in the price of his estimate. One per cent. was a usual charge for taking out quantities. Mr. Tuffield remarked that it had been found sometimes that buildings could be erected cheaper without quantities, and it might become a question in the future as to whether they would have them or not.

The subject then dropped.

## THE CHILMARK QUARRIES OF WILTSHIRE.

THE stone obtained from the quarries of Wardour and Tisbury is rapidly taking its position as a first-class building stone in the metropolis. The district wherein the quarries are situated belongs to the Portland and Purbeck series of the upper oolite, and the siliciferous limestones of the neighbourhood were favourably reported upon by the Commissioners appointed in 1839 to visit the principal quarries, and to inquire into the qualities of the stone to be used in building the New Houses of Parliament. From the Chilmark quarries came the stone with which Salisbury Cathedral was erected in the thirteenth century; and Sir Christopher Wren, reporting upon the edifice in 1668, records his opinion that the stone was little inferior to Portland in durability. At the present time, after the lapse of 600 years, the entire building is in good preservation, excepting the western front, which is slightly decomposed. Various other ancient buildings in the vicinity testify also to the durability of the stone, which, during late years, has been somewhat extensively employed for edifices in the western counties, and also in the metropolis. From the five quarries now worked by the Wardour and Tisbury Stone Company, three classes of stone are excavated, the first from a hard bed producing a stone of close even texture, and of yellowish-brown colour, weighing 143 lbs. to the foot. The average thickness of the bed is 3 feet, and it can be obtained in blocks of any length. It is especially adapted for steps, landings, paving bed stones, or to any kind of work exposed to hard wear. The second class is a somewhat lighter stone, weighing 135 lbs., of less tensile and compressive strength, and is available for general building purposes. From the third quarry a stone of a rich yellow tint of fine texture is obtained, capable of being worked to the most elaborate designs. The average thickness of the bed is 4 feet, but it can be obtained as thick as 5 feet. In a well-arranged price-list the directors of the company tabulate the prices of this stone conveyed from the quarries to all parts of the United Kingdom.

## PARLIAMENTARY PROCEEDINGS.

Courts of Justice (New Site).

On Monday, the 10th instant, in the Commons, Mr. LAYARD rose to move for leave to bring in a Bill to repeal portions of the Act 28 and 29 Vic., c. 49, and to enable the Commissioners of Her Majesty's Works and Public Buildings to acquire a new site for the erection and concentration of the courts of justice, and of various offices belonging to the same. It had been urged that the question of the Thames Embankment had already been under discussion, and that the question of the erection of the law courts there had already been negatived. Now, that was not the case. No doubt the idea of erecting an Embankment had existed for centuries. At any rate it had prevailed ever since the time of the great fire. But up to the last two or three years no person in the metropolis had realised what the Embankment was, and the discovery had only recently been made of the value of the site for public buildings. When the question of the law courts was discussed, that of the Embankment was not taken into consideration. He would now point out the several sites which had been proposed for the erection of the new courts of justice. With respect to the Carey Street site, the Chancellor of the Exchequer had entered so fully into the financial part of the scheme, that it was unnecessary for him (Mr. Layard) to enter into it at any length. The House was induced to accede to the Carey Street site on one condition, and that was that the expense should not exceed 1,500,000*l.*, and it was specially agreed that until a certificate was given that the cost should not exceed that sum, the power accorded should not be exercised. The certificate was given that the site should not cost more than 700,000*l.*, and that the building should not cost more than the same sum. Now what had been spent on the purchase of land? The sum of 880,991*l.* 7*s.* 6*d.*, and the commissioners stated that the whole expense of the acquisition of land and the erection of buildings would be 3,200,000*l.* The estimate for the land was 800,000*l.*; for additional land to be purchased, 700,000*l.*; for the building, 1,574,000*l.*; for architect's commission, 74,000*l.*; for furniture, &c., 150,000*l.*—making together 3,200,000*l.* The estimate contained no provision for approaches. The only approach worthy of the name was the Strand. The building would be in a perfect hole, surrounded on all sides by squalid and mean structures, which must be swept away. On accepting office he found the present state of things then existing, and was expected to introduce a bill for acquiring additional land at an expense of 700,000*l.* He found that the House had acted on information that was incorrect—that the approaches could not be constructed for less than 1,000,000*l.*—making above 4,000,000*l.* before the buildings and the approaches could be completed. He communicated with the Chancellor of the Exchequer on the subject, and found that his right hon. friend had arrived at the same result on the financial question. It was considered improper to continue that enormous expenditure, and that it was desirable to put a stop to the erection of the buildings on the Carey Street site. It then became his duty to look at other estimates. That of the hon. member for Bath amounted to 2,710,000*l.*, and the plan was to place the law courts on the Carey Street site, without purchasing additional land, and the offices on the Embankment. There were many arguments against that scheme, one of which was that all the offices mentioned might not be necessary. Then came the converse plan, to place the courts on the Embankment and the offices on the Carey Street site. The objection with regard to the expense was the same, as the cost would have been about 2,000,000*l.* The next plan was that which had been most ably put forward by Sir C. Trevelyan: it was a very magnificent one, and it had received a great amount of public support. Sir C. Trevelyan had mixed up with it a variety of suggestions, such as that the Society of Lincoln's Inn should be transferred to Somerset House, and that the latter building should be raised a storey, which had rather interfered with the calm consideration of its merits, and into which he (Mr. Layard) did not then think it necessary to enter. The great objection to the scheme was its very considerable cost, which would amount, so far as he could judge, to at least 3,250,000*l.* But high as that estimate was, he believed that the work would cost less than that which it had been proposed to erect on the Carey Street site, because all the approaches to it, with the exception of one to the north, were already made. He had on a former occasion stated that the Chief Baron of the Court of Exchequer communicated to him his own opinion, and the opinion of the great majority of the common law judges, in favour of the Thames Embankment site; and he would then read from the learned judge's letter the following passage, which clearly enunciated that belief:—'All the judges with whom I have been able to communicate—with the single exception of one, and that one who only thinks that proximity to Lincoln's Inn is essential—are, as I am, strongly and decidedly of opinion that upon every ground, as regards the bench, the bar, the solicitors, the suitors, and the public, the Thames Embankment should be preferred.' (Hear, hear.) Then again he found that the Societies of the Inner Temple and of the Middle Temple had memorialised the House in favour of that site; and although there was a strong opinion against the proposal among the members of the Society of Lincoln's Inn, those gentlemen had not attempted to petition the House against it, in consequence, as he believed, of the difference of opinion which prevailed in that society itself upon the subject. It might, however, in his opinion, be fairly objected to Sir C. Trevelyan's plan that the cost of its completion would be excessive, and that the site was far too large for the purpose intended. Another scheme was that there should be erected upon the Carey Street site the same building which the Government proposed to raise upon the Thames Embankment. It was suggested that that would be the more economical mode of proceeding, but he believed that it would be found a much more expensive one. The cost of the site at Carey Street was, as he had already stated, 900,000*l.*; the cost of the building would be 1,000,000*l.*; and they would still have to construct the approaches, which would involve an outlay of at least 500,000*l.*, or probably of a sum nearer 1,000,000*l.* Under those circumstances, the Government had determined, after careful consideration, on selecting for that purpose the space bounded on the east by the Temple, on the west by King's College, on the north by Howard Street, and on the south by the Thames Embankment. There was this to

be said in favour of that scheme, that it would not render it necessary to purchase any expensive frontages, and that almost the whole of the property to be bought belonged to one proprietor, the Duke of Norfolk. It was said that the ground laid low, but he believed it was one of the most commanding sites in the metropolis, for the level of Howard Street was almost the same as that of the Strand. The ground in question was of the space of six acres, and he found that there could be erected upon it eighteen Courts, and all the offices that it would be necessary to attach to these Courts. He had gone fully over the plan with Mr. Street, the proposed architect of the building, and he was bound to state that that gentleman had met him most honourably, and that although he had been at first in favour of the Carey Street site, he at present approved of the new proposal. In adapting his plans to the new site Mr. Street had hit upon a much better arrangement than in connection with his former site. He had not had occasion at all to alter his general plan for the Courts and the offices. It had been said that the proposed building would project eighty feet beyond Somerset House, but there was no truth in that assertion. The terraces of the Law Courts and of Somerset House would in fact be continuous. The only part of the building which would project beyond Somerset House would be a railway station to be erected at the extreme east corner of the site. Furthermore, the new site had the advantage of affording every necessary approach without casting any expense whatever upon the public. The only approach, in fact, which it would be necessary to construct would be one to the north—an approach which would be equally necessary at Carey Street, which also would require approaches constructed upon the east and west. So far as approaches were concerned, the Embankment would be readily accessible from all parts of London. He proposed to form a terrace to Somerset House, along which the judges would be able to drive and alight from their carriages on a level with the Courts. They could not have done this at Carey Street, but would have had to ascend 40 steps on the north side and 70 or 80 on the Strand side, and the public would have had to ascend 100 on the same side before getting access to the Courts. Another advantage possessed by the Embankment site was having the two blocks of building—the ex-Courts and the offices—separate, so that either could at any time be tended northwards, irrespective of the other. The expense of the new scheme was the next matter for consideration. He had gone most carefully into the estimates, and had found that the land would cost 600,000*l.*, and the building 1,000,000*l.*; making altogether a sum total of 1,600,000*l.* This amount he pledged his honour would not be exceeded. There could be no mistake about the cost of the land, and as to the building he was persuaded that 1,000,000*l.* was the outside price. According to the estimates for Carey Street a suitable building was to be erected on 7½ acres of ground for 750,000*l.*, whereas at the Embankment site he was allowing 1,000,000*l.* for only six acres. The Office of Works, over which he presided, had greater power in the way of checking expenditure than formerly, and he should take care that not a shovelful of earth would be turned or a stone laid until he had contracts to assure him that the cost would not exceed 1,000,000*l.* The site upon the Embankment had one or two economical points in its favour. All the material, for instance, to be used in the building could be conveyed by water, and the traffic of the City would not be interrupted, as it must necessarily be if the Carey Street site were adopted, and the streets in that busy neighbourhood were for some years to be blocked up by the conveyance of stones and other material. Moreover, much less ornamentation would be required for the building upon the Embankment. In the case of a building where only portions of it could be seen at one view, a great deal of ornamentation was necessary in order to make it effective; but by placing the palace upon the Embankment it could be taken in by the eye all at one view, and simple proportions would be sufficient, the effects being left to be gained by massiveness and the arrangement of light and shade. Another point in favour of the Embankment was that the building could not be extended either right or left, so that there would be no inducement for purchasing unnecessary land, whereas if extension were at any time really necessary, it could easily be effected towards the north. But it was urged as a difficulty that 500,000*l.* would be lost by re-selling the site at Carey Street. This would not be so. He had already had offers for the purchase of that land at the actual price paid for it by the Government (hear, hear). They would not only be able to recoup themselves, but to do more than that. Another difficulty was that with respect to the railway station. If it had been placed in the very centre of the Law Courts it would have been very objectionable, but he had opened communications with the railway company and with the Temple, and he had every reason to believe that they would be able to place a station near the entrance of Essex Street. Then as to the alleged loss of time in transferring the site. They could not commence building on the Carey Street site in less than a year. They would have to get an additional site. If they had not given up the plan, the houses on the additional site must be acquired; but in any case, all the working drawings and specifications had to be made, and it would take a year before the drawings could be made and the work be commenced. They proposed to proceed at once as if notices had been given. This course was irregular, and it would be necessary to ask the House to suspend the standing orders. (Oh, oh, and hear, hear.) They proposed to proceed as if the notices had been given in in November. They proposed to limit themselves to June 30 before putting their powers in execution. The Bill would be referred to the examiner, who would state that the standing orders had not been complied with; and it would then be for that committee to advise whether the standing orders should be complied with. If, as he hoped, they were suspended, then the Bill would be read a second time and referred to a committee, who would see that no injustice was done to the owners and occupiers of land, and this course, he believed, would be found to be just to them, for Government would be ready to give the notice to treat in three months. It was proposed to proceed at once to give the notices to treat, and to avail themselves of compulsory powers up to June 30, 1870. They had but two parties to deal with—the Duke of Norfolk, who was the chief owner, and who, he believed, would throw no obstacle in the way of the Government, and the occupiers of the houses.

If the House consented to this plan, not a single hour's delay would take place. The sketch plans were ready, and would be lithographed and in the hands of members in a few days. As to delay, he thought that in a building that was to last for generations, the delay of a year or two was a matter of minor consequence (hear). But here they might proceed at once to clear the site, and begin building on Howard Street and the Thames Embankment. He thought there might be some modifications of the plan, and he thought it would bear cutting down, for the thing had been done on far too great a scale. Upon these six acres, with proper supervision, the whole arrangement could be effected at a moderate sum. All the House was asked to do was to accept these plans in principle. He had been asked if he would have a model placed. He thought no public building ought to be erected without a large model being placed for the public, but that would take some time. It would be his duty to see that proper elevations were drawn, and opportunity should be given to the House and to the public to inspect them. A great deal of criticism had been drawn upon the suggestion of his right hon. friend that Inigo Jones's front might be adopted; but he (Mr. Layard) thought it belonged to the past, and might not be suitable for a court of law (laughter). He did not think that a palatial building should be placed beside Somerset House. His impression was that the style to be adopted should be Gothic, but not ecclesiastical Gothic. He should like to see that kind of Gothic adopted which was used by the Italians—such as that of the great ducal palace and the neighbouring buildings at Venice. That was a style of Gothic not so expensive as ecclesiastical Gothic, and not so much ornamented. Besides, he did not think it right to impose on Mr. Street a style which he had not made the subject of study. Mr. Street was a man of great ability, and a thoroughly conscientious man, and no doubt would execute a work satisfactory to himself and to the public. He believed that, if the plan of the Government was carried out, they would have on the Embankment a building that would be an ornament, not only to the metropolis, but to the whole country (hear, hear). He begged for leave to introduce this Bill.

Sir R. PALMER did not propose to ask the House to refuse its sanction to the introduction of the Bill, but should challenge its opinion upon the second reading. It was untrue that the House had only to choose between the recommendations of the Commission and the plan of the Government. That Commission comprised numerous and influential members of the bench, the bar, the solicitors, and officers of the courts. It was incorrect to say that it represented the views of other people. It thoroughly worked out the scheme, and was in communication in reference to it with the Boards of Treasury under the respective Governments of Lord Palmerston, Lord Russell, Lord Derby, and Mr. Disraeli. The present First Lord of the Admiralty was not only a nominal, but a working member of it, and that right hon. gentleman would best know how to answer what had been said by the First Commissioner of Public Works as to its expenditure of time and their prodigal extension of the original estimate of the cost. It was untrue that the Commission had spent, or could spend, a single farthing of the public money that had not been authorised, or that it had in a single respect exceeded its functions, or had committed the Government or the House to the expenditure of a single farthing or to the purchase of a single acre. It was—and always had been—possible for the Treasury to decide that they would not take more land than was required for the original building, and he could conceive nothing more unreasonable, more unjust, or more uncandid than to bring forward the original views of the Commission as the excuse for now giving up the scheme. The Treasury might at this moment, by taking the more limited ground, put up a suitable building at no greater cost than what would be expended on one on the Howard Street site. On the Carey Street site they had cleared  $7\frac{1}{2}$  acres, at the cost of a great displacement of the labouring population. There was space enough to form wide roads for access, and to leave surplus land besides; and they must remember that if the site was now to be given up the mere interest on the money would amount to 25,000*l.* a year. And all this was to be done to please the First Commissioner of Public Works. He desired to mention another matter on which the Chancellor of the Exchequer had formerly made a statement that had given rise to much misapprehension. His right hon. friend had stated that the bill of costs of Messrs. Field and Roscoe amounted to 27,832*l.*, but the persons who put these figures into the hands of his right hon. friend had forgotten to inform him that of that sum no less than 23,881*l.* had been paid by Messrs. Field & Roscoe out of pocket, on behalf of the Government and by arrangement with it; that their costs for extensive services spreading over three and a half years were only 3,951*l.* His right hon. friend could not avoid having a similar bill to pay over again. With regard to the present scheme it was proposed to take six acres, without making the slightest allowance for approaches east or west. To give one at the east end they must take more land and diminish the site, and on the west by King's College there would be no approach, and they would have to advance an irregular line to the edge of the railway cutting. The levels would also be worse than the Carey Street site. The approaches to the Thames Embankment from the north would be such as would be necessary for the Carey Street site. The approach from the north would be at the narrowest part of the Strand, and if this site was carried out they would have to widen this part of the Strand. From combining ecclesiastical with Palladian architecture, they were, by adopting this site, inflicting a real grievance upon the profession and the public. This ecclesiastical architecture would be placed in a hole for the public to see going up and down the river, and, as his hon. friend represented Southwark, he had no doubt he would frequently be there to admire it, but the general public would not have the pleasure of admiring the thing that was to be placed on the Embankment. The building would not be a decoration to the metropolis. He had never discussed this matter upon a question of architecture, but upon the principle that Carey Street was the best, and that a building there erected would be an ornament and a decoration to London. (Hear, hear.) Much had been said about expense, but he should like to see an account of the money that had been laid out upon the Foreign Office, the India Office, and Burlington Gardens. No one appeared to have checked these things, but his hon. friend the member for Southwark appeared to have two voices, one which spoke well of his friend and

another the reverse. He doubted if all the judges were in favour of this scheme.

The CHANCELLOR of the EXCHEQUER restated what he had before stated to the House, in order that there might be no false issues raised. It was a grave error, the commissioners having appointed Mr. Field their secretary, to appoint the firm of which he was a member as the solicitors to the commissioners. He was not aware of any recommendation of the commissioners to erect anything but the building planned by Mr. Street. It was wrong of the commissioners to prepare a Bill for acquiring the Carey Street site.

Lord J. MANNERS said it was not the commission who prepared the Bill, but the Government of Lord Russell, with Mr. Gladstone as his Chancellor of the Exchequer. With regard to this site, if it was approved of, the Government would become land jobbers on the most gigantic scale. With regard to the expense, the right hon. gentleman had pledged himself, in a manner that no minister ever had or would do again, that the expenditure should not exceed one million.

Mr. GOLDNEY was opposed to the new site.

Mr. TITS said he should reserve his opinion till he saw the plan. The confusion had arisen chiefly from the necessity for acquiring a fresh site. One advantage of this discussion, if there were none other, would be that the building would be brought within moderate dimensions.

Sir G. JENKINSON hoped that before the second reading a proper plan would be shown.

Mr. LAYARD said that proper plans would be produced.

## LEGAL.

Consistory Court, May 7.

(Before Sir TRAVERS TWISS.)

DR. EVANS V. SLACK AND SMITH.—IMPORTANT JUDGMENT.

This morning judgment was delivered in the case of Dr. Alfred Bowen Evans, rector of St. Mary-le-Strand, who applied for a faculty to empower him to make certain alterations in his church, the churchwardens, representing the vestry, opposing.

Sir Travers Twiss, in delivering judgment, said:—This is an application on behalf of the Rev. Alfred Bowen Evans, rector of the parish church of St. Mary-le-Strand, for a faculty to authorise him to remove the whole of the furniture and fittings of the interior of the said parish church, including the chancel thereof; to raise the floor of the chancel and repave the same, together with the floor of the nave of the church, and to refit the nave and chancel with furniture of an altered character, the whole of the expenses of the same to be defrayed by the rector. The grounds set forth in the application why permission to make the proposed alterations should be granted, are that the present pews or seats in the church are inconveniently arranged, and that the other alterations were required for the comfort and convenience of the inhabitants of the parish resorting to their parish church for the purpose of divine worship, and further, that by the proposed alterations twenty-eight additional sittings will be gained. The churchwardens, on the other hand, in their act on petition, have alleged that the pews or seats are conveniently arranged, that they are handsome in appearance, and suitable in character to the architecture of the church, that they are made of oak and are as good as new, and during the last year have, at the suggestion of the rector, been fitted with new gas pillars, and that the alterations proposed to be made in the church are not required for the comfort and convenience of the inhabitants resorting thereto. They further allege that the pews or seats are amply sufficient for the accommodation of the average number of parishioners and their families who have attended service in the said church either before or since the year 1861. The learned judge referred to the arguments of Dr. Evans's counsel, and to the cases 'Groves and Wright v. the Rector and Parishioners of Hornsey,' and to the case of 'Brett v. Jones.' Neither of these cases, continued his Lordship, are precisely in point, inasmuch as the present application is for a faculty to remove and alter the communion-table, the communion rails, the pulpit, the font, and the whole of the sittings in the nave of the church as well as in the chancel, none of which are stated to be in a dilapidated state, and the whole of which have been provided at the expense of the parishioners, being such furniture and fittings as they are bound by law to provide. It is not an application to add anything which may be for the greater convenience of divine service, but which the parishioners are not bound to provide, such as an organ, or what may be for the additional accommodation of the parishioners, as in the case of a gallery, inasmuch as the evidence fails altogether to make out the case set up by the rector in his original application, that by the proposed alterations additional sittings will be gained. It is an application, in fact, on the part of the rector to be allowed to make these alterations at his own expense, with a view to increase the comfort and convenience of the parishioners generally, and especially of the poorer inhabitants of the parish, who are deterred, as he alleges, from attending divine service by reason of the present insufficient accommodation. The Court has, therefore, to consider, in the first place, whether the rector has established his position that the present sittings are inconvenient and ill-adapted for public worship, and that the parishioners are deterred thereby from attending divine service, and that the proposed refitting of the church, if carried out, will not merely conduce greatly to the comfort and convenience of the parishioners generally, but will be a great inducement to the poorer inhabitants of the parish, who have hitherto absented themselves from divine service, to attend the same. The result of the evidence given is to satisfy the Court that the present sittings, although they may not be comfortable to all, and may be actually uncomfortable to some of the persons who are in the habit of attending divine service in the church of St. Mary-le-Strand, have not by their positive discomfort deterred any of the parishioners from attending divine service, and that the rector has failed altogether in sustaining the burden of proof which the law imposes upon him on this part of his case. I must, in fine, reject the application of the rector, and decline to grant the faculty as prayed for.



## Bail Court—May 11.

(After-Term *Nisi Prius* Sittings at Westminster, before Mr. Justice MELLOR and a Common Jury.)

STROUD AND ANOTHER v. ABBEY.

This was a part-heard case, and was an action brought by the plaintiffs, who were brickmakers, carrying on their business at Islington and elsewhere, against the defendant, a retired builder. It appeared from the plaintiffs' evidence, that the defendant and his son called at their office in November, 1867, and gave an order for the bricks in question. The defence was, that the son, and not the father, ordered the bricks. It was stated in the course of the evidence that the son had absconded in consequence of some love affair, the nature of which did not transpire.

Mr. Serjeant Parry and Mr. Macrae Moir appeared for the plaintiffs; Mr. Philbrick and Mr. Poynter for the defendant.

The jury returned a verdict for the plaintiffs for 57l. 12s., the amount claimed.



## THE NEW ROYAL ACADEMY.

To the EDITOR of THE ARCHITECT.

SIR,—I really think it is time the Architects should cry out in their own defence. The Architect of the new Academy, in his arrangement of the several galleries, appropriated one to Architecture, and in the last hour this room was once more assigned to Painting, the Architects being thrust into the Lecture Room, where the greatest portion is occupied by steps, much to the inconvenience of the public. The Architects are thus deprived of exhibiting many of their works either in their own rooms or in those of the new Academy. This, to say the least, is not very complimentary to the Academy's Architect, or very considerate towards the profession generally, who were looking forward to better times and better feeling from the R.A.s. The Architects should address a letter to the Council on the subject.

Your obedient Servant,

AN ARCHITECT.

May, 1869.

## THE ROYAL ACADEMY.

SIR,—I have read with great attention Mr. Godwin's able article on this subject in your issue of May 1, and am reluctantly obliged to thoroughly agree with and believe in most that he complains of therein. I say reluctantly, because I would fain have believed, as regards architecture, that those who represent this branch of art in the Academy would have striven to have obtained a due and proper recognition of their art. In one statement made by Mr. Godwin, namely, that 'one very important step has already been taken in widening the class of Associates from twenty to an INDEFINITE number, so as to identify all good workers with the Royal Academy,' I fear he has not been explicit enough. Such a statement as this would inspire a hope which I fear would be vain; for if it be true that some such rule as the following one holds sway, no such hope can possibly exist. The rule I refer to, and which I am credibly informed is correct, is to the following effect, namely, that if (at a time when NO VACANCY exists—mark the words!) there be a man of such exceptional power that it is thought he ought at once to be elected, he must be nominated by twenty members, or one-third of the whole constitution, then put up to ballot, and must be elected by two-thirds of the votes present. And (here mark the inconsistency as regards an indefinite number) when the next vacancy occurs, he is absorbed into the twenty Associates; but, until this time, he is not a full Associate, nor can he himself, his widow, or his family, receive the usual pensions, &c. Such a rule, if this be correct, practically makes the proposition as regards an indefinite number of Associates *nil*; for until, from death or some other cause, a vacancy occurs in the charmed twenty, any artist brought in under the rule above quoted becomes simply an outsider or a mere nominee, to be absorbed, 'tis true, in due course; but as the average number of vacancies in the whole sixty members is only about two to two-and-a-half per annum, it is evident that, except for one or two months, the list is never likely to be increased beyond the original sixty. Now, Sir, can anything be more prejudicial to art than this?—for undoubtedly most artists naturally look upon the Academy as an earthly paradise, into which they may be allowed at some time to enter. With such restrictions as at present exist, as set against the very large number of artists who are notoriously eminent, and estimating the average number of vacancies at two-and-a-half per annum, there can be but little hope that many of them will ever enter the sacred walls; for, giving the widest scope to the outsider clause, it would be at least thirty years before one hundred new members could be elected, and then some twenty-five would have to be outsiders. Is this fair or just in any way carrying out the spirit of making the number of Associates 'indefinite'? As regards architecture, it is probably in the memory of many architects that at one time the octagon room in the old building was entirely devoted to their works. This was bad enough; but from the time when even this small room was taken from them, the treatment of architecture has been yearly getting worse and worse. To judge from Sir Francis Grant's speech at the 'Artists' General Benevolent Dinner' on Saturday last, architects are indebted to Mr. Sydney Smirke for their present position on the walls of this year's Exhibition; for I gathered that to him was due the sudden temporary fitting up of the Lecture Room for 'engravings, miniatures, &c.' for the purpose of making place, in the room originally set aside for architecture, for the accepted pictures which towards the end of the hanging were found yet unhung. Surely architects have just cause of complaint against Mr. Smirke—if, acting on a desire to see all accepted pictures hung, he made the suggestion to utilise the Lecture Room for architecture, &c.—that he did not at the same time use his best endeavours to see the works of his professional

brethren fairly treated, and not placed in the up-and-down manner in which they now appear. Mr. Godwin will doubtless correct me if I am in error in any part of this letter, but I fear that all I have said is but too true: if so, it is high time in the interests of art in this country that some radical change were effected, and it behoves artists of all denominations to see to it.

I am, Sir, your obedient servant,

AN ARTIST.

Arts Club, Hanover Square, May 10, 1869.

## NEW BUILDINGS AND RESTORATIONS.

**New Lunatic Asylum for Lancashire.**—A special meeting of the magistrates of Lancashire has been holden at Preston, to consider the propriety of erecting another lunatic asylum for the county. It was stated that authority had been obtained by the General Finance Committee to purchase a site for the new asylum in Whittingham, a few miles from Preston, and that one of the instructions of the committee was that the asylum, which would have to be for pauper lunatics, should contain accommodation for 1,000 patients. The cost would be 20,000l. It was resolved that a committee be appointed to provide an additional asylum, and that the sum of 20,000l. be borrowed or taken up on mortgage of the rates of the county for the purpose.

**Monument to Dr. Whewell.**—The master and fellows of Trinity College, Cambridge, have decided to intrust to Mr. Woolner the execution of the monument to Dr. Whewell, which is to be placed in the ante-chapel of the college. The statue of the late master will stand next to that of Lord Macaulay, some little distance to the right of Roubiliac's fine statue of Newton.

**Proposed New Infirmary at Canterbury.**—The surveyor to the Local Board, Canterbury, has presented a report prepared at the request of the Court by him, upon the proposed erection of a new infirmary. The report stated that it was beyond all possibility to think of converting the present infirmary into a building as required by the Poor Law Board, and therefore recommended the erection of a new one on the south side of the workhouse.

**The New Unitarian Chapel, Todmorden,** occupies a position on one of the hills to the south of the valley in which the town lies, and through which the Lancashire and Yorkshire Railway passes. The plan of the chapel consists of chancel with vestry and organ chamber, and nave with side aisles. A graceful and lofty tower and spire, rising to the height of 192 feet, are placed on the town side of the building, completing the entire group, and rendering the whole a pleasing and conspicuous object when seen either from the railway station or the town. Mr. John Gibson, of London, is the architect, from whose designs the works were executed. The style employed is the Decorated period of Gothic; and the cost of the building, about 30,000l., was defrayed by Messrs. Fielden, of Todmorden, in memory of their father. The chapel will seat about 500 people. Not being very large, compared with the outlay, the whole of the work has been completed in a very perfect and costly manner. Cut stone has been used throughout for the masonry, and marble columns internally, with oak for the benches and woodwork generally. The roofs are of an elaborate character. The tower contains a peal of 8 bells, and an illuminated clock. Three beautifully-executed stained glass windows enrich the chancel. Messrs. Clay & Son, of Audenshaw, supplied the woodwork, and the mason's work was carried out by day labour, under the management of the clerk of works. Immediately opposite to this chapel, on the other side of the valley, lies the Parsonage.

**Salford.—Richmond (Congregational) Chapel.**—The foundation stone of the new lecture hall and schools was laid April 1. The new buildings are contiguous to the chapel, and of the Gothic style, and comprise on the ground floor a lecture hall 59 feet by 35 feet and 48 feet 6 inches to the ridge, with spacious vestibule and entrance giving access to eight class rooms. The infants' school is 42 feet by 28 feet 6 inches, with separate entrances. Each school has lavatories, &c. The external walls will be faced with stock bricks, relieved with blue bricks to the arches of the doors and windows, and moulded bricks to the string-courses, with stone dressings to the doors and windows. The principal elevation will comprise two entrances. The gable will be pierced by a large window of five lights with elaborate tracery. All the roofs are of high pitch with open framed principals, and covered with Welsh slates with ornamental ridge tiles and iron cresting. The buildings will be warmed and ventilated by Messrs. Haden of Trowbridge. Cost, about 3,500l. Mr. W. Southern is the contractor, under the superintendence of the architect, Mr. John Lowe, of Manchester.

**The West Window in Hauley Church, Upton-on-Severn,** is to be filled with stained glass of the richest and best quality, the subject of the design to be 'The Ascension.'

**The New Church, Longton,** the foundation-stone of which was laid by the Right Rev. Dr. Ullathorne, early last summer, is a Gothic building, erected from the plans of the celebrated ecclesiastical architect, Mr. Pugin. It is rapidly approaching completion, and already ornaments the quarter of the town in which it is situated.

**New Chapel and Schools** are to be erected in Wellington Road, Liverpool. The contemplated buildings (in connection with the United Methodist Free Church) will cost about 3,000l.

**The New Station at Dronfield, Derbyshire.**—The site of the new station has been chosen by the engineers, and the station and platforms have been staked out. The spot is that best known as the Mill Dam, in the centre of it, and near to the old Tilt. The station-master's house and goods warehouse will be commenced without delay, and will afford all necessary accommodation for the public. Access will be had to the station ground from the Sheffield and Chesterfield Road at a point near to Wilson's malthouse.

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

**The Architectural Alliance.**

The Eighth Annual Meeting of delegates from the Allied Societies was held in London on Wednesday last. The proceedings of this meeting have always been considered as private; but the most important of the documents laid before the delegates—a digest of sundry reports on the state of architectural education—will appear in our next.

**Exhibitors at the Academy.**

The *Illustrated London News*, in its opening critique on the Royal Academy, gives us some elaborate statistics to prove that the 'outside native artists' are much worse off at this year's exhibition than they used to be at the old place. But we may remark, although it may be true that there are only three more paintings in oil hung this year over last year, the amount of canvas on the present walls is much greater; that is to say, all those little unsightly works some few square inches in size, which were never really good, and which seemed to be hung only to fill up little crevices and corners, have this year disappeared, and their number has been filled up by larger and more important works. Nor is it altogether fair to inveigh against the members of the Academy for the amount of their contributions, seeing that to the last moment it was believed that there would be more space than would be required, and that it is only natural that they should have wished to enter a good appearance at the opening of their new house. We may add that we cannot find, on inquiry, there is any foundation for the statement that some of the accepted pictures have not been hung.

**Visit of Working Men's Clubs to New Blackfriars Bridge.**

The third visit of clubs affiliated to the Working Men's Club and Institute Union, to buildings and public improvements in progress in London, was made on Saturday last. The previous visits were to the works of the Holborn Valley Improvement and those of New St. Thomas's Hospital. On this occasion the works of Blackfriars Bridge, now closely approaching completion, were inspected. Mr. Edward Hall, F.S.A., architect, a member of the Council of the Union, as before conducted the party; which included, besides about one hundred members of working men's clubs, Mr. Hodgson Pratt, one of the honorary secretaries; Mrs. Pratt; Miss Smith, Assistant Secretary; Mr. James Hole, of the Council; Mr. R. N. Wornum, Mr. Coningsby, and others. Previous to the inspection the visitors were assembled in one of the workshops, when Mr. Hall delivered an explanatory lecture, entering into the conditions to be regarded in the design of a bridge, and different systems for the construction of bridge-foundations. Having noticed the different formations of the substructure of bridges, Mr. Hall spoke of the superstructures, when he referred to the changes involved in the use of cast-iron, and afterwards wrought-iron, whereby the opposite requirements of easy gradients and heights for the passage of vessels were most easily reconciled.

After the lecture, which occupied more than an hour in delivery, the party proceeded to the works themselves, where Mr. Hall pointed out such portions of the construction as he had referred to, and were above water, as well as the construction in progress for the connection of the Thames Embankment with the bridge. It is to be regretted that these two great metropolitan improvements are not more harmonious in plan.

The Embankment now cants in to the abutment of the bridge—the total water-way provided at the bridge being greater than that of the river where is the straight portion of the Embankment. The first design for the bridge had the abutment corresponding with the general line of the Embankment; and it may be reasonably assumed that the architects of the bridge are not responsible for the present arrangement, which provides a face of the Embankment exposed to the almost direct force of the tide, and a corner for the deposit of silt and the accumulation of the various refuse floating on the Thames. The proceedings on Saturday concluded with votes of thanks to Messrs. Joseph Cubitt and Henry Carr, the architects of the bridge, and to Mr. Bryant, with a warm expression of acknowledgment to Mr. Hall.

**The Dudley Gallery.**

The Committee of the Dudley Gallery held their annual dinner on the 29th ult. at the Star and Garter, Richmond. There were present a considerable number of the members of the committee and their friends. The Chairman (Dr. Hamilton), in proposing the toast of the evening, 'Success to the Dudley Gallery,' stated that, since the commencement of the undertaking to the present time, there had been sold at the Gallery works to the value of over 18,000*l.*—a sufficient evidence of the advantage of the institution. The toast of 'The Royal Academy' was responded to by Mr. Wells, A.R.A., and that of 'Architecture' by Mr. Edis. The health of the Chairman, which was very warmly received, was proposed by Mr. Leslie, A.R.A.

**Discovery of Roman Pavement in London.**

A very interesting Roman tessellated pavement has been discovered in excavating for the new street opposite the Mansion House. The portion at present uncovered, and which will not long remain untouched, is about thirty feet square, very perfect, and with a beautiful design worked on it in alternating red, black, and white stones.

**Mr. Thornycroft.**

Her Majesty the Queen, accompanied by the Princess Louise, has paid a visit to the studio of Mr. Thornycroft, the eminent sculptor, and critically examined the model of the equestrian statue of Her Majesty which Mr. Thornycroft has in hand for Liverpool. The statue is to be placed near that already erected, in memory of H.R.H. the Prince Consort, in front of St. George's Hall. We hear great praises of the Princess Louise's knowledge of art.

**General.**

**Monument to Bishop Lonsdale.**—A monument has just been erected, in Eccleshall churchyard, over the grave of Bishop Lonsdale, by the members of his family. It will be remembered that the late Bishop was buried on October 24, 1867, in a spot, chosen by his friends, at the north-eastern corner of the churchyard, near the iron wicket leading into the Castle grounds, and through which he was accustomed to pass on his way to church. The monument is in the form of a memorial cross, belonging to an early period of church architecture, and similar in design to many that are found in this country, and still more commonly met with in Ireland. It rests on an octagon base of grey Aberdeen granite, rising two steps, and measuring 8 ft. 4 in. across. In the centre of this base is fixed a square block of the same material, with the sides sloped away from the top. Out of this block or plinth springs the shaft of the cross, the upper limbs of which are connected by a circle. With the exception of the octagon base, which is tooled down perfectly smooth and level, the whole of the monument is highly polished, and the front boldly engraved. The contrast between the dark blue colour of the polished granite and the light grey tint of the unpolished base is striking. The monument measures about 11 ft. 6 in. in height. A short and simple inscription is spread over the sides of the plinth beneath the shaft. On the east side or front, facing the walk, is engraved the Bishop's name, showing the spot where he is buried; on the north side, towards the Castle, is stated the length of his episcopate; on the south side, opposite the church, is inscribed his age; and on the west side, or back of the monument, is recorded the date of his death at Eccleshall. The whole of the stone was wrought, polished, and engraved at Messrs. Fraser's Granite Works, Aberdeen, under the direction of the contractors, Messrs. Bevers, of Southwark. The site is not all that could be wished, being too low, and too near the boundary fence to admit of a favourable front view; but, in spite of this disadvantage, the monument is effective and successful. It is massive without being heavy, plain and yet handsome. Thoroughly Anglican in character, and free from all foreign peculiarities, it is a good example of this kind of monument for an English churchyard, and reflects credit on the eminent architect, Mr. Gilbert Scott, by whom it was designed.

**Coming Art Exhibition at York.**—The Exhibition will probably take place in the Lecture Hall, Goodramgate. Some alterations will be made by which the gallery will be rendered available for the exhibition of paintings and sculpture. The saloon will be reserved for philosophical instruments, scientific apparatus, and educational appliances, and for occasional popular lectures. The space under the galleries is to be fitted up with stalls, at which ladies will preside, and with cases for the display of goods by local exhibitors.

**The Royal Academy and the Exhibitors.**—Mr. Moy Thomas, in a letter lately published, contradicts the statement made by the Committee of Arrangement that all the pictures accepted by the Council were duly placed. Mr. Thomas says he is ready to furnish the names of artists whose works were classed neither in the 'doubtful' nor 'rejected' category, who received and are still in possession of the customary season tickets, inscribed with their names, as exhibitors, but whose pictures have not been hung. In making this assertion, Mr. Thomas disclaims entertaining a feeling of hostility towards the Academy, whose difficulties this year, he says, are well known.

**The Institution of Civil Engineers.**—At the closing ballot for the Session 1868-69, held on Tuesday, the 11th inst., Mr. Charles Hutton Gregory, President, in the Chair, eleven candidates were balloted for as Associates, and declared to be duly elected, viz.:—Mr. John Henry Abbey, Borough Surveyor, Huddersfield; Mr. Edward Brotherton Carroll, Locomotive Superintendent, Bombay, Baroda, and Central India Railway; Mr. James Farrar, Engineer to the Bury (Lancashire) Improvement Commissioners, &c.; Mr. Frank Garrett, Leiston; Mr. Henry Newson Garrett, Leiston; Mr. James Howard, M.P., Bedford; Mr. Harry Edward Jones, Engineer of the Wandsworth Gas Works; Mr. Thomas Miller, Ipswich; Mr. Frederick Peck, Furnival's Inn; Mr. Henry Minchin Simons, Bowling Iron Company; and Mr. James Williams, Secretary of the Midland Railway Company.

**Proposed Industrial Exhibition.**—It is proposed to hold an industrial exhibition at Andover in July, for which purpose the Mayor has kindly granted the use of the Town Hall. The success attending a similar exhibition at Abbott's Ann last year has prompted the committee to hold another for the united neighbouring parishes of which Andover is the centre.

**A Clock of superior construction,** with bell of great power, and four dial plates, is to be placed in the tower of the new Market and Corn Exchange, Shrewsbury.

**Chelsea New Bridge.**—Since this bridge was opened in 1858 the expenditure for repairs and maintenance has been 28,946*l.* 4*s.* 3*d.*

**MEETINGS OF TECHNICAL AND LEARNED SOCIETIES.**

**ROYAL INSTITUTION OF GREAT BRITAIN.**—Friday, May 21. Prof. H. C. Fleming Jenkin, F.R.S., on the 'Submerison and Recovery of Sub-marine Cables in Deep Water.'

**ROYAL ARCHÆOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.**—The next monthly meeting will take place at 4 P.M. on Friday, June 4.

**ROYAL INSTITUTE OF BRITISH ARCHITECTS.**—Monday, June 7. Ordinary Meeting.

**ASSOCIATED ARTS INSTITUTE.**—Saturday, May 29. By Lemon H. Michael, Esq., on 'True Nobleness in Art.' And Annual Meeting.

**THE ARCHITECTURAL ASSOCIATION.**—Friday, May 28. Rev. H. M. White, M.A., on 'Taste.'

**STATISTICAL SOCIETY.**—The Seventh Ordinary Meeting of the present Session will be held on Tuesday next, the 18th inst., at Eight, when a paper, by Mr. Samuel Brown, 'On the Statistics of the Netherlands,' will be read.

**THE INSTITUTION OF CIVIL ENGINEERS.**—There will be no meeting on Whit-Tuesday.

# The Architect.

## THE PAINTINGS AT THE ROYAL ACADEMY.

By EDWARD W. GODWIN, F.S.A.



UNTIL the rejected works have been seen, it is quite impossible for anyone to say whether the selection of paintings for this year's Exhibition at the Royal Academy has been founded in justice and wisdom, or in favouritism and prejudice. If the selection has been both wise and just, very remarkable indeed must be the pictures which are as yet invisible. Let us fancy, if we can, for one moment, anything worse than Mr. Calthrop's 'God's Acre' (38), Mr. Cope's 'Domestic Chaplain,' Mr. Frith's 'Altigidera,' or Mr. O'Neil's astounding contributions. One cannot complain at all of the appearance of wasted wall space which the galleries present, when we see such pictures as these, believing at the same time that in their selections the Council of the Royal Academy have acted neither unjustly nor ignorantly. It may be noted that of 1,081 drawings, miniatures, engravings, and etchings, there are 173 portraits, and in this calculation I do not include those portraits of models which go under *convenient* Italian names—so that it may readily be seen how easily one, or even two, rooms of the eleven now occupied might have been shut up altogether. The 'Lecture Hall,' now temporarily fitted up as an exhibition room to receive the odds and ends of the show, might very well have been left alone as originally designed; the only result of Mr. Sidney Smirke's officious offer on behalf of his professional brethren, i.e. to give up the architectural rooms to the painters, and let the architects go with the odds and ends, is, that the public is bored by more bad paintings than it otherwise would have been. Whether the selection has been just or unjust, no one can accuse the hangers of being otherwise than fair, except perhaps where they have exceeded the bounds of fairness, and have been forgetful of themselves. The hanging has never been more faithfully done, and probably never so wisely. For example, portraits as a rule are placed above the line, and Mr. Sandys' 'Medea,' rejected last year, is not only accepted, but is placed on the line in company with Mr. Lewis's 'Seraff,' and Mr. Orchardson's 'Duke's Antechamber.' If easel pictures are to be painted, Mr. Sandys will show us how they are to be treated, viz., as precious objects set up by themselves, as we would set up a precious enamel or glorious goblet—objects which might endure even when the surrounding walls had developed into fitly painted and sculptured architecture; for I need hardly say, that in any well-decorated house it would be impossible to find shelter for that rough-and-ready scene-painter's style of art which is so popular—popular because it serves as well as anything else to cover up ugly blank walls, and it supplies the material for the photographer and engraver. I need hardly say that there are very few pictures in the Royal Academy which can be looked at, apart from their trade value, as precious objects. Apart from the *painting*, most of which seems to have been done from a desire to cover as much canvas as possible, the subjects chosen are either positively unpleasant or weak. Even the best works are what ladies call 'dreadful,' or have little in them besides drawing. The great majority are vapid in the extreme. Take, for instance, the watery sentiment in Mr. Barnes's 'Last Rose of Summer,' and Mr. Frith's 'Hope and Fear.' These are by no means exceptional instances. The historical, or *historical incident* subjects, have also their weak—very weak—representatives, to wit, Mr. Cope's 'Price of Victory' (46) and Mrs. Ward's 'Scene from the Childhood of the Old Pretender.' Of 'religious' subjects there are very few illustrations, and these, with one or two exceptions, look as if they had been designed for the publisher of a cheap Bible. Very different is it with what may be called the *religious sentimental*. The old sad story told by Mr. F. Holl in 210, and the memory of home and scenes long forgotten which Mr. Faad has managed to infuse into the face of the handsome woman at 119, are amongst the few recollections which will have a humanising effect after the Exhibition has become a thing of the past. Those painters who have been inspired by the classical or mythological have been generally more successful; for, if the meaning be here and there somewhat vague, it must at least be conceded that the drawing and composition are mostly the results of strong artistic

judgment. As a contrast to this, one of the most sorrowful sights in the new galleries is to be found in the evidence of the worn-out powers which certain artists so clearly declare by their pictures. The sorrow of it makes a man keep silence who might otherwise be compelled to speak hard things ament the vineyard and the labourers therein. I propose now to take in detail some of the pictures in the five rooms to the left of the entrance.

In Gallery No. 1 there is nothing of sufficient importance to detain us very long. The pictures to be seen in it are (4) 'Under the Wall of Maestricht; Arrival of a Canal-Boat,' by C. N. Hemy; (7) 'Sister,' G. A. Storey; (15) 'The Arab Story-teller,' J. E. Hodgson; (23) 'Loch Coruisk,' J. MacWhirter; (30 and 32) Sir E. Landseer's masterly studies of lions; the water and the sky in (45) 'The Return of the Dove,' G. F. Watts; the Japanese dress in 49, Miss J. Escombe; (51) 'Salmon Poachers,' H. Moore, and (60) Mr. Stone's illustration of an event in the life of the Princess (afterwards Queen) Elizabeth. This last is the only one of the ten just mentioned which afforded the artist an opportunity of showing any power he might possess as a wall painter. I regret to say that the opportunity has not been seized. That the story, or historical event, or whatever Mr. Stone likes to call it, has been told—and that, too, somewhat completely—is undeniable. That the picture will engrave well and be popular is also pretty evident. That Mr. Stone has exercised great research, and is wise enough to picture things as they appeared to the actors in his scene—and not as Mr. Archer, and most artists paint them, in the time-worn condition of a few centuries later, or as we now see them—is also noteworthy; but with all this Mr. Stone has failed to produce either a monumental or decorative work, i.e. a work which would bear translation to a wall. I have said thus much because this painting would at first sight attract what may be called the professional sympathy of architects in search of wall painters.

In Gallery No. 2 the most interesting pictures, from an architect's point of view, are those by Mr. Marks, Mr. J. F. Lewis, Mr. Princep, and Mr. Orchardson, all of which show qualities eminently to be desired in the painters who are to decorate our architecture. I may be wrong in including Mr. Lewis, for it is quite possible that his somewhat finicking method has become a habit of life with him, and that he is one of the few who should be told off to do easel pictures, as things to be looked into. 'The Minstrels' Gallery,' (69) H. S. Marks, must have been originally designed for a wall painting; and having said this, it is impossible to give it greater praise. The colour is not all one would desire; for, like a number of his brethren, Mr. Marks has the faculty of putting it on so that even the purest and the brightest of tints seem affected by a sort of fine charcoal dust. (91) 'A Siesta,' is by Mr. V. Princep; who, if he would and could paint a series of reclining figures as well as he has arranged this one, might, with a little caution, decorate the upper portion of a high room. I say 'upper portion,' because in this, as in all his works, there is an un pardonable coarseness—by the way, the bronze fountain does not help the composition. Mr. Orchardson ought to be our next R.A. 'The Duke's Antechamber' (103) is altogether good; good in subject and in sentiment; good in colour and in composition; good dramatically, for every figure tells its story; and good monumentally, for it would not be difficult to translate it into a noble wall decoration. I have already spoken of Mr. Sandys' 'Medea.' Architects will be especially thankful to this painter for the *manner* in which he has treated the story of Medea. All great artists—Greek, Japanese, or Mediæval—would have treated it in much the same manner, viz. by adopting a strong conventional background and by the free use of symbols. I can quite understand that this free use of symbolism, combined with the gold background and its very conventional wood and fleece and ship, should have led the Council last year to reject it; that they should have repented this year, when there were so many claimants at their doors, is a sign of wonderful promise.

In Gallery No. 3, or the large gallery, the few good things are almost swamped by the vast number and the huge size of the bad things. Sir E. Landseer's 'Swannery invaded by Sea-Eagles' (120) holds its place midst good and bad by virtue of the grandeur of its drawing and composition of form. Of colour there is little or none, and the dull browns and greys which make up what little colour there is, are put on in the most sketchy way. Here and there, as in the eagles' heads and swans' feet, there is more work and greater results, but if Sir E. Landseer has seen everything in an eagle's head and beak, why could he not have shown it us, and why omit such a line as that which occurs in every eagle's beak? Mr. Hook has left



the sea for the land: (124) 'Cottagers making Cider' is a very unsatisfactory painting. The poor cottagers look as if they had been compelled to make cider before Mr. Hook and a distinguished company. Mr. Calderon's best work this year is to be found in (128) 'Sighing his soul into his lady's face;' but why should a background of foliage be flicked in after the manner of busy scene-painters? 'The Disgrace of Cardinal Wolsey' (130), by J. Pettie, is a fine work, and if Norfolk were a trifle less comic in his mock courtesy, the picture might be described as very fine. Mr. G. D. Leslie gives us something very tender and beautiful in 'Celia's Arbour' (133). Mr. E. Gill has pictured (141) the 9th verse of the 1st chapter of the book of Genesis. Mr. Mason, in a few small frames, chiefly in 153, shows intense sympathy with nature, not without a certain dash of sadness. Mr. Elmore is at his greatest in 'Katherine and Petruchio' (164). Note the impatient foot of the shrew. The composition looks as if it might be made decorative. In the centre of the wall, opposite Sir E. Landseer's 'Swannery,' we have Mr. Maclise's sole contribution, 'King Cophetua and the Beggar-maid' (171). Admirable in drawing and decorative in composition, but having no purity or beauty of colour, and quite devoid of texture, the tent, the flesh, the armour, the leaves, and even the pie-crust, are all uniformly woolly; whilst the colour looks as if the sketch has been finished in charcoal, which the artist, in his subsequent process of painting, had never been able to eradicate. Mr. E. Frère's charming picture of 'La Glissarde' (183); and the colour and painting in Mr. Millais' portrait of 'Mr. Lehmann's Daughter' (127), are things to remember.

In Gallery No. 4 there is a beautiful composition of children's heads by J. Sant (189). One of Mr. Faed's beauties, 'Letting the Cow into the Corn' (205), will probably be voted very pretty. Mr. J. Holl's work (210) 'The Lord gave, and the Lord hath taken away,—blessed be the name of the Lord,' is one of the best pictures of the year: the sentiment of it is so true and utterly devoid of anything which might be even suggestive of the maudlin. I have only space to note Mr. Hook's 'Boat' (217); Mr. Millais' portrait of 'John Fowler' (225); and Mr. Poole's 'Moonlight' (257), which ought to have a little recess to itself.

In Gallery No. 5 Miss Mutrie exhibits (270) some good flower painting, Mr. Armitage has a monumental-looking figure (272), Mr. G. D. Leslie is as usual tender and beautiful (281). In (295) 'The Commentator on the Koran,' Mr. J. F. Lewis again gives a genuine easel picture—to my mind by far his best. Note especially the right side of the picture, the tiles, &c.

## NOTES FROM ABROAD, No. II.

(FROM A CORRESPONDENT.)

OUR last 'Notes from Abroad' ended with our arrival at Genoa. 'Genova la Superba' well deserves her name. Although her streets are narrow, and her chief character is commercial, she is yet a superb city, truly a city of palaces; the principal streets, the Via Balbi, Via Nuova, and Via Nuovissima, resemble our own Pall Mall in the neighbourhood of the Club-houses, only the buildings are more grand and palatial in their character. In vain we imitate the Italian palaces of the sixteenth and fifteenth centuries; like all imitators, we fall far short of our models. Michael Angelo was right—the imitator is always in the rear; would that we could persuade all imitators, be they Gothic or classic, and their exclusive admirers, of this most certain fact. Amongst the finest palaces, we would particularly cite the Brignole, the Brignole Sale, the Doria Turai (now the Municipal Palace), and the Balbi. It is impossible without illustrations to convey an idea of the grandeur of these palaces; we may, however, cite, as their chief merit, great boldness and breadth of treatment in design and detail as regards the façades, and a vestibule with staircase and courtyard of very striking effect. It is a great honour for one man to have been the architect of at least ten of these palatial buildings, due, as they are, to the genius of Galeazzo Alessi, of Perugia; and it is also a credit to the painter Rubens that he should have been the first person, so far as we know, to publish the designs of them. It is, above all things, natural that the princely painter should have appreciated such princely works, and we strongly advise your readers to refer to his book, 'The Palaces of Genoa,' which we believe is to be found along with that of Gauthier in the library of the Institute, or in that of the Royal Academy. What personal pride and sense of social dignity must have actuated these great nobles of old, to induce them to erect buildings at their own cost which outvie the combined efforts of hundreds of our noblemen and gentlemen at the present day in their clubs! When we add, moreover, that almost all these palaces contain galleries of paintings of great value collected by their owners, a still greater idea is afforded to us of the magnificent spirit of personal aggrandisement which actuated these *gran signori* of the seventeenth century. Away from all these splendid buildings, in the western part of the city and close to the

seaside, as is only fit, stands the great palace of Andrea Doria, the great 'Principe,' the great Admiral of Genoa, who kept a fleet of his own of 22 galleys, and for his services in the cause of his country and, we fear we must add, of the Emperor Charles V., received this building as a public gift. The building itself, though vast, is marked by extreme simplicity; that which renders it particularly attractive to lovers of art, is its richness in paintings and decorations by Pierino del Vaga, to whom are due so many of the best arabesques of the Vatican, executed under Raphael's direction, and who, in his misfortunes, found protection and employment from the great warrior and statesman. The plan and style of his work are excellent, but the full value of it is lost, owing to its restoration of late years. It is still, however, full of interest, and not unworthy of the consummate artist who designed it. The gardens also are well laid out, and, with broad walks, fountains, and terraces, from which fine views of the bay are obtained, present a pleasant idea of the old Italian style of gardening. The great fountain, however, is marred by one of those stupid 'conceitti' of the later Italian School, in which the fine old Admiral is represented as Neptune triumphant, and, we need hardly say, in a state of most improper nudity. More interesting than this vast palace is the house in which Andrea Doria lived, the doorway of which is a richly-sculptured specimen of early sixteenth century work, of the same class as those we have already described at Savona. It is in the square of the San Matteo church, the burial-place of the Doria family, and is surrounded with old houses of great archaeological interest. As regards the earlier architectural buildings of this city, they have been much destroyed: one, however, remains, which in its façade presents some features of very high merit; the triple-arched entrance in black and white marble is fine and effective, and is rendered still more so by the broad flight of steps which lead up to it. This is one instance amongst many in which the old architects evinced their taste in a manner which is entirely lost sight of by our modern designers: the value of a base and gradual rise from which the main body of the building springs, and on which it rests, is indispensable for the due effect of any edifice, and is always, we think we may say without exception, to be found in the great buildings of mediæval Italy. The great west entrance of the Cathedral is certainly a noble design, and presents some remarkable works in sculpture, amongst which the twisted columns, clearly meant to represent twining boughs, since they have the branches lopped off still remaining, are very noticeable, as being amongst the earliest of their class, i.e., the commencement of the fourteenth century. This was the period of its restoration; but earlier and most remarkable portions of the first church, consecrated in the year 1118 by Pope Gelasius II., still are to be seen in the north and south porches, which are amongst the richest examples of their kind we have ever met with, and we regret exceedingly that no illustrations of them have yet been made.

Concerning the very rich Renaissance Chapel of St. John the Baptist, and the exceedingly elaborate shrine or 'capone of San Giovanni,' wonderfully worked in silver gilt by Daniel di Terramo in the fifteenth century, we have no time to dilate. Both chapel and shrine well deserve inspection, as being rich in sculptural and ornamental work of a very high order. We do not profess to do justice to the various beautiful works of art which the traveller will meet with here or elsewhere; we give merely notes by the way, and seek rather to stimulate curiosity, and induce students to travel and see for themselves, than to give a precise description of the admirable works which are so abundant in this land, which is a complete treasury of art, and would exhaust volumes of critical notices.

From Genoa we proceed by rail to Chiavari, a city remarkable for its arched streets, the columns of which are of antique type, and for its shipbuilding yards. It is a very beautiful and peculiarly picturesque place, where artists would find mines of work, and from here to Spezzia the landscape painter might while away months. We feel sorely tempted at this point, owing to the effect made on us by the town of Nervi, to dilate upon the propriety or impropriety of painting with various designs and colours the outsides of buildings. We confess that, logically, we can see no objection to the practice, if the climate admits of it. Why not paint the outside as well as the inside of your house? Any artist will tell you it is delightful; it makes the houses themselves picturesque, and gives colour to the landscape; and is not the artist the best judge of what is desirable and fit in such cases? In the mean time we are willing to admit that the practice would hardly suit our damp, foggy, and stormy climate; but in this sunny land it seems quite correct, and harmonises admirably with the surrounding scenery and bright sky. We should add, that even in the grand palaces of Genoa many portions are painted with architectural designs, and one noble piece of architecture, the palace Brignole *Rosso*, takes the name *rosso*, or red, from the deep rich brick colour with which it is entirely covered. We must not leave Genoa without saying a word about its modern buildings. Of these the principal are the railway station—a very fair piece of Italian architecture; and the great marble monument to Columbus, an ambitious and well-sculptured work, lately erected, as the inscription states, by 'Grateful Italy,' which does not appear very appropriate. It seems to us that Great Britain and America have more reason to be grateful to the great Genoese navigator than Italy; but we must not be hypercritical in such matters.

The next place of interest we come to is quiet old Pisa, in every respect a great change from noisy, lively-looking Genoa.

We come here upon street architecture of Tuscan severity; but the great point of interest is naturally the lonely field near the old walls, where stand in grey antiquity and solemn beauty the celebrated group of the Cathedral, Leaning Tower, Baptistery, and Campo Santo, of the respective dates 1063, 1174, 1153, and 1278. Externally, not one of them, if now erected, would receive an architect's approval, and yet they are full of charming effects. Not so, however, the interior of the Duomo, which is as fine a piece of architecture in composition, proportion, and colour as Italy possesses. It is unfortunately ruined, though, by the practice recently adopted in the churches of suspending an immense dark-coloured awning for about 50 feet up the central nave, to act as a sounding board for the preacher in the pulpit; and preaching now is uncommonly active here, as the priests feel the wicked world is against them, and there are powerful enemies abroad. As to the Campo Santo, it is full of works in sculpture and painting which alone would repay the student a visit to Italy; and as regards sculpture especially, quite a history of the art is to be seen within its walls. It has been excellently illustrated by Lasinio in his beautifully etched work 'The Campo Santo of Pisa,' to which the student is referred; whilst Cresy and Tayler's work on the architecture of the buildings themselves is very good in its way. As regards leaning towers, we have little new to say, except that from the badness of the foundation at Pisa, half earth, half sand, they are of common occurrence, that of San Nicolo being a very remarkable example. Speaking of towers reminds us that we have forgotten to mention the brick tower of Pietra Santa, a fine piece of construction, square in plan, with a circular stone staircase inside, resting on projecting courses of the main brickwork of the tower. At Pietra Santa also are to be seen several beautiful examples of Renaissance sculpture in the cathedral, principally by Stagi and Donatello. The marble pulpit by the former is an exquisite work, and deserves to be better known: in design and execution it is very graceful and effective. But to return to Pisa: no archæologist should fail to visit the church of San Piero in Grado, some four or five miles out of the town, for it is one of the most perfect examples remaining of an early Christian church. Tradition says that St. Peter landed here first in Italy, and the *grado*, or step, is that to which his galley was moored. It contains most remarkable fresco ornamentation of the eleventh century, ascribed to Giunto of Pisa, and the external walls are remarkable for the series of rough majolica pateræ which ornament them, and on which is to be seen a lively representation of the very vessel which bore St. Peter to the spot. It has been supposed that these coloured earthenware pateræ were brought by Crusaders from the East, but we think there can be no doubt that they were of local manufacture, and clearly in this case, owing to the subject just mentioned, were made to order: the patterns on them are also generally roughly Romanesque in character; and it is to be remarked that, besides the present church, fine examples of the same class are to be found on the walls of San Paolo l'Orto (one of the best specimens of Pisan church architecture), St. Andrea, St. Martino, Sta. Cecilia, and San Michele fuori le Porta, in the tower of which latter church, probably dating from the eleventh century, one very fine and large green platter (for that is in fact what they all are) attracts the eye particularly, and we think there can be little doubt that all these were made in the alluvial valley of the Arno, and were simply used as cheap ornamental substitutes for coloured marbles as employed in the Duomo and other of the more important buildings.

From Pisa to its old rival and final conqueror, Florence, the present capital is but a few hours' ride by rail, and we may find ourselves on truly classic ground: hardly a step but we meet with familiar and world-famed mementos; in this house Dante of immortal memory was born; here Michael Angelo lived and worked; here the many-sided Leonardo, master of all the arts and sciences; here Cimabue, Giotto, and Orcagna laid the foundations of all modern art; here Bufalmacco rested, and here Vasari wrote; Galileo dwelt here, and here Milton visited him. The names of Machiavelli and Guicciardini belong to the streets in which they lived; and amongst other tablets, which it is the good custom here to place on the houses where the greatest of our race have dwelt, we were much moved on meeting with one to the memory of Elizabeth Barrett Browning, whose works and sympathies made (so the inscription goes) a ring of gold to unite Italy and England. Lovely Florence! It was our first love, and still reigns supreme in our affections. City of flowers, and of beautiful and noble spirits! No city in the world can produce such an array of names to illustrate all that is admirable in art, and honourable to human nature. Florentine architecture also has always been our model of what is excellent in art. It may be *tant soit peu* severe, but how much better is that than the paltry frippery of such works as are now regarded as the pride of Paris, and even of London! Even if alone, we raise and will ever raise our voice against that wretched redundancy of ornament which is now the criterion of merit in architecture. The true excellences of our art, proportion and deeply-studied detail, count for nothing; and this, we regret to say, is in a great measure owing to the prevailing fashion of the day, the pseudo-French, German, and Italian Gothic works which alone the fashionable and half-educated public consider *comme il faut*. What is there in such palaces as those of the Strozzi or the Riccardi which can please such tastes as these? absolutely nothing. The public would look with a blank stare on the Palazzo Uguccioni and wonder what you can see to admire in it; and yet it is perhaps one of

the most beautiful productions of architectural art the world can boast of, be its designer Raphael or not. But our chief attraction is ever the building, now a sort of church, called Or San Michele, or 'now St. Michael,' for it was not originally intended for a church, and is quite unfitted for one in fact. Not only is it almost perfect as a building to our mind, but it contains moreover that triumph of architecture and sculpture, the shrine of Orcagna, which is quite lost by being placed in it. We do not think that human genius and the most careful mechanical execution can go beyond what is to be found in this truly beautiful work, designed and executed by Orcagna himself, of course with such assistance as was absolutely necessary, though it is related that he worked at the most minute details with his own hands. All the sculpture, which is the principal ornament of the shrine, is beautiful; it represents various episodes in the life of Jesus and of the Virgin; almost all of equal excellence. All the surrounding mouldings, with their ornaments, in which the pilgrim's shell is prominent, are most original, effective, and yet delicately worked; the whole forms a square of about 20 feet each way, raised on steps, each face having high gable ends, and in the centre was to have been, so it appears to us, a spire, but this is unfinished, bearing on a small scale some resemblance to St. Mary Redcliffe's at Bristol. Well might Orcagna be proud of this work, on which he has inscribed these words: 'Andreas lionis, pictor Florentini oratorii archimagister extitit (anò?) 1359.' This unique work of one artist has, so far as we know, never been properly illustrated; and the same remark applies to the building (Or S. Michele) itself, which is a noble piece of architecture, adorned with sculpture by the greatest artists of the fifteenth and sixteenth centuries quite worthy of it. It contains also many interesting mural frescoes now fast going to ruin, and the stained glass has all the richness of Bourges, Chartres, or Canterbury choir, with better drawing and clearer colour. The old Bargello or Town Hall and Prison has been converted into a Florentine museum; it has been carefully restored in parts, and newly decorated in others. We regret that the head of Dante by Giotto should have been quite renewed, though we think it has been very well done, and is very characteristic. Signor Cavalcaselle, who is so well known for his valuable works on Italian art especially, is keeper of the museum, and we have no doubt that everything which comes under his supervision is well carried out. There is no catalogue of the contents of the museum at present, nor is a description of it to be found in Murray, so we have made a *résumé* of its contents, which is, however, too extended for your Journal. Suffice it that some of the finest works of ornamental art belonging to the Medici, heretofore in the Uffizii, are now to be seen here. Majolica, rock crystal, ivories, furniture, and sculpture—in the last department the museum is particularly rich—and some of the pieces by the great masters of the Renaissance are unapproachable for their excellence, except by the Grecians of old. And indeed we strongly suspect that a good deal of Grecian and Etruscan blood still flowed in the veins of these dwellers in ancient Etruria. Were we to devote as much space to the subject as it deserves, we should never get on to the Uffizii and Pitti galleries of pictures and sculpture, now joined by the private passage belonging to the Medici right across the Ponte Vecchio. The wonderful beauties of these collections can never be surpassed; they are unapproachable, even by the riches of Rome, as a magnificent example of all the arts combined to raise and delight the mind of man. Let every one who loves art come here; to have seen and have studied them is a necessary part of every architect's education. We will not trust ourselves to a description of their combined attractions, for what description, however minute, could do justice to them? We say again, come and judge for yourselves; in these railway days it is a mere holiday trip. And not only are the buildings and their contents deserving of careful study, but the gardens of the Pitti Palace, known as the 'Boboli,' have always seemed to us a model of what is tasteful in an art too much neglected by architects of the present day, yet one which forms an important adjunct to their more legitimate work, and in which one English architect at least (Kent) excelled. W.

## THE NEW THEORY OF STEAM.

IT is not the contour of an animal or a machine (says a letter in a late issue of the *New York Tribune*) which determines its specific character; that arises from what is within. Configurations of the steam engine are being constantly modified without affecting its intrinsic qualities. Now in the essential points involved there is a real similitude between it and its natural forerunners, the animals. They are substantially alike. The leading characteristic of both is to produce and give out force; for not only do the same mechanical principles rule in both, but the fundamental one by which they generate power and impart it. Formerly muscular force was ascribed to vitality, or the element of life; but the fact has long been ascertained that, as respects the source of their physical energy, animals are as purely material machines as those constructed by ourselves. Thus writes Professor Henry, in the Smithsonian Report of 1866:—'In the early study of mechanical and physiological phenomena, the energy which was exhibited by animals, or, in other words, their power to perform what is technically called work, was referred to the vital force. A more critical study of these phenomena has, however, shown that this energy results from the mechanical power stored away in the food and materials which the body consumes; that the body is a machine for applying and modifying power *precisely similar to those machines invented by man for a similar pur-*

*poss.* Indeed it has been shown by accurate experiment that the amount of energy developed in animal exertion is just in proportion to the material consumed. . . . The combustible material may be considered the food of the steam engine. How is it, then, that in evolving equal amounts of force, we are said to consume from ten to twenty times more fuel than Nature? Chiefly because we run our engines with a fluid highly heated—so much so as to fuse metals—while she runs hers at ranges of temperature comparatively cool. We use it at 300°, 400°, and 500° F. She rarely exceeds 100°. In robust health our blood varies little from 98°. Raised to 110° we are inflamed with fever; langour, constitutional derangement, and laboured or hurried respiration ensue. (So superheated steam-engines are in constant exacerbation, burning up the vital fluid.) But can our popular motors be run with steam as low in temperature as the blood of the horse or elephant? Perhaps not at once—that would be too great a leap for the dull and indifferent to take, though not for the enlightened, aspiring, and energetic—but certainly they may in time approach it. That they can *now* use it considerably below 212°, with unexampled advantage, has been made evident. Let them do that, and ere long they will be started at 180°, the boiling-point of spirits; but ere reaching that point, they will have ceased to consume as much fuel for the power of one horse as should suffice for that of five or six horses.'

### OUR COTTAGE HOMES OF ENGLAND.

THE Report of the Rev. J. Fraser, the Assistant Commissioner appointed to explore the villages and rural districts of certain counties, contains some interesting facts concerning Sussex. He tells us that 'the majority of the cottages that exist in rural parishes are deficient in almost every requisite that should constitute a home for a Christian family in a civilised community.' In the district of Southwater, Sussex, an old farmhouse has been converted into a cottage, and the chimney is so huge that on a wet day the rain puts the fire out, and on a cold stormy day the inmates have sometimes been compelled to go to bed to keep themselves warm. Anything seems capable of being turned into a cottage. Sometimes the original article is a stable, where coach-horses were kept, before the railway drove away the traffic. Some of the worst of these places are 'parish cottages,' erected in the time of the old poor-law. Others, 'almost uniformly bad,' are cottages run up by squatters on the waste, or held upon a lifehold or copyhold tenure, and which have not yet fallen to the lord of the manor. Others again, constructed of the flimsiest materials, are the work of speculative builders. 'Open' parishes, like Docketing, in Norfolk, and South Cerney, in Gloucestershire, 'into which have been poured the scum and refuse' of the 'close' parishes adjoining, abound with some of the worst instances of improperly constructed and over-crowded dwellings. 'Socially, nothing can be more wretched.' Economically, the imperfect distribution of cottages embarrasses the farmer in his demand for labour. Physically, these ruinous, ill-drained cottages, small in the space which they afford, and crammed with occupants, are replete with danger to health, giving a ready home to fevers of every type, and intensifying the tendency to scrofula and phthisis, which already exists in consequence of low diet and frequent intermarriages. Morally, the results are of the worst. In such a home life is to be found the cause of other evils—the want of moral purity, which shows itself in the general conduct of thousands. So extensive is the evil that Mr. Fraser says out of the three hundred parishes which he visited he could only remember two—Donnington, in Sussex, and Down Amney, in Gloucestershire—where the cottages appeared to be both sufficient in number and admirable in quality. The poverty of the agricultural labourer and his consequent inability to pay more than a very small amount of rent may have much to do with the miserable character of his dwelling. But it is quite impossible that energetic, intelligent, and healthy labourers can be reared in these wretched abodes. Hence the present state of things is injurious to the master as well as the man.

### THE DRAINAGE OF TOWNS.

ONE of the most important questions of the day, touching as it does the health of thousands, is that of the drainage of towns, considered in conjunction with water supply. It is no longer to be borne that towns situated on the banks of a river should be allowed to turn their sewage into the stream, and thus pollute the water which is drunk by the inhabitants of other towns and villages lower down. This crying evil, which was acquiesced in in our English *laissez-faire* way for so many years, is now in a fair way of being rooted out of the land by the strong hand of the recent Acts of Parliament bearing on the pollution of rivers or on the utilization of sewage; and we shall probably be assisting in the good work by calling the attention of our readers to the subject.

Now that by the Acts of Parliament sewage will not be allowed to flow into rivers, except under stringent regulations as to its purification and deodorization, the great questions which have to be considered by towns situated as we have described are—

1. How is the sewage to be purified so as to combine efficiency and economy?
2. What is the value of town sewage, and how can that value be best realised?

The first question is susceptible of several answers; and each of these views of the subject has its advocates. The sewage may be purified by filtration, or by the precipitation of the solid matter, or by the extended use of Mr. Moule's system of dry-earth closets replacing the present water-closets. The value of Mr. Moule's adaptation of a principle which has been well known at least ever since the book of Deuteronomy was written, is undoubted. We do not think, however, that in it we can find a solution of the difficulties inseparable from the drainage of a large town, though in particular situations the earth closets may be most usefully employed.

The difficulties attendant on the carting to and fro of the earth for a town are very great, and the larger the town the greater the inconvenience

becomes. Water, as we all know, has the quality of rising, either by pumping or by natural gravitation, to the tops of our houses, where it remains a quiescent power until required; when called upon, it is at once available to carry solids downwards and away from the house or town. This circumstance of water being a convenient means of transport will, we think, always give the water-closet system an advantage over the dry earth invention, even if all other conditions were equal. It is to be recollected, moreover, that the waste water of a town has to be provided for even if Moule's earth-closets were universally in use, and so a double system would be necessary. The cost also to each individual householder of an alteration of system would be serious, and would alone present great difficulties in the way of its adoption.

We think, for these and other reasons, that in the present state of things we must devote our attention to improving the existing system of drainage, and we proceed to consider the two processes of dealing with liquid sewage, viz., by precipitation and by filtration.

The precipitating process is by no means free from difficulties. A good precipitating agent has to be found which will combine efficiency, cheapness, and ease of transport, and further, in the use of this agent more or less skill or mechanical contrivance is required. Then, after the solids have been precipitated, they have to be got rid of. The value of them as a manure is a moot point, and, in order that they should be employed in agriculture, they must be sold at such a price as will render farmers ready to pay for cartage from the spot, where the precipitating process is carried on, to the land to which they are to be applied. Here the manure obtained by precipitation comes into direct competition with guano, ordinary farm and artificial manures. Further, it is very doubtful whether the precipitating process removes all noxious qualities from the sewage, so that even if it be economical, which we much doubt, its efficiency is not beyond dispute.

Many of the objections to the precipitating process apply also to the filtration process, so long as it is carried out (as is generally understood by the term) in artificially constructed filter-beds, where the system presupposes a concentration of sewage at particular points. In the filtration process, however, we believe, the true answer to the first question is to be found; but, in saying this, we would draw a sharp line of distinction between an artificial filter bed, and the great natural filter which we possess in land under cultivation. Concentrating the sewage at any point on artificial filter-beds involves us in a cloud of difficulties, to some of which we have briefly alluded in the consideration of the precipitating process. The reverse, viz. diffusion of the sewage over a larger area of land, proportioned to the size of the town from which the sewage comes, gets rid of nine-tenths of the objections. And, moreover, if utilization of sewage is to be a commercial success, this process promises the best results. There can be little doubt that the more rapidly the ingredients of sewage reach the plant which they have to manure, the greater will be their fertilising power, and there is, we believe, no process by which the rapidity of transport is so well ensured as by letting the sewage flow directly on to the land in which the plant is growing. Thus, no system can be so economically successful as that which combines filtration and utilization at one spot.

If we were asked to describe the beau idéal of an efficient sewage filter-bed, we should indicate one that thoroughly separated solids and liquids, that stored up all the valuable ingredients for future use, that deodorized and purified the sewage during the process of separation, and that never required renewal or repair. Land under cultivation with proper subsoil drainage furnishes all these desiderata, the one condition being, that the sewage should be diffused over a sufficient area to prevent any particular spot being overcharged, or, so to speak, that the filter-bed should be large enough and efficiently handled.

The solution of the first question, *How is the sewage to be purified so as to combine efficiency with economy?* is, we believe, to be found, as we have indicated, by applying the sewage of a town just as it comes away in the sewers to land in cultivation and in suitable positions, but not in any process of precipitation, or artificial filtering. The earth is the best of filter-beds, and the most powerful of deodorizers—Mr. Moule's earth closet testifies to its efficiency in its latter capacity, and the difference between the spring water in our wells, and the surface rain water which is their source of supply, shows us the earth's filtering power. The sole condition, as we have said, is, that a sufficient area of land should be used; and fortunately we have the results of experiments to guide us as to the proper quantity. This question of area is so much mixed up with the cost of any system combining purification with utilization, that we will consider it under the head of the second point for enquiry, viz. *What is the value of town sewage, and how can that value be best realised?* We have already, we fear, in treating of the first question, over-taxed the patience of our readers, and therefore we will reserve our remarks on these points for a future occasion.

### REVIEWS.

TREE AND SERPENT WORSHIP; OR, ILLUSTRATIONS OF MYTHOLOGY AND ART IN INDIA IN THE FIRST AND FOURTH CENTURIES AFTER CHRIST. From the Sculptures of the Buddhist Topes at Sanchi and Amravati. Prepared under the Authority of the Secretary of State for India in Council. With Introductory Essays, and Description of the Plates, by James Fergusson, Esq., F.R.S., M.R.A.S. London: India Museum, 1868; W. H. Allen & Co., 13 Waterloo Place, Publishers to the India Office.

The public of England are indebted to the able perseverance of Mr. Fergusson on the one hand, and the liberality of the Secretary of State for India in Council on the other, for the magnificent volume which has been recently published on the subject of the remains of two Buddhist temples in India, which, as well from their former splendour as their amplitude of materials for illustration, have been selected as the best exemplifications of a once widely-spread and extremely curious form of adoration. The columns of THE ARCHITECT may hardly, perhaps, be considered a place for the notice of a subject so profound and so abstruse in antiquarian character as Tree and Serpent worship; and yet without some review of it,



the work itself, and its very beautiful and profuse artistic illustrations would be almost incomprehensible.

In Mr. Fergusson's exhaustive Introduction to the work, he has traced Tree and Serpent worship not only to every portion of the Old World in ancient times, but to the New. When and where, or how it may have originated, and how it spread so as to become a portion of ancient Pagan belief over the greater part of the globe, it is impossible to conjecture; but those to whom the subject has any interest will be gratified by the extreme completeness with which Mr. Fergusson has brought all points connected with it, and many original observations in its elucidation, before his readers. In relation to the Christian faith and its predecessor the Jewish, they will find the worship of the serpent traced from the brazen effigy to which worship was paid in the wilderness when the plague was stayed, to the period of final discountenance of adoration in the time of the Prophet Ezekiah, a period of six hundred years, to be renewed by the Ophite sect of Christians, who, according to Tertullian, preferred belief in the serpent to that of Christ, because the former brought into the world the knowledge of good and evil. Again, in regard to groves and trees, from the sacred bush or tree of Horeb to the sacred groves of Baal, and those planted by King Ahab and his successors, which were denounced by the prophet Isaiah, Mr. Fergusson's record is most complete.

Into Phœnicia and Mesopotamia, and thence into Greece, Mr. Fergusson follows this curious subject with a profusion of learned illustration and reference, of which it is impossible, with the limited space at our disposal, to give even an abstract. Nor is it necessary, indeed, to recapitulate the familiar classic legends of the destruction of the Python by Apollo, or the conversion into serpents of Cadmus and his wife as a 'cure for ills that had become unbearable.' Of actual serpent worship in Greece there is ample confirmation; and Mr. Fergusson, as we consider with reason, attributes it to the fact that an old 'Turanian serpent-worshipping race in Greece were passing away to make place for one of Aryan form;' and yet, for many centuries, the old superstitions, whether as to hallowed groves or serpents, remained unchanged.

In Rome we find less evidence of serpent worship, but specimens of coins are given on which are serpent emblems, indicative, perhaps, of power or wisdom. In Germany the Aryan element was too strong for the admission of serpent adoration; but of tree worship in sacred groves the evidence is conclusive, from the period of Cæsar's wars till long after the people became Christian. Our readers may not be aware that, according to Mr. Fergusson, 'one of the last and best known examples is that "Stock am Eisen" in Vienna, the sacred tree into which every apprentice, before setting out on his "Wanderjähre," should drive a nail for luck. It now stands in the centre of that great capital, the last remaining vestige of the sacred grove round which the city has grown up, and in sight of the proud Cathedral of the Christian which has replaced its more venerable shade;' and he adds in a note, that the festival of the Christmas tree, at the present day so common throughout Germany, is almost undoubtedly a remnant of the ancient superstition.

In Sarmatia, as late as 1386 A.D., we learn, according to Olaus Magnus, that the Poles worshipped as gods fire, serpents, and trees; and that serpents and trees were adored by the peasantry in Esthonia and Finland within the limits of the present century is perfectly established by the work of a local pastor, J. W. Bocclir, who details the invocations to serpents used in the Finnish worship. Through Scandinavia and France the record continues with the same profusion of learned research and illustration. Mr. Fergusson is avowedly sceptical upon the subject of Celtic Druidism in England; but he does not deny that serpent worship may have prevailed in Wales when it had disappeared elsewhere, and he admits the existence of adoration of sacred trees and groves. Passing by the vexed questions of the antiquity and purpose of Stonehenge, Avebury, and other English Temples, we gladly notice his admission of Serpent worship in Scotland, and his descriptions of the stones on which serpent emblems are carved, though he seems to attach no particular antiquity to them.

In Africa, as part of Fetish worship, Snake and Tree adoration flourish at present. 'In Whidah the three classes of gods worshipped are Serpents, Trees, and the Ocean, the same Trinity as was established in the Erechtheum in the Acropolis of Athens more than 3,000 years ago.' Unaffected alike by Christianity or Mahomedanism, the most unchanged portion of the African population have preserved all the rites of this faith. 'It may be very horrible,' writes Mr. Fergusson, 'but as far as we at present know, it is the oldest of human faiths, and is practised with more completeness in Dahomey than anywhere else, at least in the present day.'

Want of space alone prevents our following the author through Mexico and North America generally, where proofs of Snake worship are very abundant, into Persia, Cashmere, Cambodia, China, Oceania, and the Feejee Islands, and Australia, Ceylon, and finally India. Here Mr. Fergusson finds it very difficult to define the original Serpent worshippers. They were not certainly Aryan invaders, and may have been a portion of that great Turanian race who, probably before them, had possessed themselves of the southern portion of India. The 'Nagas' or Serpent race, as related in the Mahabharut, were subdued by the Aryans and became subject to them, and in 691 B.C. a Naga or Serpent-worshipping Dynasty held the throne of Maghada in Bengal. In 623 B.C. the great Buddha was born, and the Serpent faith became gradually incorporated with the doctrines preached by him and his successors, under the denomination of Buddhism; and when that creed was adopted by the people of Middle and Southern India, the descendants probably of that ancient Turanian race already alluded to who had settled there, they seem to have retained their ancient superstition.

As part of southern Buddhism, therefore, the Snake and Tree worship undoubtedly existed; and it is there that up to the present day it is maintained among the lower orders, who are possibly the mixed descendants of the ancient Turanians. These people are no longer Buddhists, but Hindoos; and though Buddhism has been extinct among them for upwards of a thousand years, the Tree and Serpent worship are still existent, underlying the comparatively modern faith of Hinduism.

The Tope at Sanchi, one of the group described by General Cunningham's work on the Bilisa Topes, was a monument built to enshrine relics

of Sariputra and Mahā Mogalava, two of the principal disciples of Buddha himself. The date of erection is nearly of the first century after Christ, a period in which architecture may be said to have been commenced in India. We need not here enter into particulars of the earliest specimens of the science in India; they will be best learned from Mr. Fergusson's History of Architecture, wherein its progress from the imitations and principles of wooden edifices, in the Adjunta and other Buddhist Cave Temples, to its development into actual building, are clearly given. The first efforts in stone were on the mortice and tenon principle of wood. Two pillars were erected, and across them was laid a beam of stone. Multiples of these in squares produced a building, as we see in Karnac and Dendera in Egypt, and in all the most ancient structures in India and in Greece, and it is beside the present question to claim for it an Egyptian or Indian origin, though few, perhaps, will doubt the Egyptian. The illustrative photographs of the Sanchi Tope, and the diagrams of its construction, explain its structure perfectly. It consisted of a hollow truncated hemisphere, built of stone and mortar, and is probably the earliest form of dome in existence. Mr. Fergusson attributes its form and construction to Turanians of Bactria, whence they can be traced by their tree and serpent worship, not only to India, but to Cambodia and Java.

But the architects of the Sanchi Tope, though their principles of construction were limited and rude, possessed the faculty of ornamental embellishment in a very remarkable degree; and it is impossible to examine the minute details of their work without being deeply impressed with the grace and vigour of the execution of figures, groups, processions, friezes, &c., with which the northern, eastern, and southern gateways abound. There is nothing extravagant or repulsive about them, as is the case with much of the Hindu architecture which followed. The whole is harmonious, and in many respects of great elegance, as is shown in the photograph plates, No. 13, 14, and 15, of the eastern gateway. Almost all the groups are illustrations of tree and serpent worship, and represent devotees in varied attitudes making offerings to the object of adoration. It is impossible here to describe these groups, which are fully explained by Mr. Fergusson, and we must refer our readers to the plates and their descriptions, which we are assured will amply gratify them. In the Sanchi Tope the beautiful drawings by Colonel Maier have been photographed for this work; and their admirable spirit and correctness will be best proved by comparison with the photographs from actual remains.

The Tope at Amravati is of similar design with that of Sanchi, but its date is three centuries later; and it is evident from its details of sculpture how materially the native artists had improved both in the design and execution of its ornaments. There is no advance in, or alteration of, the principles of construction. In the details we see the pillars with capitals and crossbeams applied to all, as well to the facing of the external enclosure as to other portions. Of the amazing extent of the work of embellishment Mr. Fergusson writes as follows. He is speaking of the outer rail, as it may be termed, of the inclosure of the Amravati Tope:—

'There were apparently twenty-four pillars in each quadrant, and eight at least in each gateway—say, 112 to 120 in all. This involves 230 to 240 central discs, all of which were sculptured; and as each of these contains from twenty to thirty figures at least, there must have been in them alone from 6,000 to 7,000 figures! If we add to these the continuous frieze, and the sculptures above and below the discs on the pillars, there were probably not less than 120 to 140 figures for each intercolumniation—say, 12,000 to 14,000 in all. The inner rail contains probably even a greater number of figures than this; but they are so small as more to resemble ivory-carving. But except the great frieze at Nakon Vat, there is not perhaps, even in India, and certainly not in any other part of the world, a storied page of sculpture equal in extent to what this must have been when complete. If not quite, it must have been nearly perfect, in all probability, less than a century ago.'—P. 166.

We have not only Mr. Griggs' admirable photographs in illustration of these sculptures, but some of the actual sculptures themselves, now in the India Museum. How rich and elegant their discs or bosses are, how varied in detail, how perfect in design and execution—our readers can judge for themselves by plates 50 to 55. Sometimes in conjunction with the most graceful female figures, again with dwarfs and grotesque monsters, or with rich foliage, there is an exuberance of fancy displayed in all, which throws into the shade the most florid of Gothic ornamentation. Plates 58 to 62 are even richer and more wonderful, for in them groups of figures take the place of ornamental geometrical designs, and are full of grace and character. Nor were we to attempt, which would be impossible, any particular descriptions of remarkable objects, could we say more than that they possess a charm which no Eastern sculpture has ever yet afforded us. There are great variations of design and of execution as might be expected, and the designers and sculptors have not always been equal in merit. It is probable, too, that the execution extended over a long period, possibly a century or more, portions being gradually added by devotees, without, however, interfering with the general design; but, taking them as a whole, they are truly wonderful specimens of art, of a period in India as yet little known to art history, and in its own degree as wonderful as that of Greece or Rome. Mr. Fergusson considers indeed, p. 221, that 'we can now assert with confidence that all the permanent forms of art arose in India, after its inhabitants were brought into contact with the Grecian kingdom of Bactria. It seems probable that such sculptures as we have of Asoka's reign were actually executed by Grecian, or at least by Yavans, artists, and from his time (250 B.C.) to the present day we can trace the rise and fall of Hindu art, almost without a break.'

We must, however, bring these remarks to a close, only regretting that we are unable to notice every point with which we have been interested and instructed in this very remarkable book. The labour with which it must have been written—step by step in regard to serpent and tree-worship—the immense mass of authorities, ancient and modern, which have had to be consulted; the fine taste and architectural scientific acquirements which have been brought to bear upon its production, entitle its author to the respect and admiration of all true lovers of art, as well as of all antiquaries and archaeologists. Where Mr. Fergusson esteems himself

right, he is positive in his arguments and deductions; where he is doubtful, while he states his own opinion freely, he leaves the issue to the results of further investigation. We trust that this noble volume is only the precursor of others of a kindred nature, and that at some future period it may be produced in a form which would render it at once popular and reasonable; and we trust that Mr. Fergusson's own hopes in this respect may be realised.

To our professional brethren we commend the study of the details of this Buddhist sculpture. Many of them, especially the discs or bosses, might be adapted in reality or in spirit to Gothic architecture; and while the designs of the ruder styles of the middle ages are still accepted as high art, we think that those of the possibly Bactrian sculptors of the first few centuries of the Christian era are in many respects more perfect and beautiful.

### ILLUSTRATION.

SOUTH KENSINGTON AND M. LAMEIRE'S DRAWINGS.

By W. BURGESS.

WE certainly owe a great deal to Professor Kerr. Both his 'New-leaf Discourses' and his 'English Gentleman's House' are eminently edifying; more particularly the two short chapters in the latter work which are devoted to 'Elegance' and 'Ornamentation' respectively.\* A careful perusal of them lets us into the secret why we have so little either public or private art; and if the facts are as therein stated, we can hardly help agreeing to the conclusion which has lately more than once been put forth—viz., that in matters of art the said English gentleman is utterly uneducated. If we go into the matter, and inquire the reason of this state of things, we find firstly that he does not obtain the education of the eye, for he is not in the habit of seeing beautiful buildings and works of art around him, and secondly that he has had no regular teaching at the university where he has been brought up. The consequences are painfully apparent in his after-life. Neither his town house nor his country mansion exhibits any art which is part and parcel of the building, while in his seat in Parliament he is especially anxious to let it be known that he does not profess to understand anything about art, but that the great objects to be sought for are convenience and economy. If we go a little further, and inquire as to his ideas of art as an aid to religion, we shall find that he either takes the Puritanic view that the perfection of ecclesiastical architecture is bare walls and a roof, or that ecclesiastical art is a congeries of crockets, notchings, loudly-coloured diapers, and the usual wretched stained glass; perhaps he goes even beyond this, and belongs to an archaeological society, and collects filigree work, Chinese curiosities, or pottery; but with even all this he has no idea of art in its grandest form—viz., as an adjunct to architecture. Say that he has a new house built; he has got in reality a skeleton which wants clothing with flesh. How does he proceed to do it? Does he seek to make each room a work of art different in its decorations—different in its colouring and different in its furniture, but each telling some story, either on the walls or on the ceiling or on the furniture? Not in the least. The architect goes out—for that gentleman is aware that five per cent. on the bricks and mortar has paid him, and he knows that five per cent. on the decoration will not pay him, even if he possessed the education to do it; so the upholsterer is called in, and we have what we see in every house, and the state of things which has been so euphoniouly described in Mr. Kerr's two chapters on 'Elegance' and 'Ornamentation.'

Now the moral of all this is that the English gentleman ought to be educated in matters of art in his early youth, say at the Universities. The Slade bequests may perhaps be the beginning of such a system; and if they should be, Felix Slade will have done more for his country than almost any other benefactor.

Supposing the English gentleman to have acquired some real knowledge about the arts, the good that would follow would be immense.

In the first place any honourable member who rose up in the House upon some important art question (say such as the Law Courts) and prefaced his observations by the remark that he did not profess to know anything about the arts, would be coughed down, and the declaration would be considered as disgraceful as if he got up and declared that he did not profess to understand Latin.

Again, the English gentleman would then rather prefer to employ architects who could direct the decoration as well as the building of his house, and who could sit down there and then, and show him how the figures would come on the walls, or range themselves with regard to the lines of the architecture. Then the architect would have to educate himself, and so would the artists he employs; for he it observed that it by no means follows that the man who paints 'the last fond look' or 'love's first sigh' on a canvas for the Academy, is fit to do a simple and severe procession on a wall—on the contrary, it will take him a considerable time, and perhaps a good many

\* 'Elegance, therefore, unassuming and unelaborated, touching in no way the essentials of home comfort, never suggesting affectation and pride, moderated by unpassioned refinement, and subdued even to modesty, will be invariably acceptable in England. Even where extreme wealth and exalted rank render it incumbent upon a family to surround itself with the most cherished products of industry and genius, it will be rarely and value that will be esteemed—perfection of workmanship and pure or piquant excellence of design, rather than splendour or luxurious richness or imposing grandeur. Simplicity still, and subdued power, the greater the power the stronger the subduing hand, will be cherished even in magnificence, and the glare of pomp dispensed.'—*The Gentleman's House*, by Robert Kerr. Murray, London: 1865. Page 87.

failures, before he can succeed to his own and to the architect's satisfaction.

The same remark applies to the sculptors; and if we descend lower in the social scale we should find the architect preferring those workmen who are able to draw, and who know something of the history of their arts or trades. Now it is evident that although the higher orders may eventually get their art education at the Universities, some large system of machinery is required to render instruction in the arts accessible to the lower and middle classes. This machinery is professedly supplied by the Department of Science and Art at South Kensington; i.e. it professes to educate the eye by means of its museum, and to teach drawing by means of the various schools of art scattered over the country. Let us see how the system works. In the first place, let us take the museum. There is hardly a word to say against its contents or its management, but there is a great deal to be said about its situation. People go there to make a holiday, and doubtless a great deal of good is done in that way; but suppose a cabinet-maker or a silver-chaser wants to consult any article, he must either lose a quarter of a day or reserve his visit until the evening, when perhaps the gas-light is not sufficient to enable him to obtain the requisite information. The fact is that the situation of the museum is not in the manufacturing part of the town. Had it been built all round Leicester Square, the result would doubtless have been far more beneficial; but at the same time the very highest praise must be given to Mr. Cole for his energy in the collection and arrangement of the museum part of the affair. He would still more deserve our gratitude if he would take his broom and make a clean sweep of the school department. As it at present exists it is a delusion and a snare. It has hardly turned out one man of mark, but heaven only knows how many it has utterly disheartened and discouraged from going into the arts at all.

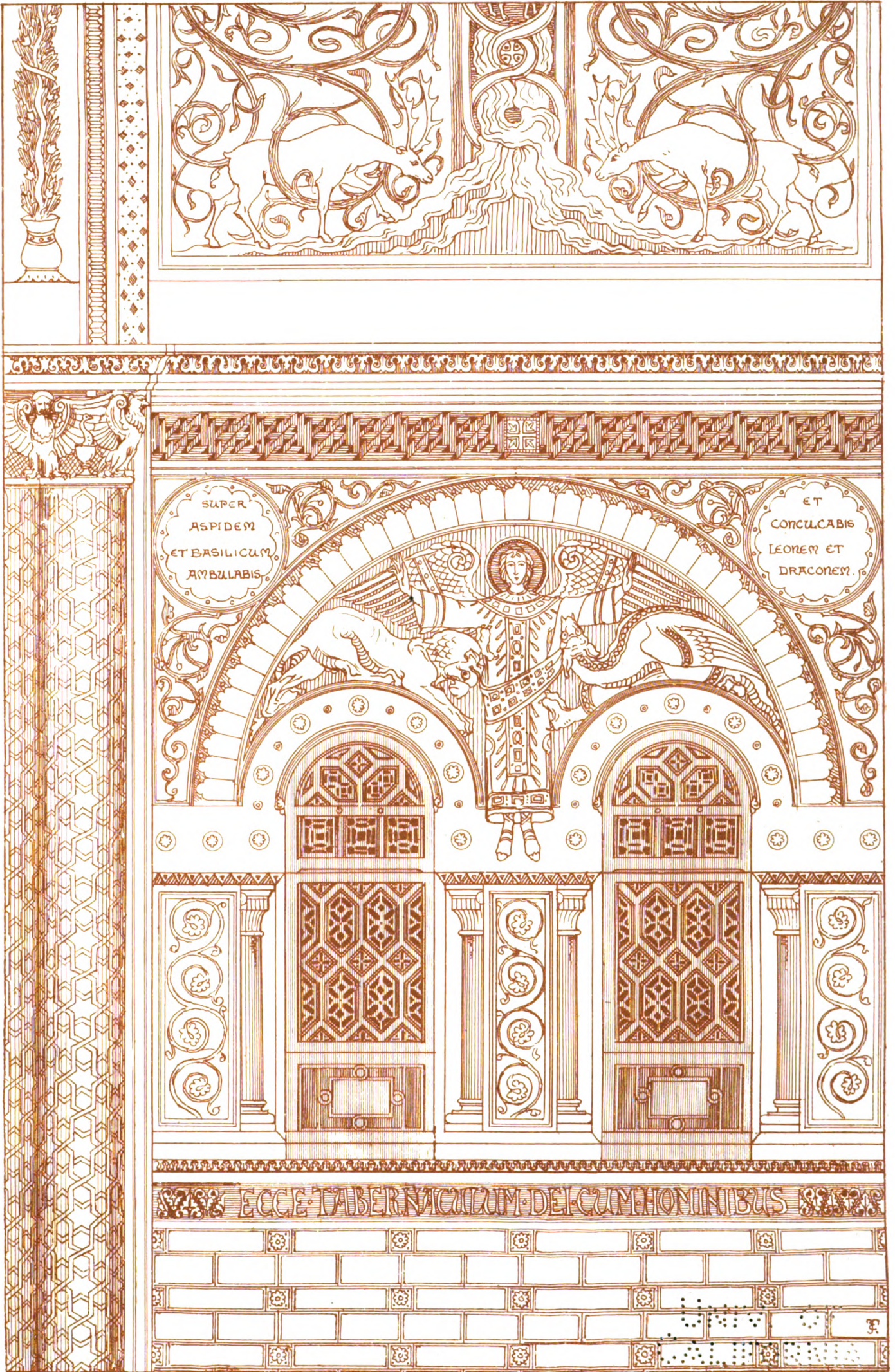
I believe most of us have heard strange legends of the early days of the school, and of the jealousy of the professional painters, who were afraid that it would be the means of flooding their profession, and how the students were made to declare on their entrance that they did not intend to become portrait painters, or historical painters, or landscape painters, &c.

The declaration might just as well have been saved, for 'Dyce's Outlines' were introduced, and I question whether any one was ever known to become a painter of any kind after going through that book.

What is really wanted is a series of schools in town and country where the student, after a very few preliminary exercises, should be taught the figure, and properly instructed in it by a competent staff of masters who have been trained to teach it, who know their anatomy, and who, if required, could point out the differences between a Roman and a Greek statue. Of course I do not imply that students should go at once to the life; on the contrary, they should go through a proper course of drawing from the flat and the round in the first instance, and the art of stippling might even be omitted with advantage. When a man can draw the figure, ornament becomes very easy. Certain days might be set aside for it, and certain lectures from a proper text book, i.e. such a one as Owen Jones is capable of supplying (say a special edition of his 'Grammar of Ornament') would be given at certain intervals, with the lecturer's own observations. Such schools would be attended, not by workmen only—on the contrary, architects, sculptors, painters, and the students in all the cognate arts would be only too glad to obtain in them their first instruction in the figure. We should then see decorators making a study, not how to avoid the figure in their designs, but how to introduce it; and that trade might perhaps in time present us with an English M. Lameire—for that gentleman is only a decorator, and has passed his life in a decorator's shop—and yet at the late Great Exhibition at Paris the judges awarded him a first class gold medal. It is even said that they were going to give him the great medal for architecture—a mistake, by the way, they could hardly have had the chance of making in England; although let us hope the day may come when it may even be possible for them to do so. I am informed that these drawings have occupied the evenings and Sundays of M. Lameire for seven years, and have been under consideration not less than nine. If we look at them carefully, we cannot fail to be astonished at the mass of knowledge, both literary and artistic, demanded in their production—the frieze, evidently the most excellent part of the composition, demanding an acquaintance not only with the history of France, but with its archaeology and kindred studies. The apse and eastern end evince a most careful study of the Apocalypse; while the arrangement of the figures, the balancing of the groups, and the style of the drawing, evince the very highest study and skill.

Take, for instance, the three specimens selected for illustration in the present Journal. The first one shows part of the great frieze, the real size of the drawings. The first figure is Charles Martel, 'Dux Francorum': he holds the mace in one hand, and with the other leads the horse of Charlemagne, 'Imperator Occidentis'; behind him, on the ground, is a Saracenic helmet, which serves at once to indicate his victory at Tours, and with the cloak to give an extended base to the figure, so as to balance the head of the horse, and to connect, in some measure, the feet of Charles Martel with those of the quadruped. The equestrian figure of the great emperor, if not the very best of the series, at least divides the honour with that of St. Louis. M. Lameire has done wisely introducing the Imperial coronation robes which are traditionally attributed to him; al-



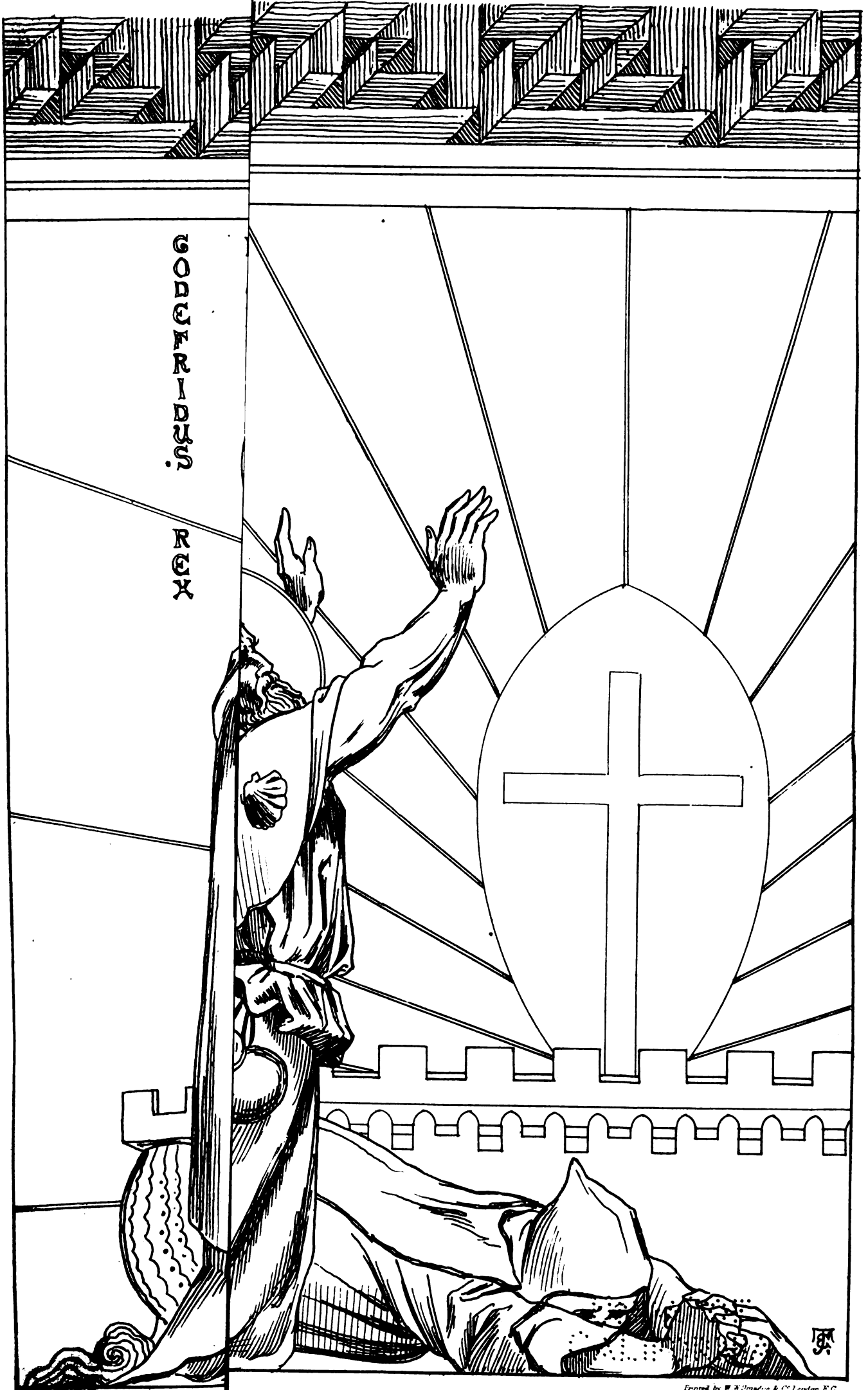


PORTION OF LONGITUDINAL SECTION OF THE SANCTUARY OF A CHURCH.  
WITH COLORED DECORATIONS.

FROM THE DRAWINGS OF MONS<sup>R</sup> C. LAMÉ, RE.  
NOW EXHIBITING AT THE SOUTH KENSINGTON MUSEUM.  
LITHOGRAPHED BY E. J. TARVER SCALE 0.025 TO ONE METRE.



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Engraved by W. Woodcock & Co. London &c.





though a perusal of the letter-press and an inspection of the plates in Willemin's 'Monuments inédits' most effectually dispels any illusion on that head. It is true that the crown, which is a Byzantine work, and part of the sword, may go back to his time; but the names of sundry succeeding emperors on the woven borders of the garments give evidence of a later origin, and even the arch over the crown presents us with the name of Conrad. By the way, it is very evident that at one time there must have been a second arch intersecting with the other at right angles, for the attachments are clearly shown in Willemin's plates. M. Lameire has hardly done justice to the sword handle, which he might very safely have copied from Willemin's plate, whereas the one in his drawing has a very theatrical appearance. It is worth while observing how the equestrian figure is made into a mass and strengthened, firstly, between the horse's legs, by the inscription and the broken Saxon idol; and secondly, above the hinder parts, by the upper parts of the figure of Witikind, the prince of Westphalia, and Desiderius, the last king of the Lombards; thus illustrating the Saxon and Italian victories of Charlemagne.

The second illustration shows the triforium, the frieze above it, and part of the roof. The architecture is eminently designed for decoration; that is, there is the greatest amount of plain surface, and the least possible quantity of moulding and sculptured ornament. Observe how the strong bands of horizontal ornament divide the various parts, and observe also how the ornament is made double and the lower band of it made geometrical where special emphasis is required, *e. g.*, at the springing of the roof. This geometrical ornament, which takes the shape of a continuous fret, not only serves to emphasise the line of cornice, but it helps to contrast with, and to bring out the figures below. Some of the heads even rise up into it: but there is less confusion in this happening in the case of a purely geometrical pattern than there would have been had foliage been used instead. The figures in the frieze represent Augustus as the founder of the Roman Empire, standing in his chariot and holding the figure of Victory. Behind him come captives, among which we easily distinguish the Egyptian. Then follows Attila in a litter borne by four warriors; one of them tramples on a Corinthian capital, showing the destruction of the arts. It should be observed that Attila's shield, quiver, and spear, together with a human head, are suspended from the litter.

In all these figures we observe the same balance and the same system of connexion that we have seen in the group of Charlemagne. Below all runs a continuous inscription, which does duty as a border, —but a mere foliage border would have been out of place; firstly, because it would have merged into the foliaged (painted) brackets below; and secondly, because it would have apparently deprived the lintels of their requisite character for strength.

The idea of the roof is that of a velarium attached to a painted architectural composition, which occupies the lower part of the vault. The very lowest portion is kept quite plain to give a sort of base to the painted architecture, and to allow for the part cut off by the projection of the cornice when seen from below, just as a good architect slightly stilt his arches for the same cause. This is one of the little points which clearly prove that M. Lameire is a practical man and knows his profession.

The third lithograph is part of the sanctuary, and in my opinion is hardly so successful as the nave, although, to a certain degree, the same principles may be observed. Thus, elaborate multifoils with their accompanying foliage hardly appear fit places for inscriptions; we expect something more valuable in such frames; and the way the foliage springs from the circle hardly gives the same apparent strength as if one of the two scrolls had been reversed. A continuous line also appears to be wanted a very little below the springing of the arches, so as to separate the latter from the abacus; and down below the long panels between the columns present us with a very unsatisfactory mode of filling in; *viz.*, a single scroll. In a horizontal position or even round an arch the single scroll does very well, but in an upright position, especially in connexion with such severe architecture as the present, it is apt to look weak.

In the original drawings we hardly notice these little slips, for our eyes are attracted to the exquisite Baldachino over the altar. As this has not been lithographed, it is useless to describe it, but I most sincerely advise all students, both young and old (for when should an artist cease to study?), to go to South Kensington and make the most of these drawings before they leave the country. And this suggests the question why such a contingency should take place at all; and when, as we all know, South Kensington has bought many more costly objects, and far less useful ones, than these. Witness the silver shield for 2,000*l.*: surely something less than half that sum should be forthcoming for such a work. It is true that we have an economising Ministry, which has actually gone to the length of cutting off the stained glass from the restoration of the Chapter-house at Westminster; but still it must be remembered that, in all probability, no particular instruction would be derived from the said stained glass, whereas a great deal of very particular instruction is to be derived from these drawings, and what instructs our artists and workpeople improves our manufactures, and thereby helps to accomplish that very desirable object of the nineteenth century, *viz.*, the increase of our national wealth. But supposing M. Lameire's work to be purchased: the next thing is how to get the most out of our purchase. I do not think that much good would be effected if it is simply hung

up at South Kensington, where the mass of the visitors would pass it by to look at the more attractive jewellery and antiquities. On the contrary, I believe more good would be done if these drawings were sent from one school of art to another until they were known all over the country. A full account of their excellencies and also of their defects should be most carefully drawn up and printed, and the master should read the description to the students with the drawing before him, making at the same time his own remarks. The drawings should remain a month or three weeks before they were removed to the next school, and the students should have the fullest liberty of studying and copying them. I venture to think that in this manner we should soon have something very satisfactory for our thousand pounds.

Who knows but that even the English gentleman may partake in the general benefit, and gradually arrive at the discovery that elaborate decoration need neither be 'meretricious,' 'obtrusive,' or 'pretentious;' and that there is no necessity for continuing the state of things described in Professor Kerr's work; but until art education is more general among the upper classes, I fear we shall do very little to improve the present very unsatisfactory state of things, and that such monstrosities as the Trafalgar Square Fountains (to mention only one example) will be the rule instead of the exception.

P.S.—Mr. Tarrer has obligingly drawn another section of the frieze, which thus makes the fourth lithograph from M. Lameire's drawings. There is very little to be observed concerning it, as the same principles of composition run through it as in the groups that have been engraved. The figures are Peter the Hermit, Pope Urban, Godfrey de Bouillon, and Hugh de Vermandois.

Concerning the costume, it should be noticed that the mailed gloves are not represented in contemporary documents as being divided into fingers. The blazon of the arms of Jerusalem is remarkable, as being an instance of metal upon metal. The heralds tell us the reason for this infraction of the ordinary rule was to more particularly distinguish these arms. M. Lameire has introduced Hugh of Vermandois as being the brother of Philip I. of France, and therefore a representative Frenchman connected with the first crusade, although his conduct was by no means satisfactory; for being sent by the princes, after the capture of Antioch, on an embassy to Constantinople he never returned; thus behaving, as Odoricus Vitalis tells us, like the raven sent from the ark.

## THE STATE OF ARCHITECTURAL EDUCATION.

THE following Report was read, at the late meeting of Delegates of the Societies forming the Architectural Alliance, by their Hon. Secretary:—

### GENTLEMEN,

The five reports which have been received from the Allied Societies in London, Birmingham, Glasgow, Liverpool, and Manchester, may be summarised as follows; but it would be unfair to any of them to consider such an epitome as this a complete report, for each of the reports contains carefully condensed information and views deserving of the most serious attention.

I can, therefore, only call attention to the salient points on which information was requested, and to the suggestions as to a course to be pursued which are contained in these reports, with a view to assisting us in our deliberations respecting our future course of action.

1. The age at which Architectural pupils usually leave school?  
London, Seventeen; Birmingham and Liverpool, Fifteen or Sixteen; Glasgow, Fourteen to Sixteen; Manchester, Fifteen.
2. The usual term of articles?  
London and Manchester, Three to Five years; Birmingham and Liverpool, Five; Glasgow, Four or Five.
3. What proportion of those who enter the architectural profession are articulated to an architect?  
London, 75 per cent.; Birmingham, all architects *proper*; Glasgow, no articles, but a course of service partly remunerated; Liverpool, one-third of *practising* architects, but *all* the present rising generation of architects.
4. What proportion of those who enter an architect's office have passed through a school of art?  
London, 5 per cent. have passed through a school of art; Glasgow, 80 per cent. attend a school of design; Liverpool, perhaps one-half, including those attending a school of design.
5. The steps usually taken during the term of articles for the improvement of the pupil?  
In London seldom more than office routine and the *suggested* attendance on architectural societies and classes; in Birmingham, beyond office routine, perhaps left pretty much to themselves; Liverpool, very little; Manchester insignificant, with a few honourable exceptions.
6. What facilities exist in your district for improvement to the pupils? What Schools of Art, public or private? What lectures, casual or regular?  
In London very numerous lectures and classes at several institutions. Birmingham—the Government School of Art. Glasgow—the School of Art and a public library. Liverpool—lectures and classes at two institutions, the Government School of Art, a library, and papers. Manchester—School of Art and Mechanics' Institute.

7. What means your Society takes for the improvement of those who have not yet passed through their pupilage?

London, papers and classes and prizes; Birmingham, none; Glasgow, free use of rooms and library; Liverpool, papers and prizes; Manchester, papers and classes.

8. To what extent is the practice of study and sketching from existing buildings carried, and how far is it encouraged by the principals?

London, encouragement of the practice is neglected, and few facilities given; Birmingham, it is not done so much as it ought; in Manchester there is a sketching class.

9. How far could the existing facilities for instruction be modified or added to to increase the extent of architectural education?

The gist of this question is: What, in the opinion of the societies, is to be done?

The London Architectural Association says, and in this all the other societies agree, students use only to a small extent the facilities afforded to them.

The London Architectural Association also says that this is caused by the want of a recognised system, and suggests that time should be taken from the masters in the daytime for attendance on lectures, &c., by the students.

They urge examination as the proper ultimate admission to practice, voluntary for the present, compulsory for the future.

The Birmingham Society have to suggest increased library and museum accommodation.

The Glasgow Society say that action for the pupil has proved itself useless, and that the necessary examination before entering their architectural Institute is expected to produce more activity from pupils than kind advice can do.

The Liverpool Society urge increased Library accommodation, and that Architects should pay more attention to their pupils, but that a compulsory examination would afford the strongest inducement to architectural education.

The Report of the London Architectural Association is supplemented by this resolution:—'And this association feeling strongly the desirability of obtaining a system of compulsory education and examination, in order that the profession of architecture may be established on a similar footing to other professions, would appeal to the societies throughout the country, through the delegates to the Alliance, to join with the association in petitioning the Institute to take such steps as they may deem necessary to enforce a proper system of Architectural Education and Examination with the ultimate view of petitioning Parliament to make such examinations compulsory.'

We have then before us the following considerations:—

The importance of enlisting the Architects in the advance of the pupil's education.

The desirability of increasing in each town facility for self help.

The necessity of a system pressed upon the pupils for self education.

The absurdity of a profession like that of Architecture being without systematic examination for entrance, and the course to be pursued to render such examination legally necessary before an Architect can practise.

I have to suggest then that whatever course of action is taken by the Alliance, should be systematically directed to the above objects seriatim.

THOMAS M. RICKMAN,  
Hon. Secretary.

## ON THE DUTIES OF AN ARCHITECT.

ON THE DUTIES OF AN ARCHITECT, WITH REFERENCE TO THE ARRANGEMENT AND CONSTRUCTION OF A BUILDING. Read at the Society of Arts, on Wednesday, April 28. By T. ROGER SMITH, Esq.

(Concluded from p. 238.)

**B**UT passing from the study of special subjects, a work which involves many visits to existing buildings of the same sort, I should like to return to a dwelling-house, and to touch upon a few of the points to be thought of in the planning of it and the working it out for execution. The relative position of each room in connection with all the others; the aspects of the windows; the communications, such as the hall, the corridors, and the staircases, require to be arranged for. Each room must be of the right size, shape, and disposition. In every main living-room the ordinary articles of furniture must be prepared for, and places assigned them, and the same in every bedroom, large or small. The position of window, door, and fireplace in each room, must be settled so as to avoid draughts, discomfort, and smoky chimneys. Light must be secured for every hole and corner all over the house, and so must ventilation. The service from the kitchen must be so provided as to bring the provisions into the dining-room readily, but to keep smells out. The duty of every servant, all over the house, must be understood, and all the endless appliances of a large house thought of. There must be a place found for the range and the hot-plate, and the jack, and the dresser, and the closets, and the shelves of the kitchen. The shelves, sinks, and plate-racks, the coppers and washing-boards, the vegetable bins and the water supply of the scullery, must be all provided for. Care must be taken of the wine-cellar, the beer-cellar, the stores, the linen, the china, and the plate. Ovens, boilers, hooks, safes, plate closets, linen closets, housemaids' closets, baths, hot water, cold water, cupboards, lifts, and all manner of appliances are to be thought of; rooms for the family, and rooms for the guests; the nurseries, the upper servants' rooms, the various services of butler, cook, housekeeper, footman, dairymaid, stillroom maid, must all be thought of, all planned for; all must be brought compactly together, and each must be kept out of the others' way. Whilst these matters are being disposed of, there are also many points in the structure that need attention in preparing working plans. Proper foundations must be provided for, and an equable distribution of the weights on the walls. The flues must be carried up into proper chim-

ney stacks, the construction of bresssummers, girders, floors, partitions, roofs, &c., must be devised. The arrangement of the roofing, so as to be easily freed from snow, the mode of bringing away rain-water, the drainage, the outfall or cesspool for the drains, the necessary precautions against damp, bad smells or tainted water, each and all of these must come under review, not one of them can be left to chance, any more than the putting together of the masonry or the brickwork, the thickness of walls, the quality of glass, or the weight of lead. All this time an entirely distinct set of considerations is also present to the architect's mind; his building is to please the eye, as well as accommodate the dwellers therein, and, whether there be the richest elaboration or the most rigid simplicity, he will not have fulfilled his duty to his employer, or been loyal to his art, if he has not striven to render the effect of his work, especially of the inside of his house, pleasing, harmonious, and appropriate.

I could go on further in this strain, reminding you that it is generally necessary to fix the nature of all the materials, the quarry—often the special bed for the stone—the quality of the bricks, and so on of every material throughout the structure; but I have said enough, I hope, to convince you that a vast amount of forethought and care is here wanted. I have only to repeat that all this has mostly to be done in a hurry, as few clients think of giving their instructions till that season of the year when the building ought to commence. Notwithstanding any hurry that may have existed, any error or oversight made at this period may probably—more probably than not—be a lasting injury and a cause of endless discontent, if not discovered in time for remedy in the course of the work; and even if it be so discovered and remedied in time, but at the expense of extra outlay, it will most likely be a source of grave complaint. I honestly confess that my wonder is not that oversights occur sometimes, but that they are so few and infrequent as they really are.

As the plans approach completion, the architect has to advise his client as to the means of executing the building. It is not very unusual for the proprietor to become, to some extent, his own builder, or at least brick-maker: time forbids our enlarging upon the work this entails on his professional adviser. The remaining courses are, either to agree with a contractor to execute the work at a schedule of prices, or to agree with a single contractor for a definite lump-sum, or else to invite several contractors to tender, and give the work to the lowest bidder. The plan of inviting contracts by public advertisement is, fortunately, seldom resorted to for private work; and the old plan of contracting with various tradesmen separately, though it still holds ground in the north, has been generally abandoned in the midland and southern counties. Whichever way is adopted, the architect has to negotiate the business, and commonly, if there is a competition or a negotiation with a single contractor, he has, from his knowledge of the trade, to nominate the contractor or contractors.

In any case where an estimate in a lump-sum has to be prepared, a more or less elaborate document, called a bill of quantities, is got out. This is sometimes prepared by the architect, but in and about London it is customary for a separate professional man, called a measuring surveyor, or quantities surveyor, to make it out. In either case, this bill is supposed to show with accuracy the whole amount of every description of labour, material, or article introduced into the building. In London these documents are prepared in the most extraordinarily elaborate detail, as their extreme length will abundantly show; in the country they are generally more condensed. A blank copy of this bill is furnished to the builder who estimates, or to each builder if there are more than one, and he puts his own price to the items, calculates the amounts, and bases the tender he sends in upon the result so obtained.

It sometimes happens that the estimate thus obtained is at once agreed to and accepted. At other times it is desired to reduce the amount of it, and in this latter case the architect has to arrange such variations or omissions as will admit of this being done.

Without further delay, however, we will suppose an agreement as to carrying on the work come to somehow, a contract signed, and a commencement about to be made. The architect has now, usually, to seek, and appoint, and engage for his employers a clerk of works, and to set out the building in its exact position on the site, and to fix some unmistakable level. This done, work is begun, and, from that time till the close of the operations, the architect has personally to visit the building, and has also to keep on continually preparing additional explanatory drawings, and, I might as well add, to furnish duplicates, sometimes triplicates, of working drawings, for the use of the contractor and clerk of works.

The objects which the architect has to keep in view during the conduct of the works, and especially during his personal visits to them, are, in the main, two—he has to satisfy himself, first, that the contractor and every man he employs are doing their duty; and, secondly, that the building will carry out his intentions and supply his client's wants.

To insure that the conduct of the work shall be satisfactory, it is necessary constantly to watch the materials and workmanship, either brought upon the ground, or introduced into the building, or in preparation at the workshops. I need hardly add, that to do this efficiently the architect must be a good judge of both work and material—an accomplishment requiring some amount of experience and attention. Where there is a disposition to evade the conditions of a contract, this part of the architect's work becomes both difficult and responsible, and at all times a certain amount of anxiety is involved in it. To a very large extent, however, the inspection of workmanship and materials can be facilitated by the clerk of works, if he be clever and honest. He is placed on the works on purpose to see, every day and every hour, that the contract is carefully and honestly executed, and I must say that I have, again and again, received the most valuable assistance in this branch of my duty from various clerks of works engaged under me.

In his other object, the architect has to bear in mind, during his superintendence of the work, that no one can be of much assistance to him. There is no part of his duty which he can less easily or less wisely delegate to another, than that constant watchfulness which is imperatively needed to ensure the success of the building, both as a contrivance and a work of art.

Drawings, explanatory of the original plans and specifications, are continually in demand. The larger number of them, perhaps, relate to the artistic part of the work, and consist of full size profiles of mouldings and drawings of enrichments, or of details to a large scale, to show with precision and exactitude what is meant; but many structural drawings are wanted, and others are often called for to show modifications of the design; for there are few buildings in progress where some changes are not made. Sometimes a new want strikes the employer, or a new light dawns upon the architect. At other times an omission may be discovered, or an obvious improvement will suddenly present itself. At any rate, some alterations are usually called for, and require to be drawn out.

Constantly, also, during progress, specimens of moulded or enriched work, or full-sized models of features, are fixed in their intended place, and the architect has to visit the work, to satisfy himself that their effect will be as he wishes. In this way the superintendence of the work proceeds, and almost always involves some work for the pencil up to the very last, while the designing or the far less pleasant task of selecting chimney-pieces, stove-grates, fittings, paperhangings, and decorations, is as essential to the full success of the architect's work (and should be as fully left in his hands) as the design of masonry or joinery.

It may be asked whether the architect has any means of enforcing the execution of the contract, in conformity to his directions and wishes, and I reply that he has such means. The hold upon the contractor, which all building contracts give the architect, is the power of the purse. Buildings are always partially paid for as they go on, and always upon certificates from the architect. It becomes, therefore, part of the architect's duty to grant these certificates, and in giving them, he has to see that the amount certified represents the proper proportion and no more of the contract price, and that the work is properly done; for it is his duty to withhold his certificate if his complaints remain unattended to, or his orders are not complied with. In cases of work by a schedule of prices, very careful measurements are made; and, when the work is done in other ways, suitable valuations are made from time to time; but, in some shape or other, the architect requires to be armed with the only power which will effectually enable him to protect his employer and secure attention—that of controlling the cash payments.

When, at last, the work is completed, it becomes the architect's duty to make up a statement of accounts. All claims for extra or additional works are checked and measured by him, or by the measuring surveyor for him, and the counter claims arising from the omission of work included in the contract, but not carried out, are valued. A balance is struck after every item has been scrupulously examined, and, if necessary, fought over. And the architect's last duty is the signing a final certificate that the balance, whatever it may be, is payable to the contractor.

I have now, I think, gone through the most salient points of an architect's ordinary duties, such as they exist when there are no accidents or bankruptcies, and no disputes, difficulties, obstacles, or other hindrances of any special magnitude; and, with the hint that such difficulties do not unfrequently arise, and impose on the architect different duties, sometimes as a negotiator, at other times as an advocate, or again as an arbitrator, I might, I think, leave the subject. Yet, if you will bear with me a moment or two longer, and not think my tale a fable because I try to point it with a moral, I have something to add.

Perhaps the most obvious sequel to all that I have said is the inquiry, 'If all this is needed for the success of a building, who furnishes a sufficient amount of care when there is no architect?' The reply is, that most of it is not furnished, and the building suffers; and, as to the remainder, either some skilled or experienced assistance must be employed, or else other work properly designed is copied, and thus a portion of that thought, without which a building cannot be built, is secured; and, lastly, that much of the time of skilled artisans is spent, where there are no regular plans and no skilled direction, in furnishing, imperfectly and piecemeal, substitutes for that which ought to be clearly arranged and laid down for the workman by the architect.

If I have said enough to dissuade any person from becoming his own architect, this paper will not have been without service. Though there is no mystery in the planning and direction of work, this yet requires a very large amount of knowledge and familiarity with the subject; and, though an individual who desires to build, can, if he please, employ any number of men, and gain a good deal of experience in rectifying their mistakes, such experience is dearly bought, and comes too late for its purpose.

I have throughout studiously avoided giving prominence to the art side of this question; but here at least I must say that, however skilled a draughtsman or even a designer any private individual may be, he will be sure to be deficient in that technical knowledge which inspires the architectural treatment that a building receives from a good architect; here, at the best, defects are, to my mind, inevitable in the work of every man who has not measured and drawn much existing architecture.

Few persons readily understand that, because architecture deals with things quite familiar in one aspect of them to those who live in buildings, or buy or sell them, it is yet necessary to have long practice, in order to combine with economy and judgment the different parts of a room, and the different rooms of a house; and to provide a place for all that has to be included within its four walls. Almost as few recognise the fact that if they can draw an architectural feature when they see it, that power is quite different from that of the architect who has to draw a whole building and its parts as he imagines them, and then to furnish for every portion the profiles of the mouldings, the sizes of the panels, the treatment of the carving to a large size. As a simple instance, it is easy for any person to draw a window with mullions, but no one who has not studied as well as sketched will be able to settle whether the width of the mullions should be a fourth, or fifth, or sixth, or what proportion of that of the adjacent light. The difference between a narrow and a wide mullion is equivalent to a total difference of style; a mullion of 5 inches would be out of place if one of 7 inches was correct, and when it was done, the amateur would see that something was wrong, but would not know what; and it is to attain the power of regulating the half-inches in cases like this, that the student of

architecture has to wander for months, or even years, through the districts where good buildings exist, making notes and drawings; and, let me add, there is nothing short of a perfect knowledge of these details, and incessant attention to them, which can give harmony, unity, and character to a building.

It may be natural, and I hope is not out of place to add, that the architect who does these services thoroughly has fully added the value of his fees to the value of the building. That he has quite work enough to do in earning them will be apparent to any one who turns over the plans and specifications of a large work, and forms some idea of the additional time spent in superintendence. I trust you may be willing to believe that the client has value received in the building for what he pays. The architect's remuneration, in ordinary cases, is, customarily and legally, a commission at the rate of five per cent. upon the cost of the works. This pays him very unequally, in some cases being sufficient, in others not so; but I believe it is a very fair way of payment as far as the employer is concerned, for it represents an increased standard of excellence throughout the building as compared with what, under the most favourable circumstances, might have been reached without the architect, and this increased excellence is really an increased money value.

In concluding, I should like to say a word as to some peculiar demands made sometimes upon an architect's skill, and to point out what he ordinarily cannot and does not do. No architect can make a bad builder do good work. He can make all sorts of agreements and stipulations that the work shall be good, and can try very hard to enforce them, but there is a certain proverb about silk purses and the materials suited for their manufacture which will help to illustrate the impossibility of success. It is as well to add, that the architect can materially help to secure a good builder, and that he can generally prevent a good builder from doing bad work.

The architect cannot, from the very fact that he is human, ensure perfection in every part of the work; but if he is able and careful, his services carry the building a great deal further towards excellence than is often imagined; and though no amount of care makes it quite certain that every flue shall draw, and every lock shall work, that the arrangement shall be all that can be desired, and the effect please everybody, yet a skilled architect, working for a good client, will go a very long way towards this result.

The architect is not ordinarily called, as the engineer is, to calculate accurately the endurance of his materials, because his walls must be thicker than the weights on them demand in order to keep out the weather, and his joists must be stiffer than is needed to support the floor, in order to prevent the ceilings from cracking, and so throughout; but he has a great deal of that sort of calculation to perform, in which tables and experiments can but imperfectly guide him. He has to judge of foundations, and the balance of weights in his structure; of the sufficiency of windows and passages; of the probable effect on the eye of features not yet commenced; and of the suitability and durability of materials. Lastly, he has often greater difficulty in the management of men than of works, and the cross-purposes at which clients, builders, landowners, clerks of the works, foremen, and tradesmen are sometimes playing, often give him enough to do in his character of negotiator. Here, however, I do not purpose to follow him. I have purposely kept out of sight much of what the architect has to do as an Artist. I shall certainly not be expected—if I say so little as to a side of his employment which ever demands his constant attention—to add anything as to other classes of duties or difficulties which are uncertain and irregular in their occurrence. I, therefore, here leave the subject, trusting that my paper may be judged to have furnished a fair account, and nothing beyond a fair account, of the nature of the ordinary and routine occupations of those professional men to whom you are in the habit of entrusting the design and superintendence of the buildings you erect.

## LEGAL.

### THE CHARGE OF CONSPIRACY IN THE BRICK TRADE.

On Monday, 26th ult., at the City Police Court, Manchester, Mr. Thomas Hayes, President of the Manchester Master Brickmakers' Protection Association, appeared on remand, charged with conspiracy.

Mr. Leresche, for the prosecution, briefly stated the facts of the case. The defendant carried on business in Manchester as a master brickmaker, and was chairman of the Master Brickmakers' Protection Association. The charge against him was that he had conspired with various other persons for the purpose of extorting money and stopping the trade of the Messrs. Griffiths. Some time in the course of last year Mr. Ralph Waller, a gentleman possessing land near Withington, entered into an arrangement with a person named Deady, who carried on the business of an architect, builder, and contractor, to let him some land for the purpose of erecting dwelling-houses upon it. As soon as the land was covered by the buildings, there was to be a conveyance of the land, on a chief rent, from Mr. Waller to Mr. Deady, and then there was to be a mortgage upon the same from Mr. Deady to Mr. Waller as a security for the money. Mr. Deady proceeded to erect the houses, but, owing to his being in difficulties, they were left in an incomplete state. Mr. Deady shortly afterwards placed himself in the hands of a solicitor, and several attempts were made to keep him out of the Bankruptcy Court. In the meanwhile the buildings in question were neglected, and the works remained suspended, upon which Mr. Waller served the usual fourteen days' notice upon Mr. Deady to continue the erection of the houses, otherwise he should complete them himself. Mr. Deady being unable to complete the houses, Mr. Waller entered into an agreement with a Mr. Wilshaw, builder, of Manchester, to finish the houses; Mr. Wilshaw sub-let part of the contract to Messrs. Griffiths & Son, the prosecutors, to do the bricklaying, and accordingly, in December, 1868, they began the work, and sent to Messrs. Bowker and Jones, brickmakers, to obtain a supply of 2,000 bricks. On December 2, prosecutors' carter went to Messrs. Bowker and Jones for the purpose of getting more bricks, and while on the way he met the defendant. On reaching Messrs. Bowker and Jones's yard,



Mr. Bowker refused to allow him to take away a single brick. On December 6 Mr. Wilshaw attempted to obtain bricks from other brickmakers, when he received a circular from the Brickmakers' Association inviting him to attend a meeting of the committee, to hear a complaint from the defendant about the matter in question. He refused to recognise the authority of the Association, and did not go to the meeting.

John Worsley, a carter in the employ of Messrs. Joseph Griffiths and Son, bricklayers, Chorlton Road, gave corroborative testimony.

Horatio Griffiths gave evidence that the defendant Hayes said as to his father and the Withington job, 'I should advise him to get out of it as quick as possible, because if he finishes those houses I shall make him responsible for my money. I will have my money if I spend a fortune upon it. I shall stop all Mr. Griffiths' work until it is paid if he finishes those houses.'

Joseph Griffiths said he received a note left by Hayes with his wife. In the letter he said, 'You must not proceed any further with the work at Withington, but must attend a meeting of the committee of master brickmakers that night at a public-house in Fountain Street,' the name of which he forgot. It was signed by the defendant, and written with a pencil. Hayes warned him to come to the meeting to make arrangements with their committee at the house in Fountain Street, as if he didn't they would stop his trade in the whole district, and if that didn't do would withdraw his men, and charge him with the expense. Soon after, he got a communication from Worsley, the first witness, that bricks could not be got. He found it impossible to get bricks, and the works had to stop for a fortnight.

John Pownall, examined by Mr. Leresche, said he was the secretary of the Master Brickmakers' Protection Association.

By Mr. Leresche: The society consisted of about 80 members. There was a committee appointed, the members of which met at the Shakerspere Inn, Fountain Street, Manchester. He did not recollect having attended a meeting of the committee on September 17 last. On referring to the book he saw that there had been a meeting on that day, but there were no particulars whatever of what had been done at it. He could not say whether he was at the meeting or not; he would not swear he was not present. He objected to answer the question whether that meeting had been called by him as secretary, and he did not recollect whether it had been called by the defendant. Looking at the document (handed to witness) he could not say that the meeting was called by Hayes or at his request. He declined to answer the question whether a resolution had been passed at that meeting with reference to the supply of bricks to Mr. Wilshaw. He did not recollect issuing a notice asking Messrs. Wilshaw & Griffiths to attend a meeting on January 7. He remembered meeting Mr. Griffiths in Cross Street about that time, or it might be a few days after the meeting was held. They had no conversation in reference to the job at Withington. Griffiths did not complain that the society had been taking liberties with the job at Withington, and witness did not tell him that the society had passed a resolution in reference to it. Nothing whatever passed between them in reference to a resolution.

John Griffiths was the next witness. When he met Pownall in Cross Street he asked him if the resolution passed at the meeting applied to the Withington job or to the whole district, and he replied, 'Certainly, it applies to the Withington job.' He subsequently said it applied to the whole district. He then asked Pownall what they thought of themselves as honest men in passing a resolution the effect of which would be to rob witness of his bread, and he replied, 'I had neither voice nor vote in the matter. It is hard that Hayes should lose his money.' Witness said, 'Yes, but it is harder to make a man pay that doesn't owe it.' He proposed to sell the bricks in spite of them, but he received an answer to the effect that if he did they would stop him altogether. He saw the defendant Hayes on December 19—two days after the first meeting—when some conversation took place between them in reference to the Withington job. Hayes asked him what he thought of himself in going against their wishes, and he replied, 'I will endeavour to do what is right;' to which Hayes rejoined, 'Very well, we will take our own force.' Witness told him not to interfere with him or his business, or if he did he might look out. After that he endeavoured to get bricks from various brickmakers in the neighbourhood, and all went well until January 6, when Parkin & Hewitt, from whom they had been getting bricks up to that time, refused to let them have any more. He saw Mr. Hewitt after they had ceased to supply him, and Mr. Hewitt made a statement to him.

At this stage the case was adjourned until the following Saturday, and was not closed till Monday, May 3, when the magistrates decided that there was not sufficient evidence on which to send the case for trial; but they bound over Messrs. Griffiths & Son to prosecute at the coming assizes.

#### Exchequer Chamber.—May 14.

(Sittings in Error, before the LORD CHIEF JUSTICE, JUSTICES BYLES, KEATING, SMITH, LUSH, HANNEN, and BRETT.)

#### LORD DERBY v. THE BURY IMPROVEMENT COMMISSIONERS.

The Court gave judgment in this case. The question for the consideration of the Court was, whether the defendants, the Bury Improvement Commissioners, were justified in making a common sewer through Lord Derby's land, in order to carry away the sewage of the town, which had been previously carried off by a stream of water, which had become a nuisance. There were no means of removing it except by the construction of a new sewer. Four questions were raised for the consideration of the Court. The first was, whether any power existed in the commissioners to make a new sewer under the Nuisance Removal Act? Second, whether the commissioners had power to exercise a discretion as to the course and position of the new sewer, or whether they were bound to follow, as near as possible, the course of the old nuisance? Third, whether the improvement commissioners had abused their powers in what they had done? And, fourthly, whether the improvement commissioners were disabled from acting under the Nuisances Act, they having powers to do the work under the local Act by giving the necessary notices, but which notices had never been given? The Court held there was no doubt that the improvement commissioners had power to make

new sewers to carry away a nuisance. The necessity of making a sewer was a matter of fact, and it was for the commissioners to exercise their judgment in what direction it should be made, and so long as they exercised an honest discretion, without misconduct or negligence, they were not liable to have their judgment overruled. Thirdly, that it was not an abuse of the powers vested in them by the statute; and, fourthly, that there was no inconsistency in the co-ordinate powers of the nuisance and the local Acts, and the commissioners could adopt either. The judgment, therefore, in this case ought to be reversed, and entered for the defendants.

Judgment for the defendants.

#### Exchequer Chamber.—May 15.

(Sittings in Banco, before the LORD CHIEF JUSTICE and JUSTICES KEATING, LUSH, HANNEN, and BRETT.)

#### FARBER v. THE COMMISSIONERS OF SEWERS IN LONDON.

This was an action brought by the plaintiff, who kept the Railway Hotel, in Liverpool Street, against the Commissioners of Sewers, to recover compensation in damages for the loss he had suffered in consequence of an alteration in the level of the street, whereby the access to his house was not so convenient as formerly. The Commissioners of Sewers had raised the level of the road, so that instead of going one step up as formerly to enter the plaintiff's house the public had to descend two steps. The two questions for the opinion of the Court were—first, whether the plaintiff was entitled to compensation; and, secondly, provided he could recover, whether it was by an action at law. The Court of Exchequer had given judgment in favour of the plaintiff.

Mr. Browne, Q.C., for the defendants, contended that they were a public body, exercising powers for the benefit of the general public, and they were not liable. They were empowered by their Act to raise or lower streets, and to pave and repair them.

Mr. Keane, Q.C., was heard for the plaintiff, and contended that the judgment of the Court of Exchequer was right, and asked this Court to affirm it.

The Court, after hearing the lengthened arguments of the learned counsel, said they were of opinion that the judgment of the Court below must be reversed. There was no power in the Act to give compensation to persons whose premises were injured in works executed by the defendants.

Judgment reversed.



#### PRESIDENT GRANT'S TRIUMPH.

To the Editor of THE ARCHITECT.

SIR,—The President of the Royal Academy has achieved a signal triumph. Those of us whose memory can extend to the early years of the present reign may remember the emulous contest that was carried on between the vendors of two rival descriptions of blacking. Before advertising had been organised into its present system of sensation, surprise, and swindle, Warren and Day & Martin covered the walls of Europe with their posters. They appealed, not in words to the cupidity of the world, but graphically, to the aesthetic sense of mankind. In one form of pleading was exhibited a half-dressed man, leisurely shaving himself by the reflection of his polished boot. In another an irate cat, with voluminous tail, and back elevated into a gothic arch, was advancing on three electrically agitated legs, to encounter his own image in the boot.

Sir F. Grant, P.R.A., has distanced this early art. The pair of boots, of which he has gratified us by exhibiting the portrait, has never been exceeded, so far as our experience extends, either in size or in polish. The officers of the Royal Artillery, for whom this work of art has been produced—it is No. 83 in the catalogue of the exhibition of the Royal Academy of Arts for the present year—are to be congratulated. We can hardly extend this congratulation to the friends of the late Field-Marshal Sir Hew Dalrymple Ross, R.A., who appears behind, or as it were in, the boots. His features, though drawn with a degree of hardness and of harshness that was no doubt intended to heighten the spectator's admiration of the brilliant polish of the boots, are not agreeably rendered. The question of how far the adjuncts of the main object of a painting should be subdued in tone, in order to heighten the effect of the central figure, has evidently been one of considerable difficulty in the experience of Sir F. Grant. In this case the result would have more redounded to his permanent fame, if the subject had been more elaborated in the mind before being committed to canvas. The subtle flattery that is concealed in the art by which the nominal subject of a painting is sunk into a mere accessory, is not peculiar to Sir F. Grant, although probably no artist has carried out the system with more vigour. Last year we had a portrait of a lap-dog, supported by a lady; this year we have the boots of a Field-Marshal, with the owner as an adjunct.

It is clear that our artists of all orders, especially our architects, will have to reconsider their ideas. When we see what is exhibited and what is rejected by the Royal Academy, we are compelled to conclude that the traditional ideas of what is excellent in art require reconsideration. At all events they do not appear to guide the taste of the Committee of Selection.

Our rising artists will do well to bear in mind that the qualities which ensure fame are not those which ensure exhibition on the walls of the Royal Academy. It will be for them to select which path to follow. At present the two seem to be but rarely compatible, or compatible rather by fortunate chance than for any other assignable reason. We must congratulate the members of the Academy on the distinguished position which they are taking in the history of art.

A. Z.

## NEW BUILDINGS AND RESTORATIONS.

**Church Restoration.**—At a vestry meeting held at Axminster, last week, a plan was submitted for the restoration of the church. The plan showed the pulpit placed against the south-western pier of the tower arch, with the 'reading desk' against the opposite or north-western pillar. The organ gallery only was proposed to be removed; the organ was to be placed at the north-eastern extremity of the church, near what was heretofore known as the workhouse gallery staircase, and to be raised a step or two above the floor. The present pews were to be removed, and benches substituted, those in the body of the church below the proposed new position of the pulpit to face the west, and those beyond the pulpit towards the west to face the east, all facing the pulpit. The vestry also to be removed further westward. After some discussion it was resolved that estimates be procured and funds collected towards the necessary alterations.

**Church Building.**—**EASBY.**—The church, after thorough restoration, has been reopened. The edifice possesses interesting features, amongst which may be mentioned some curious wall-paintings of rude design, specimens of the decoration of the twelfth or thirteenth century. **BURTON LATIMER.**—The parish church has been reopened for Divine worship, after undergoing restoration. The high-backed pews have given way to the ordinary rush-bottomed chair. **GRANTHAM.**—The reopening of St. Wolfran's Church, after an extensive restoration, has taken place. A new roof has been placed on nearly the whole of the church, the pews have been removed, and replaced temporarily with rush-bottomed chairs. The total cost of the restoration has been between 16,000*l.* and 17,000*l.* **CHESTER.**—The chief stone of the new church of St. Thomas has been laid. The style is Early English. The building will consist of tower, nave, and two aisles, with chancel and chancel aisle on the north side. The edifice will afford accommodation for between 1100 and 1200. The total cost is between 10,000*l.* and 11,000*l.* **SOUTH KENSINGTON.**—The dedication stone of the new church of St. Matthew has been laid. The church will consist of nave and chancel, with aisles, and a tower at the west end of the south aisle. The style is Early Decorated. **SUNBURY.**—After alterations and repairs Lamarsh Church has been reopened. A new vestry has been erected on the north side of the chancel. The tower is now surmounted by a new octagon spire.

**Society for the Prevention of Cruelty to Animals.**—On the 4th inst. Miss Burdett Coutts laid the foundation stone of the future permanent buildings of this institution, in Jermyn Street, St. James's. The new building is to be of Portland stone, and in the Italian style. The cost of it, in addition to the site, will be about 2,900*l.* The Earl of Harrowby, as president, made a short address to the meeting, pointing out the benefits which had accrued from the exertions of the Society since its establishment in 1824, since which time they had obtained no less than 16,000 convictions against persons proved to have been guilty of cruel treatment of animals. The silver trowel, which was inscribed as being presented to Miss Coutts, and which was really a present worthy of her acceptance, as it was a fine work of art, was then brought out of its case, the mortar spread, and the stone lowered amid loud applause.

**Opening of the New Church at Sawrey.**—On May 13 the little church at Sawrey, on the Lancashire shore of Lake Windermere, was opened by the celebration of Divine service. The honorary architect is Mr. Robert Brass, of London, and the design is in the Early English style. The church consists of a nave, transept, and chancel. It is covered with an open timber roof, in character with the rest of the building. The walls are of the stone of the country, the quoins, string courses, mullions, corbels, and chancel arch of fine proportions, being of freestone brought from a distance. The church is well lighted by ten lancet windows of two lights each, with a large three-light window at the east end, and a large five-light one at the west. The porch and bell-tower are on the north side, the lower portion of the latter forming the vestry; and on the south side is an organ-chamber to correspond. The contractor for the carpentry work was Mr. John Taylor, of Sawrey; for the masonry, Mr. Isaac Crossdell, of Birthwaite; for the walling, Mr. George Bowness, of Esthwaite; for the plumbing and glazing, Mr. Edward Cragg, of Bowness; for the painting and staining, Mr. Thomas Gott, of Bowness; and for the plastering, Mr. John Pattinson, of Windermere. A fine-toned bell of cast steel, and weighing several hundredweight, the gift of Mr. Sowler, Q.C., of Sawrey Knotts, has been for some time in the tower. The pulpit is a solid structure, but quite in keeping with the pleasing architecture of the church.

**New Chapel at Battersea.**—A few years ago a Methodist mission was commenced at Battersea Park, and a building erected, but this is now too small; and it is resolved to have a new chapel on the adjoining land.

**Bocking Congregational Church, Braintree,** has been reopened, after entire renewal of the interior. At the services held on the occasion the organ built for the church by G. M. Holdich, Esq., of London, at a cost of 250*l.*, was opened by the builder. The church plans were drawn by C. Pertwee, architect, Chelmsford, and the work was carried out by J. Brown, of Braintree.

**Gainsborough Church.**—The alterations in the parish church, Gainsborough, comprise the raising of the sanctuary and the chancel floors, and the placing of carved oak stalls for the choir in the place of the present seats, together with a new marble pulpit, and other improvements. The execution of the woodwork was entrusted to Mr. Cant, and of the ironwork to Mr. Baines.

The Contracts for the new Methodist school at Halifax have been let for 2,250*l.*

**Falmouth—Police Cells.**—The Watch Committee, having taken into consideration the condition of the present police cells, have come to the conclusion that new police cells should be constructed, and that the space under the Falmouth Town-hall is in every way suitable. Their report is approved.

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

## The Rotherham Hospital Competition.

The decision in this competition has been published, and is as follows:—The first prize is awarded to the design of Messrs. Mallinson & Bakewell, architects, of Leeds and Dewsbury (on whose plan was the motto 'Æsculapius'), subject to their being able to build the hospital at their stipulated price, 4,500*l.*, or within ten per cent. of that amount. Messrs. Mallinson & Bakewell have formally affirmed their ability to erect the edifice at the cost originally specified. The second prize (50*l.*) was given to 'A Loreburn,' the author of the design being Messrs. Cromby & Sons, Dumfries. Mr. Hill, of Leeds, competing as 'Deo non fortuna,' received the third prize, 25*l.* We have been informed that the designs submitted under the motto 'Yew Tree,' by Mr. Ralph Nevill, were considered to rank fourth in order of merit.

## The Roman Pavement discovered in the City.

As already mentioned by us, a fine specimen of Roman tessellated pavement was discovered whilst excavating for works connected with the new street from Blackfriars to the Mansion House. The exact site is as nearly as possible in the centre of what used to be the triangle formed by Bucklersbury, the Poultry, and Charlotte Row, and the level is no less than 17 feet below the present level of roadway at the Mansion House. Altogether the pavement found covers an area of some 150 superficial feet, and is formed of black, white, and red pieces of pottery, measuring about half an inch each way, and laid out in geometrical interlacing bands, the bands containing galloches, fret, &c. Beneath this mosaic, which is in parts as bright in colour as when first laid down, hot-air flues are traced running in various directions, but these will not be followed up until the mosaic has been taken up and removed to the Guildhall. By the time these lines appear, the pavement will have been viewed by thousands, the 19th, 20th, and 21st having been appointed for the admission of the public; but no doubt those interested in this treasure trove will have no difficulty in obtaining admission by applying at the Clerk of Works' office, opposite the side of the Mansion House. We are reminded of a passage in Stow, showing how often and how curiously history repeats itself. Writing in 1598 he says that three years before, 'Thomas Tomlinson causing in the high street of Cheape a vault to be digged and made, there was found, at fifteen feet deep, a fair pavement like unto that above ground, and at the further end at the channel was found a tree sawed into five steps, which was to step over some brook running out of the west towards Walbrooke; and upon the edge of the said brook, as it seemeth, there were found lying along the bodies of two great trees, the ends whereof were then sawed off, and firm timber as at the first when they fell, part of the said trees remain yet in the ground undigged. It was all forced ground until they went past the trees aforesaid, which was about seventeen feet deep or better; thus much hath the ground of this city in that place been raised from the main.' The italics are ours.

## Notes for Connoisseurs.

A very choice collection of modern pictures, of the highest class, the property of a well-known amateur, deceased, has been lately disposed of at the rooms of Messrs. Christie, Manson, and Woods, in King Street, St. James's. Among the more valuable and important examples were the subjoined:—Lot 19. Frederick Goodall, R.A., 1852.—'The Cottage Door,' a small but beautiful picture—76 guineas (Gambart). 21 and 48. Marcus Stone.—'Stealing the Keys from the hands of the Roundhead Soldiery' and a Female regarding 'Old Letters,' scene from *Christina Rossetti*—110 guineas (Pendleton). 30 and 42. J. Archer, R.S.A., 1864-5.—'Buying an Indulgence' and the 'Convent Gate'—'Go thy way to a Nunnery'—Shakespeare—105 guineas (Eckford). 33 and 43. G. Hardy.—'La Sœur de Charité' and 'Burdie'—125 guineas (M'Lean). 37. E. Frère, 1859.—'The Prayer,' an exquisite cabinet example—190 guineas (Wardell). 35. Same artist.—'The Cradle,' equally fine, cabinet size—160 guineas (Gambart). 37. F. D. Hardy, 1867.—'Baby's Birthday,' a splendid domestic scene, with numerous figures—305 guineas (Wilson). 39. Marcus Stone.—'From Waterloo to Paris.'—155 guineas (M'Lean). 45. F. D. Harvey.—'The Mousetrap,' a juvenile piece—121 guineas (Williams). 49. T. Sydney Cooper, R.A., 1867.—A splendid landscape, the 'Canterbury Meadows, with Cattle'—156 guineas (Tooth). 50. T. Faed, R.A.—'The Lady of Chalon,' a charming cabinet picture—190 guineas (Hayward). 51. J. C. Horsley, R.A.—'Burning the Books,' scene from Don Quixote. Exhibited in the Royal Academy. A splendid picture—410 guineas (Wilson). 52. R. Ansdell, A.R.A., 1854.—'The Shooting Pony.' A fine cabinet example—112 guineas (Graves). 53. T. Webster, R.A.—'The Soldier's Return'—165 guineas (Herbert). 54. W. Orchardson, A.R.A.—'The Story of a Life.' An aged lady relating her story to her grandchildren. Exhibited at the Royal Academy, 1866—350 guineas (Holland). 55 and 65. F. R. Lee, R.A., 1854.—'A Highland Stream,' and a pair of small river scenes in Devonshire—130 guineas (M'Lean). 56. J. Pettie, A.R.A., 1866.—'The Arrest for Witchcraft,' a splendid work exhibited at the Royal Academy—360 guineas (Whitworth). 57. P. F. Poole, R.A., 1857.—'The Mountain Stream'—120 guineas (Pendleton). 59. J. C. Horsley, R.A., 1855.—'The New Dress,' a charming cabinet picture—75 guineas (Fores). 60. Clarkson Stanfield, R.A., 1859.—'Tenby Bay,' a splendid work—310 guineas (M'Lean). 62. J. C. Horsley, R.A., 1866.—'Going to a Party,' a beautiful example—160 guineas (Holland). 63. T. Faed, R.A., 1865.—'The Last of the Clan,' with numerous figures, a magnificent work and the gem of the collection—750 guineas (M'Lean). 70. H. S. Hensinger, 1859.—'A Conversation, scene between a lady and her guardians'—75 guineas (Smart). 71. Marcus Stone, 1867.—'Seeking Shelter,' a very fine work—112 guineas (Ditto). 72. F. W. Hulme and H. B. Willis.—'River Scenery, North Wales, with Cattle'—185 guineas (Ditto). 73. James Webb, 1866.—'The Castle of Ischia; Bay of Naples'—95 guineas (Davis). 74. W. Duffield, 1863.—

A Dead Stag in the Snow; a splendid cabinet picture—185 guineas (Radcliffe). 75. Same Artist.—A Dead Swan, Game, and Fruit; a large and brilliant example—310 guineas (Fores). 77. L. Hughes, 1856.—'An Artist in his Studio'; a very fine work—128 guineas (Holland). 78. E. W. Cooke, R.A.—'The Goodwin Sands'; a lifeboat going to the rescue of the crew of a stranded vessel near the floating light; a chef-d'œuvre of the artist; exhibited at the Royal Academy, 1857; from the Collection of the late Sir Culling Eardley—575 guineas (Agnew). This was the last picture in the collection. The whole realised 7,750l.

#### Indian Notes.

A line of railway is about to be constructed to the foot of the Neilgherry Hills. It has already been sanctioned, and the Madras Railway Company have been requested to proceed with surveys, plans, sections, and all other preliminaries for the actual commencement of work.

The construction of groynes at Cochin for the protection of the beach from erosion by the sea has proved perfectly successful, and there seems now to be some chance that the western coast of India will one day be able to boast of a worthy port at the terminus of the vast system of the Madras Presidency railroads.

A new Civil Engineering College, presided over by Mr. Wilkieson, C.E., has been opened at Chuddergat. This college was established by His Excellency the Prime Minister, Sir Salar Jung.

The Shaik Othman Aqueduct at Aden, a moiety of the expenses of which was defrayed by the Sultan of Lahedj, has been completed. Aden will thus, it is hoped, be permanently furnished with a good supply of pure drinking water, the want of which has, for many years past, been one of the greatest drawbacks to the place.

A train was taken across the Borees on March 8, on the Great Indian Peninsula line, now pushing on towards Raichore; and the works have thus been carried in that direction 320 miles from Bombay.

*Architectural.*—The Government of India has recommended to the Secretary of State the creation of the appointment of Consulting Architect to the Government of Madras, on a consolidated salary of 1,200 Rs. per mensem.

It is reported that Government intend to restore all the marble work in Humayun's tomb at Delhi.

The new Mission Church at Ambrotie, Khetwadi, has been opened for public worship.

A chancel is to be erected to St. John's Church, Peshawar, 'in memory of the many gallant and worthy officers, civil and military, who have fallen in the valley by sword or pestilence.'

On March 1, the old Post Office at Bombay was burnt to the ground, and a new building must shortly be erected to supply its place. The plans for the structure, prepared by Mr. James Trubshawe, late consulting architect to the Bombay Government, and Mr. Roger Smith, have been before the Government of India for years, and were only sanctioned a short time previous to the destruction of the old building. The new Post Office is calculated to cost 60,000l., and part of it will be so built as to render the extension of the premises easy, by the addition of a second storey, should additional accommodation at any time be necessary. The building will probably be erected on a piece of reclaimed land between the Dockyard and the Apollo Bunder.

The digging of the foundations of the new buildings for the High Court of Bombay was commenced on March 1, on the Esplanade, nearly opposite the Agra Bank.

The Government of India has recently sanctioned the construction of a building intended to accommodate the public offices at Akyab, at an estimated cost of 11,645l.

## General.

**The New Courts of Justice.**—A return has been published which shows that in four years, 1865-6 to 1868-9, the sum of 886,000l. has been issued out of the Exchequer on account of advances for expenses of the site, &c., for the new Courts of Justice, viz.:—In the first-named year, 40,000l.; in the second, 438,000l.; in the third, 317,000l.; and last year, 91,000l. During the same period amounts of 40,000l., 363,000l., 375,000l., and 105,000l. have been repaid to the Exchequer out of the surplus interest fund of suitors of the Court of Chancery, making a total of 883,000l. Up to April 20, 1869, the purchase of site has cost 820,641l. 2s. 3d.; expenses of the commission, 3,096l. 6s. 9d.; surveyors' expenses, 12,762l. 12s. 6d.; legal expenses, 30,679l. 14s. 2d.; architects' charges, 9,865l.; incidentals, 8,222l. 3s. 9d.; making a total of 885,266l. 19s. 5d. In addition to this sum 2,830l. 17s. was paid from the vote for public buildings for preliminary expenses.

**Kensington Church.**—The old parish church of Kensington is doomed to destruction; the last services within its walls were performed on Sunday last. A new and very beautiful church is to be erected on its site.

**The Emperor's Roman Villa.**—The Emperor Napoleon is having a villa built at Rome on the Palatine Hill. The ground has been bought from the King of Naples for a sum of 50,000 f., and on the spot are found the remains of the Palace of the Cæsars. Although the new erections are nearly terminated, excavations are still carried on under the direction of M. Rosa (a descendant of Salvalor), who is the conservator of the ruins.

**The Price of Land.**—Some land in the parishes of Streatham and Croydon, which a few years ago only brought 200l. per acre, has lately been sold at the rate of 1,400l. per acre; and on Tuesday some land at Acton was sold at the Mart for 1,350l. per acre, which a few years ago would not have realised more than 300l. per acre.

**Oxford Drainage.**—A writer in the *Times* of the 15th says:—Oxford is in a swamp. During part of the year it is surrounded by stagnant water. This cannot be healthy, and it is certainly disagreeable. In severe weather Oxford is ice-bound, cold, and dreary. When the water retires the

place is covered by mist and fog. There is low fever in some parts of the city. All these things are a serious impediment to the increase, development, and general utility of the University, for they prevent that concourse of the best class of persons which would otherwise flow there and reside there. The engineers of the Thames Conservancy have reported that for 26,000l. the city of Oxford and its immediate neighbourhood can be made wholesome and well drained. Why should not Oxford follow the example of Cambridge and make a subscription to improve the outfall of the river?

It is proposed to hold a Great International Exhibition in Spain—at the Escorial Palace.

**Flint Implements.**—During the past year much discussion has arisen consequent on the finding of undoubted flint implements and flakes in what is known as the 'Hessle clay,' in Holderness, at Kelsea Hill. Bones of the extinct mammalia are found beneath this clay at Hessle and at Kelsea, but the flint implements embedded in a formation of the late post-glacial period, and so immensely older than the wide river gravels of the palæolithic age, presented a puzzle to geologists and archaeologists both. Recent visits by the Rev. J. L. Rome (of Hull), the Rev. W. S. Symonds (of Pendock, Tewkesbury), and Sir Charles Lyell, have led to the discovery that the clay yielding the flint implements on the west of the pit is not the Hessle clay proper, though derived from it. The deposit is regarded as being the washings of many centuries from old Kelsea Hill; and thus the highest geological authority gives a relative date to the clay, which makes it probably not older, and possibly more recent, than the flint-bearing wide river sands of York and Malton.

## QUESTION AND ANSWER.

### Question in Professional Practice.

Srs.—Who ought to take out the 'quantities' in a building contract?

The undersigned maintains that, unless building surveyors keep insurance offices, and can, not merely in theory, but in practice, indemnify contractors from loss by *under-measurement* (and why not clients also from *over-measurement*?), the architect of the building ought ALWAYS to take them out, with or without some surveyor or other advocate on contractor's behalf.

Because, *inter alia*,

1. The architect best knows the work intended, and precise meaning of the drawings and specification.
2. If he does not, the act of taking them out will perfect his knowledge of it; and, till he has taken them out, he can never really know the defects of, and perfect, his drawings and specification.
3. Because, having to prepare details during progress, and see the work carried out, he can neither do one nor the other well and justly unless he has the 'dimension book' always to refer to. Having it, I conceive he should always have the power to rectify *great errors pro or con*, if they occur.

WILLIAM YOUNG.

27, Keppel Street, May 10, 1869.

## MEETINGS OF TECHNICAL AND LEARNED SOCIETIES.

ROYAL ARCHEOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.—June 4, at 4 P.M.; ordinary monthly meeting.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Monday, May 24; ordinary general meeting.

ASSOCIATED ARTS INSTITUTE.—Saturday, May 23, at a quarter past 8 P.M. Paper by Lemon H. Michael, Esq., on 'True Nobleness in Art'; and annual meeting.

ARCHITECTURAL ASSOCIATION.—Friday, June 11, at half past 7. J. Tavenor Perry, A.R.I.B.A., on 'An Historical Account of the Artistic Treatment of Piers, Pillars, and Columns.' Also, night for the nomination of officers.

CIVIL AND MECHANICAL ENGINEERS' SOCIETY.—Wednesday, June 2, at 8 P.M. Mr. Arthur F. Pain 'On Building Stones used in the Metropolis.'

## EDITORIAL NOTICES.

No communication can be inserted unless authenticated by the name and address of the writer,—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

Correspondents are requested as much as possible to make their communications brief. The space we can devote to Correspondence will not usually permit our inserting lengthy communications.

Our readers are invited to address us on subjects of interest to themselves or the public. We shall be always ready to insert letters asking for a solution of any suitable questions of a professional or practical nature, and to receive replies to such enquiries.

## PUBLISHER'S ANNOUNCEMENT.

Advertisements intended for insertion in the following Number must reach the Office not later than 3 P.M. on Thursday.

### ADVERTISEMENT SCALE.

For Three Lines and under	£0 2 6
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For Half Page	4 10 0
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On pages preceding and following matter, special rates. Paragraphs, 1s. 6d. per line.

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Special arrangement may be made for a series of insertions on application at

Temporary Office, 4 Monument Yard, London.—GILBERT WOOD, Publisher.



# The Architect.

## ‘THE USEFULNESS OF THE INSTITUTE.’



To judge from what we see occurring around us, one may well conclude that, to the bulk of English architects and architectural students, a period of commercial depression, such as that we are undergoing, is not an altogether unmitigated evil. Architects who do not belong to professional societies, and architects who do, are alike meditating on the prospects of the profession, and on the *status*—a very unsatisfactory one—its members occupy in the busy community around them. Take from our metropolitan architects their country commissions, and what, as a rule, is the nature of their London practice? Truly the very reverse of ‘architectural,’ in the strict sense of the term. Foreigners come to London, and, rambling through its busy streets or secluded squares, will rarely find the pencil of the architect manifest in the plan, the proportions, or the decoration of our town dwellings, costly and highly rented though they undoubtedly are. Let the visitor make the round of our London suburbs, and he will find little to disabuse his mind of the inevitable impression that, in their house-building, the English do not employ architects at all. In this particular, and surely important, class of edifices, it is a mockery to prate of the ‘progress’ of taste and civilisation. We are making no advance whatever.

‘Let observation with attentive view’  
Survey the place from Bermondsey to Kew,

and surely no city in Europe so emphatically proclaims, as does London, the derelict condition of its architects. There are old houses in Portman, Cavendish, Grosvenor, and Hanover Squares, ay and old houses again about Gray’s Inn and Bloomsbury, that, albeit they are in their *ensemble* undeniably dowdy, give us as we pass them a cheery smile, with here and there a stone or a wooden doorway, on which some old boy of even the Bæotian days of Queen Anne has employed ‘the lamp of sacrifice,’ and made it chaste or quaint, as his humour led him—anyhow wholesome to look at. Such a doorway says at once, ‘Come in, and welcome!’ Let us enter, and we shall find old mantel-pieces, surbases, door-frontispieces, and ceilings to show that, for even a London dwelling-house, there were architects in those days; and that these things were all of them ‘purpose-made,’ to use one of the vile phrases of our own day, when there is no individuality in Cockney house-building, and only two phases of house-art to enjoy in a walk through London—to wit, brick house upon brick house, with door and window-holes crowned with two-inch York coping; or, ditto ditto, ‘done up’ with pilasters and ‘archy-traves,’ and crowned with a ‘neat cornish and ballystrade,’ not indeed ‘purpose-made,’ but applied by the speculating builders alike to the dwelling of the peer and the gin-shop of the peasant.

Ay, ‘the speculating builders.’ The mention of these gentry brings us round again to the object we had in commencing these observations. We have in London the architect, the contractor, and the speculating builder. Here and there a church or a bank, or a small corner shop, or an insurance office, indicates the handiwork of the two former; but the mighty metropolis in the mass, what of it? It is the work (anything but handy work) of the speculating builder; and the worst of it is that the London public, seeing this gentleman’s productions all around them for miles and miles—ay, and miles again—look upon him as the author, designer, and first-cause of all London ‘architecture;’ and in the main *they are right!* The evil is owing largely to the short leasehold system; but in some degree it can surely be encountered and be ultimately removed.

The remedy will not be forthcoming in our day, but future architects may see it. It lies in a searching, severe, and thorough reform of our existing system of architectural education. We sneer at the speculating builder, poor fellow! but if we continue to look on an architect as a person who has served three or five years’ apprenticeship, as the case may be, to learn ‘the art, trade, and mystery’ of an architect and surveyor, the public will look upon him in the same way, and will draw a very fine line indeed between their estimate of the ‘builder’ so called, and the ‘architect’ so educated—or rather so uneducated.

Existing architects—even the oldest or the best of us—have little to be proud of, when we reflect on the many, rare, varied, and conflicting qualities an architect ought to possess. Few, if any, but architects themselves are conscious of their number and difficulty of acquisition. What a house-architect should be, should know and be able to do, was described the other night at the Society of Arts; and the paper we have reprinted left out matters supplemented by speaker after speaker in the discussion that ensued. The necessary qualities are indeed ‘legion.’ Mr. Smith’s paper was intended to give the external public some insight—perhaps its first

insight—into them. Dickens, in one of his popular tales—and some people will read nothing else—describes a truculent architect sending his pupil into his back yard, there to find a heap of bricks wherewith to try his hand at building a house; (!) and ere the close of the same wondrous ‘architectural’ tale, excites the hysterical indignation of his readers at Mr. Pecksniff’s appropriating to himself as its architect the design (‘supplied’ all complete in one clever drawing?) of his quondam pupil; nor does the writer, the friend and companion of artists by the way, stand alone in his *naïveté*. The outside public know nothing of an architect’s duties: witness even recently the ludicrous escapade of our accomplished Chancellor of the Exchequer in his anticipated saving of 2½ per cent. by his Whitehall Palace *réchauffé!*

Now, if we cannot quite teach even cabinet ministers what are the duties and the uses of an architect, we can at least, or we ought to, popularise a solution of the question ‘Who is an architect?’; and even this will be an immense improvement on the present state of things. All professional writers are agreed as to what are the essentials of excellence in building, and what the essentials (three-fold) of an architect’s training; but even architects themselves are, strange to say, unable to declare to the external public who is and who is not an architect. The public voice would doubtless decide it thus—‘Any one who calls himself an architect—on a brass-plate;’ and, sooth to say, we do not yet know how authoritatively to gainsay its *dictum*.

The public, indeed, proceeds to settle with a high hand, not only who is an architect, but how he shall practise his profession; what he shall do for his fees, and what fees he shall receive; who shall compute his quantities, who shall be responsible for them and to whom; what the surveyors shall receive; and all the rest of it—utterly regardless of every principle of etiquette, of custom, or of ordinary consideration for matters it is profoundly ignorant of.

While all this is going on, and every day’s delay increases the anomaly, the Royal Academy of Painting, Sculpture, and Architecture is holding its ‘one hundred and first’ Exhibition, and, as if in mockery of architects, and complaisant echo of the popular voice, has opened its new domicile with one of the most paltry architectural displays we remember. For above a century has the Academy ‘fostered’ the art in this country; and it would not be amiss to inquire, of what earthly use to English architects is or ever has been the Royal Academy? It now appears, that after a full century of its neglect, architects have been compelled, at the instance and initiative of that commendable body the Architectural Association, to establish their own Architectural Exhibition. It is hopeless to look to the Royal Academy.

There is another royally chartered institution to which in their extremity the young architects naturally turn. Much to its credit, it established some years ago the Voluntary Examinations; though from an inherent defect in its own constitution it was unable or unwilling to invest them with a conventional value, that would year after year impel the students to avail themselves of their obvious advantages. The architectural student, who had won his spurs, carried them home with him; talked about them to his friends, who forgot them; but saw, year after year, new fellows and new associates elected to annex F.R.I.B.A., &c., to their names, not merely on their works, but in even the London Directories, and the public applause courted, and not unfrequently won, by the display of these imposing titles; and while this was so, and the Institute, really rich in its somebodies, yearly gathered in its nobodies, the students very naturally meditated on the commercial worthlessness of the Voluntary Examination pass; and, being merely human and commercial, as were the Fellows and Associates who were supplanting them, fell away, and virtually dropped the examination scheme, excellent though it was. One thing was at least made very clear, viz., that the Institute, by its application of the scheme, left the moot question, ‘Who is an architect?’ just where it had been and still is—*in nubibus*.

Years ago the Institute might have taken up the grave question of competitions; but did not. It will some day find itself compelled to do it. Let us leave it for the present. The graver question of architectural education—the settling of ‘Who is an architect?’ once dealt with, will be found to embrace and to deal with that and nearly every other professional question at issue.

There are, we trust, signs, as we said at the outset of these remarks, of a general movement upward of the professional body. It assumes just now the demand for a higher course of education, and it is well. The Architectural Alliance (again at the instance of the Association) is about to petition—memorialise would be a fitter term—the Institute to exert itself to procure a system of compulsory examination. This is a step in the right—the only right—direction.

The Institute, if willing, may be powerless to influence the Imperial Parliament in the direction of a compulsory examination. We fully expect to learn that this will be the issue of any attempt to promote such a step; but with a very slight, and doubtless very practicable alteration of their charter, the Institute may within its own body accomplish all its intending petitioners hope for. It can set its own house in order, and so arrange matters that, in place of being what it is and has been for years, a mere London club of Architects, it may really become what it should be—a truly National Corporation: consequently it was with great pleasure that we heard of a resolution of the Institute itself having been passed at its

annual meeting on the 2nd inst. to the effect that 'the Council be requested to call a special meeting, to consider a motion that a Committee be appointed to determine what course is necessary to increase the usefulness of the Institute.'

'The Usefulness of the Institute' would doubtless be increased by the adoption of many possible improvements. But what would really enhance its efficiency would be this—to take measures at once for laying down a compulsory rule for the examination of all future Associates and other inferior members, and a higher one for all future Fellows.

This the Royal Institute of British Architects can very well afford to do. It numbers among its members some of the most distinguished architects of the country. These gentlemen have fortuitously, and for good fellowship and respectability's sake, joined its ranks. It can point to them as its worthy Fellows and Associates, but—and this is its blight—it has never made an architect. Outside architects become famous without the Institute, and then for mere fellowship enter its ranks. In return for its royal *prestige* the Institute undeniably does some good to the profession, but there is one great evil it does undeniably perpetrate, and it is this—It opens wide its doors to the good and the bad architect alike, and its membership is little or no guarantee of the possession of a knowledge of the science or the art of architecture. We say this in a professional journal, in friendly counsel, and with a long-felt deep desire to see the Institute take its proper position, and in doing so raise the whole standard of the profession.

The Institute can now well afford to bring in such a reform. On the other hand, English architects who are not in its ranks can well afford to let bygones be bygones, and rest satisfied with seeing all present Fellows and Associates retain their rank without examination. Let those who have now been admitted throw all ungenerous, selfish feeling aside, and reflect on the immense number of ardent young men, not yet of their body, and who, but for such a reform as this, never may be. There is certainly a great and a reasonable clamour outside for a better state of things; for some means of enabling the public to separate the quack from the expert; even, in short, for a new Society of Architects. Let us all hope that it will be inaugurated by what would appear to be the object indicated by the recent motion of Professor Kerr and the Architect to the City of London, a radical reform in the Institute itself.

### OUR RAMBLER

AT THE ROYAL ALBERT HALL.

TO see the works of the Royal Albert Hall from a point which commands a general view of the whole, it is almost necessary to climb the scaffolding of the Memorial in Hyde Park; and months ago, when the great Amphitheatre, now ready for its roof, was less advanced, and from the Kensington Road presented only the appearance of a vast mass of reddish brickwork, it was a surprise, on gaining that point of observation, to behold once more, at one's very feet, the fine sweeping lines and massive walls which a traveller in Italy has learned to associate with the greatest civil works of the Romans—their amphitheatres; lines to which we are quite unaccustomed in modern practice, and walls such as now but seldom occur in secular buildings, although often met with in modern engineering works.

The Albert Hall is, as has been hinted above, essentially a Roman Amphitheatre in its form and main idea, but it is a modern adaptation of that idea, and for a purpose wide of the bloodthirsty rage after savage excitement which seems to have drawn the crowds of Old Rome into the Coliseum. There appears to be little room for doubt that in Rome the spectacle in the arena was almost all-absorbing, or at any rate so exciting as to concentrate upon itself the main attention of the spectators. In our modern English displays, and especially in the monster assemblies which our International Exhibitions and our Choral Societies have taught us to draw together, there is no doubt a very strong tendency to take almost more pleasure in watching the crowd and mixing with it than in examining the exhibition or display which draws that crowd together; or if this be going too far, it is at any rate certain that the crowd intensifies—where it does not create—the interest taken in the spectacle. The person who could sit solitary in an empty theatre and see a play acted before himself alone with pleasure, or even with patience, must be something more, or less, than human; and the denser the crowd, the greater the impression made upon each member of it by all the others.

This wonderful attraction, this animal magnetism lurking in a multitude, is the true secret of the charm which draws Londoners to the Crystal Palace. London has hardly any spectacle to offer of equal interest to that presented by the great Handel Orchestra at Sydenham, full to the ceiling with tier upon tier of animated fellow-creatures; though this is surpassed in some respects by the richer and more condensed, though smaller, display to be seen in the Opera House on an attractive night, when all the rank, fashion, and beauty of London at the height of the season can be taken in at a glance, or scanned in detail.

To double the Handel Orchestra and attract into it an audience as *distingué* as that of the Opera itself, is (stated broadly) the ambitious and brilliant proposal of the Corporation now erecting on the South Kensington estate the Royal Albert Hall of Arts and Sciences. That building will start with the advantage of having a numerous and a very fashionable body of seat-holders for its owners; and should the two

thousand persons, many of them of high distinction, who are to pay for its erection, be disposed to show themselves in it when it is open, there can be little doubt that the remaining six thousand for whom there is room will flock there to look at them, and, as far as seeing goes, will be well repaid by the sight. It may be open to doubt whether the means which will have to be taken in order repeatedly to draw such audiences together may not be such as to contrast somewhat strongly with the kind of monumental or memorial character implied by the name of the building and by its local relationship to the Albert Memorial, but this is not the place for such an inquiry. The present paper only proposes to tell something of what has been seen by the writer during several rambles over the works.

The building which we propose to describe lies between the Horticultural Gardens and the main Kensington Road, and was contemplated some time ago. It will, indeed, be in the recollection of some of our readers that at the time of the great limited competition for the Albert Memorial, separate designs for a Hall to be at least partly connected with the monument were asked for, and were submitted by some of the architects. What is now being carried out is an oval building, of which the longest axis lies north and south. Its general design is due to that clever military engineer and architect the late Captain Fowke, and the actual execution to Lieutenant-Colonel Scott. It will be a covered amphitheatre of great size, and it is proposed to hold in it public congresses, performances of music, exhibitions, conversazioni, distributions of prizes, and other similar monster meetings.

The site having been granted by the Commissioners of the Exhibition of 1861 on terms equivalent to a free gift, the expense of erecting the building remained to be met. This expense was estimated at 200,000*l.* (an average of 25*l.* per sitting), and it was determined to raise the money by selling two thousand of the seats at one hundred pounds each. Of these by far the larger portion, though not the whole number, has actually been taken, and a contract is entered into with Messrs. Lucas under which the Corporation building the hall are, we understand, secure from the risk of being called upon to make up the deficiency from any other source, if the full two thousand be never sold. Such contracts are often necessary, in order to facilitate the action of large bodies of men whom it is impossible to render individually responsible; but of course, as they partake of the nature of an insurance as well as a contract to build, they raise the cost of any structure by a very perceptible percentage.

This important building resembles closely, as we said before, in shape and arrangement an ancient Roman amphitheatre, and it even approaches to the dimensions of some well-known examples. It differs, however, very materially, as we shall see, in construction and in distribution of seats from those simple, convenient, and almost indestructible structures. The shape adopted is quasi-elliptical, and the seats will partly slope up from the centre towards the walls, and partly rise in tiers, gallery above gallery. The central floor space is not to be the invariable centre of attraction (as it was with the Romans), and will therefore often be occupied by seats for the audience. The continuity of the tiers of spectators above it, which, in an old Roman amphitheatre, was unbroken, is, on the other hand, interrupted by a large orchestra and an organ, intended to be the most complete in the world.

The interior then will present in the centre an oval floor space, known as the arena, and holding, when used by an audience, 800 persons. Round this comes a zone of seats rising rapidly, seat above seat, and containing probably the best seats available. This is termed the amphitheatre. Behind and above these comes a belt of boxes in two tiers. Above these is a second wide belt of sloping seats, known as the balcony. This reaches the main wall of the building. Above this point that main wall, pierced by an open arcade of lofty and wide dimensions, will be seen, and this arcade with the kind of loggia behind will form one of the main features of the interior. This loggia forms a picture gallery 20 ft. in width, encircling the building and lighted from above; and on any occasion when additional sittings are required, they will be obtainable here to the extent of 2,000. This brings the total to over 8,000, thus made up:—

Arena . . . . .	800
Amphitheatre . . . . .	1,900
Boxes (two tiers) . . . . .	820
Balcony . . . . .	2,700
Gallery . . . . .	2,000
	8,220

These zones of seats do not—except the top gallery—sweep uninterruptedly round the structure, nor do they rise in an unbroken slope. At one end of the oval are placed the large orchestra and organ, and in the interruption caused by this feature will occur one of the great variations between this modern amphitheatre and any of its classical prototypes. The belts of boxes will form a second contrast, and the interruption which they will cause to the sweeping slope from the arena to the outer boundary—which existed in the Roman amphitheatre, and has been preserved in the Sydenham orchestra—will probably combine with the feature already named to modernise largely the whole aspect of the interior.

What appearance the covering of an ancient amphitheatre may have presented is open to doubt, but there can be no hesitation in saying that, with our command of wrought and cast iron and glass, we have the means in our hands of roofing in such a structure as has

been described more completely and effectively than the ancients. The Leeds Exchange, a remarkably clever work of Mr. Cuthbert Broderick, has an area similar in shape to the one under discussion, which has been roofed over without any central lantern on the principle of trussed purlins, running in a direction more or less parallel to the longer diameter of the oval. The roof of the Albert Hall will not be of this nature, but will rather resemble in construction that of the 'Halle aux Blés,' and will, in fact, present a series of radiating trussed ribs, uniting in a central ring and rising from the walls; the homely and familiar example of a very flat umbrella being the best comparison we can think of, as not inapt to give an idea of the general form and curve of the covering. The ceiling is of a flatter curve than the outer roof, and will, we believe, be very largely formed of glass, and the roof covering will be also to a great extent semi-transparent glass. To prevent inconvenience from the direct rays of the sun, a velarium made in distinct gores, corresponding to the spaces between the ribs of the roof, will be used; and we understand that it has been arranged to furl or unfurl each gore separately. By this judicious contrivance the individual sections of the velarium will be of a size not too large to be managed with ease, and so much of it only need be used at any one time as is absolutely required. The open eye in the centre, protected from the direct entrance of rain, will no doubt act as a ventilator, and the space between the inner transparent glass ceiling and the outer roof-covering will afford an opportunity for the same sort of effective lighting up at night as has been practised at the Théâtre Lyrique in Paris.

All that we have as yet described lies within or rests upon the main wall of the building, which encloses the auditorium and carries the roof. A second wall less high, but of great strength, runs outside of and parallel to this, and the space of twenty feet is left between the two. This space holds the staircases, crush rooms, and refreshment rooms, and the picture gallery already named. On the lowest storeys, where the boxes and amphitheatre approach one another, box-corridors have been readily obtained behind and under them, and within the main wall. Altogether it is calculated that space enough to accommodate the whole auditory is afforded by the rooms and corridors. The staircases are carried on iron girders and carriages, and are of stone. They are numerous, well placed, and wide, those giving access to the highest gallery being the least roomy, and they are to be supplemented by lifts for the use of the lame and infirm, or others.

The walls are entirely of brick, with dressings of terra cotta. The general system of floor construction employed is that combination of iron girders and concrete known as Fox and Barrett's. This is well understood in this country, and probably as well suited to our materials as any familiar method. It was, we believe, the extra cost entailed by the employment of any novel plan which prevented the attempt being made to introduce some lighter and yet simple fire-proof floor. This is to be regretted, for when iron and terra cotta have been used with so much intelligence separately, it would have been of great advantage could we have been presented with a good example of their use combined.

Thus far we have dealt with the general shape and internal aspect and arrangements of the building. The exterior will present a lofty wall of red brick, relieved by terra cotta dressings of a rich cream colour freely introduced. This wall rises to a height of about 80 feet from the external ground-level, and within this, rising above it, and some 20 feet back from it, will be seen the real main wall, which, including its parapet, reaches a height of somewhere about 100 feet; from this wall will spring the roof. The two walls we have referred to are, in fact, the main features of the brickwork, and they run round quite uninterruptedly. From the outer wall, on the ground-level, three porches are thrown out, one at each side, and one at the northern end. The southern end, joining on to the conservatory of the Horticultural Gardens, will be entered thence. These porches are almost entirely formed of the terra cotta used for the dressings, and the entire base of the external wall is faced with a moulded and panelled mass of the same, reaching to a height of about 13 feet, so as to form a highly-enriched plinth for the upper part to stand on. Above this base the outer wall is divided into three storeys, and the crowning features of the upper storey will be the frieze of Mosaic work to which the Rambler called attention in an earlier number.\* There can be no doubt that the external features of the building will excite much notice as they come to be seen. The treatment of the terra cotta will probably not only draw attention to the suitability of this material to take a large share in the exterior treatment of London work, but will show excellently well the views of those who hold that terra cotta should be burned as it comes from the mould and used in small blocks. The blocks in use here do not measure more than 18 inches in any direction, and average 4 courses high (varying from 3 to 5 courses); they are bonded either  $9\frac{1}{2}$  or  $4\frac{1}{2}$  inches into the brickwork, and are used as they come from the kiln, having been burned as they were moulded. The design of individual ornaments and features is no doubt open to criticism; but we consider that this terra cotta work, when seen in large masses, will furnish the strongest of all arguments in favour of the plastic rather than the sculptural treatment of the material.

In the actual carrying out of the work much practical care has been

shown. The brickwork is carried up in a material virtually incompressible—a mortar made of one part of lime and one of cement with six of sand; and if some extra expense has been incurred here, it has been compensated for by an entire freedom from settlements, and the possibility of *stepping* the foundations so as to suit the varying nature of the bottom, which, over so large an area, was found by no means uniform. The dryness of the whole has been ensured by running a drain round the building seven feet below its floor level. This drain has intercepted and carries off a large amount of water, and its work is doubly important because the arena is sunk 15 feet below the finished level of the external ground. The piers of the main—and of some of the minor walls—are pierced by flues for ventilating purposes. These will serve as channels for fresh air, which is to be forced in by fans driven by steam power. The main wall is three feet thick above the ground-floor level, and rises, without diminution of thickness, to the height of 102 feet from the arena floor to the wall plate. This plate is a tremendous structure in itself, covering the whole top of the wall, and so bolted together as to form a continuous tie of the most solid character. To it are bolted chairs, in which sit the feet of the principals or ribs; and not the least curious part of the aspect of the works at the present moment is presented by the incomplete ribs, rising at various points, and stretching themselves out in the air as though trying to reach the central framework on which they are all to be united.

We have spoken of the present aspect of the work—and to some extent that aspect is less interesting than what was presented a month or two back. Then the centre of the area was occupied by a tall and solid scaffold, from which four arms of scaffolding, so to speak, radiated north, south, east, and west. The motive power for the hoisting and pumping was a steam engine at this centre, a hoist was placed in each of the four arms, and the materials thus raised were readily carried to the work. This arrangement seems now almost choked up by a most prodigious framework of timber scaffolding, the central part being of squared timber and the remainder of poles. The object of this scaffold is to carry the platform used in fixing the trusses of the roof; and as the space below is not unencumbered, and the distance from centre to circumference is a variable quantity, it is probable that in thus forming a platform of great strength and large size the contractors have acted wisely; but the contrivance has a clumsy look as compared with the beautiful travelling scaffold which we referred to in our Rambler at the St. Pancras Terminus.\*

Some idea of the main lines of the different galleries may, however, even now be obtained, for they are in a forward state; and a slight notion is got of the vast size of the interior when catching a remote glimpse of a piece of wood, rudely cut to represent a human figure, and painted white. We learn that this speck is the full-size outline of a vocalist placed where she would stand in the building. Notwithstanding the vast extent of space, there is every ground for hoping that the building will prove well adapted for sound. The use of resonant materials, and the proper distribution of the structure, have been understood by those who have the work in charge, and have been very carefully attended to; while the glass ceiling seems to us to offer a safeguard against any danger of echo from above.

The actual, if not apparent, size of the structure may be understood from the leading dimensions. The greatest diameter of the space enclosed by the main wall is 219 feet 4 inches; the shortest diameter is 185 feet 4 inches. The extreme length of the building, exclusive of porches, is 272 feet, and its breadth 238 feet. The height, from the level of the arena to the wall-plate, is 102 feet, and to the base of the lantern 157 feet. The heights from the finished ground level to same points will be respectively 90 feet and 142 feet 3 inches. The depth of iron ribs of roof at the centre will be 17 feet 9 inches.

The plan of the structure is not a true ellipse, but an approximation formed by uniting four arcs of circles, and does not differ, we believe, by so much as 9 inches from a true ellipse at any point. The longer axis, or centre line, runs north and south; and, prolonged northward, would cut the centre of the Albert Memorial; while, if prolonged southward, it coincides with the central line of the Horticultural Gardens. There will be a foot approach from the gardens, and the two lateral porches will be used as carriage porches; but it is extremely probable that the north porch—next the Park—will be used as a foot entrance only. The road in front of the building—between it and the Albert Memorial—will probably be straightened, and made parallel with the main lines of the two buildings; and provision has been made, in putting in the foundations of the north porch, for a tunnel under the roadway—an improvement which the experience of the tunnel between the Crystal Palace and the High Level Station ought to encourage the directors to undertake.

It only remains to add, that we reserve for an early number a more detailed account of the iron roofing. The main structure is being carried out by Messrs. Lucas. The terra cotta is supplied by Messrs. Gibbs and Canning, of Tamworth, and the facing bricks are Cawte's Fareham bricks. The whole work is under the superintendence of Lieutenant-Colonel Scott, R.E., as 'Director of Works.'

The New Congregational Chapel, Toxteth Park, Liverpool.—In a limited competition of fifteen, the plans of Mr. Oliver, of Newcastle, and Mr. Henry H. Vales, F.R.I.B.A., of Liverpool, were selected and submitted to the general committee, when four voted for Mr. Vales and four for Mr. Oliver, the chairman giving the casting vote for Mr. Oliver.

\* ARCHITECT, No. 2, 'Our Rambler at South Kensington.'

\* ARCHITECT, No. 6.



## RESTORATION OR CLEANING.

THE COUNTESS OF RICHMOND'S TOMB.

A CONTROVERSY has sprung up, at the close of the Whitsuntide holidays, on a subject of unusual interest for our readers. The gilded bronze effigy on the tomb of Margaret, Countess of Richmond, mother of King Henry the Seventh, has been cleaned from the black incrustation which has hitherto veiled the delicacy of the work from the eyes of the present generation. It was, no doubt, anticipated by the founders of the superb monuments of the Tudor times, that the protection of the bronze in which they wrought by a coat of gold would enable it to defy the tooth of Time. Had the gilding been sufficiently thick, or at all events sufficiently homogeneous and impermeable, we must still hold that such would have been the case. As it is, however, sulphur, in some subtle form, has penetrated the sheath of gold, and has attacked the copper of the subjacent alloy. It would seem that an action similar to that termed endosmosis has taken place, for a salt of copper has exuded from the surface of the work, and has spread over and concealed the gold. The removal of this disfigurement (as to which the merit of perfect success is claimed for the First Commissioner of Works and Public Buildings and his subordinates) is said to have restored this fine tomb to its original beauty. An extension of the process to the other bronze monuments in the Abbey is proposed. It is resisted, on the other hand, by the citation of the usual arguments against restoration, and by the statement that the present dingy state of the bronze work so thoroughly harmonises with the subdued tone to which neglect and unremoved dust have reduced the former splendour of the Abbey, that a bright golden hue would be incongruous and displeasing.

In almost all questions on which it is possible for educated men to hold diametrically opposite opinions, such possibility arises from the fact that different principles are involved. It is so in the present case. Two distinct orders of consideration go to the decision of the propriety of restoration. Monuments may be regarded as works of art, or as historic memorials. The artist and the archaeologist will thus look at them from different points of view.

The former will first desire to be able to see the work of his predecessor in as fair and well-tended a condition as when it received his final touch. This feeling may be divided between the wish to see a work of art as perfect as it could possibly be rendered and the desire to trace the very touch of the creative artist. But, in either case, it will be essential to the satisfaction of the admirer that all excrescence should be removed, and that the work of decay should be arrested. It may be matter of doubt whether it is preferable to attempt to restore, in the case of any perceptible injury suffered by the object. To see a hand without fingers, or a face without a nose, always causes positive pain to a sculptor; but men of taste may be, and are, divided on the question whether it is better to replace such losses or not. As matter of artistic education, it is certainly better to have the undoubted work of a master, even if unfortunately imperfect, than to possess the result of such a restoration as may have rendered the subject more agreeable to the eye. Thus the Venus of Milo has more value to the student of sculpture than the Venus de' Medici, although the latter will always command the far larger number of admirers.

From the artist's point of view, then, the only question as to the propriety of cleansing the Westminster bronzes will be, how far it can be done without destroying any of the delicacy of the original work.

The archaeologist looks at the matter from the very opposite point. To him the corrosion is as real as the sculpture; the work of the tooth of Time is as precious, as a historic record, as is that of the chisel of Phidias himself. With all collectors this sentiment is strong. The green result of metallic decomposition is lovely in the eye of the connoisseur. At first it was prized only as an evidence of authenticity. By degrees it assumed an adventitious value, and at length the enthusiastic admirer of the antique hugs the very scythe of Time.

The archaeologist, then, will naturally and consistently urge that the tombs should be left alone.

One consideration may, however, be added, which, other things apart, seems to turn the scale in favour of the artistic view of the case; although without going so far as to be in favour of restoration, properly so called.

The loving and purposed neglect of the archaeologist tends to the destruction of the object of his admiration. The wiser care of the artist tends to its preservation. To carry, as far as possible, the assent of our readers to this proposition, we will confine it specifically to bronzes. In the case of gilded bronzes, we do not see what objection can be urged to the process of cleansing, if it can be perfectly effected. We have an instructive illustration of the case in the present state of the antique bronzes in the Museum of Naples. There we can see, side by side, statues of equal antiquity, the one part, green, mouldy, with the surface entirely gone, being replaced by a series of pits, the sharpness of the original work lost—and, what is worst of all, the whole bronze incapable of being cleaned, or in any way preserved; crumbling before our very eyes, with a certain and not very tardy decay. We see others bright, clean, and polished, sharp in every outline of contour, or eyelid, or subtle and delicate wrinkle, durable as well as beautiful, and capable, with due care, of a preservation to which we can affix no term.

The oxidised bronzes have been taken from the Tufa of Pompeii. The slow chemical action that has taken place for nearly two thousand years has wrought a disintegration, lamentable in itself, and yet more lamentable in its results with regard to the future.

The non-oxidised bronzes found at Herculaneum have been wrapped round in an impervious coat of molten lava. From this they came forth as from the sand of the founder, in the exact state in which they were maintained as ornaments for worship or for use when Vesuvius woke from an immemorial slumber. As such they may endure as long as man cares for Rome and Roman relics.

The London atmosphere during four hundred years has not had the same destructive effect as the Pompeian Tufa, and the tombs in the Abbey have been partially protected by their gilding. The actual incrustation is only

a stage in the progress of slow decay. To arrest this decay would be the wish of every one. That this can only be done by a process that shall leave the monuments in the same state as that in which they were when first completed, should hardly be considered objectionable by an unprejudiced judge. But the work will be incomplete unless, by electro-metallurgic or chemical means, the golden sheath be so far completed and perfected as to prevent a renewal of the corrosive atmospheric action, which will otherwise recommence with increased activity.

That the imaginative charm of 'the holiest of our holy places' would be broken by the restoration of the pale golden lustre with which the features of the Virgin Queen, and her more lovely and unfortunate cousin, gleam from their lofty monuments, we do not believe. Let the most conservative archaeologist be reassured. He may count, for his lifetime at least, on the unbroken prescription of ecclesiastical neglect. Let us varnish the tombs in the Abbey to the lustre that adorns some of the finest Italian churches, and we may yet safely count on the care of the dean and chapter to allow, within a year or two, so thick a pall of dust to gather over them as shall satisfy the yearnings of the most passionate admirer of a subdued tone. When we see how our finest marble sculptures are obscured by the evidence of long neglect, we need not be apprehensive as to the overpowering splendour of our cleansed and purified bronze.

## THE ARCHITECTURAL EXHIBITION.

(SECOND NOTICE.)

WE must protest against Mr. J. W. Fowler not mentioning Mr. Street's name as the architect of the tower and spire in his drawing (62) of St. Mary's Church, Lichfield, as we are sure unintentionally, an unwarrantable appropriation of another man's brains. Mr. Street's tower and spire is strong and good, although the composition of the flat pediments over the belfry windows does not seem quite happy, and the cornice and parapet are weak; but this may be the fault of the drawing. We cannot like the way in which Mr. Fowler has carried his clerestory windows through the chancel, and the general sameness of the tracery shows poverty of design and want of study; the east window is in bad perspective, but the drawing is carefully tinted. In his view of Binbrook Church (60), we give Mr. Fowler all credit for his tower and spire and boundary wall, which are clever. The general design is more simple, but open to the same objection as 62, as regards the clerestory windows; and Mr. Fowler, or his artist, might bear in mind that shadows are not so blue as he has depicted them.

No. 65 is a sketch for new premises proposed to be erected in Oxford Street, by Mr. Robert W. Edis, the zealous Hon. Secretary of the Exhibition. This design suffers considerably from the drawing, which seriously detracts from the merits, and adds to the demerits: making allowance, therefore, for this, we must give great credit to the treatment of the second and third floors, and the way in which the continuous arcade of the second floor is gathered together in couplets under the bold dormer roofs of the third floor; the design deserves more than ordinary attention as being an illustration of terra-cotta decoration. We wish Mr. Edis had carried the leaded glass which is shown in the upper windows throughout the building. We suppose, as usual, Mr. Edis has been the victim of the client, and been obliged to sacrifice solid masonry, which is so manifestly wanted in the base of the building.

We are sorry to see Mr. T'Anson's name attached to the drawing, 66—Views of House at Shoreham; for, independently of the perspective being very unhappy, the drawing is weak, and the architecture common-place—not in any way worthy of Mr. T'Anson's name and reputation.

In his Schools at Bromyard, Herefordshire (69), Mr. Kempson fails as much as he excels in his design of Asylum at Hereford (42).

Mr. J. W. Fowler, in his drawing (70) of Morton Hall, Notts, presents us with a careful, effective sketch with much praiseworthy design, damaged by the perfectly unnecessary addition of the ornament to the top of the parapets and the undeveloped character of the turret; the chimneys are effective, and very good bits of plain brickwork. The colourist deserves the greatest credit for his broad treatment of the whole drawing, though his shadows are careless.—(71.) A careful pen-and-ink sketch of All Saints' Church at Moulton, Leicestershire, as restored by Mr. W. Smith. This appears to be a very conscientious restoration, and does Mr. Smith credit as an antiquarian.

We must protest against the design of Sacrament, St. Saviour's Church, Croydon (72), by Messrs. Mullins and Lee. It is simply drawing-room sculpture, with pretty inanities of figures and plenty of alabaster surroundings, but nothing tending to improve the architect's or the sculptor's reputation, and we must protest once for all against alabaster forming a basement for common brickwork. Mr. G. R. Clarke exhibits St. Luke's Church at Maidenhead in No. 73. It is a very plain building.

We are glad to see Mr. Ewan Christian's name again in the catalogue. His House at Combe End (74) is a plain, unpretending design, with many good parts; the chimneys are bold and good, and the grouping of the offices picturesque. His Church at Folkestone (75) would have been a very successful drawing, had it not been coloured in such a metallic manner; the west end, as shown in the photograph attached, is simple and good, as also are the transepts and east end; but we do not like the way in which the aisles are proposed to be roofed—the numerous gables would take away from the breadth of the building, and utterly hide the simple and unpretentious clerestory; the triviality of the insertion of coloured stone or brick in the relieving arches, and the weakness of the doorways, are the chief faults in this design. The belfry windows are powerfully designed, and Mr. Christian's example of attaching an explanatory plan to his drawing is much to be commended.

Manchester will soon cap Oxford in towers and spires; but, however effective they may be in the bird's-eye view of the city, we cannot see the use of the big, square, and somewhat ugly campanile tower in Mr. Thomas Worthington's drawing of Police Courts, &c. (77), which seems to crush the rest of the building; the detail throughout is poor and weak, and the archway at the end not in character with the other work.

No. 78 is a good pen-and-ink drawing of a new church at Hertford, by Mr. John Johnson; the belfry stage of the tower and the spire are exceedingly well managed and carefully designed, as also is the porch, saving the very ugly canopy cutting up through the apex of the gable; this we hope Mr. Johnson will reconsider. 79 is another careful and well-tinted drawing of Langton Hall, by Mr. J. W. Fowler.

We are glad to see Mr. Ernest Turner, in his Shop Front, Bond Street (82), attempting to leave the beaten track of girders and bracketed cornices, and honestly arching over his window and door openings; the windows on first-floor seem too small for their work, and cannot Mr. Turner persuade his client to complete the whole front, and thus avoid the incongruity of the old and new work? 83 is a very beautifully executed outline drawing of the very beautiful interior of the Church of St. Mary Overy, by Mr. W. Howes; careful and good in perspective and drawing.

Mr. W. Emerson, in his drawings for New Club at Bombay (87) and Entrance to New Markets at the same place (88), shows some very bold and vigorous work, very early in its character and well-studied throughout; the cutting in two of the heavy vaulting ribs is novel, but hardly satisfactory, and the whole detail is coarse, but evidently designed to suit the capability of the Bombay workmen, and the drawings are carefully drawn and tinted: we should hardly have supposed that the same architect could have designed the proposed New Bank at Bombay (86), for it is as bad as the others are good.

Messrs. Hadfield and Son contribute a heavy pen-and-ink sketch of New Church and Presbytery proposed to be erected at Bradford (90); the church has many good parts, though we think the west entrance squat and poor, and we object to the continuous line of roofing over nave and aisles; the secular buildings are not remarkable.

No. 91 is an anastatic sketch of a new Church at Avon-Dassett, in Mr. Buckeridge's usual style; his Design for the Chapel of the Anglican Convent (153) at Oxford is very good, and one of the best we have seen of Mr. Buckeridge's works.

We almost think we ought to congratulate Messrs. Blackmoor and Withers that their designs for Baptist Chapel (92 and 95) and for St. Mark's Church (101 and 102) at Sheffield were unsuccessful.

Mr. Chancellor sends three admirable sketches for Staircases to Country Houses (93), carefully studied and worked out in different coloured woods, the effect of which would be good and pleasing; we cannot speak too well of the drawing, and wish we could have seen more such details on the walls of the Exhibition. In 98, 98, 99, 100, and 103, we have three unsuccessful designs for a New Church at Slough. 96 and 103, by Mr. W. Fowler, are very effective pen-and-ink drawings, to which the referee awarded the first place; which the committee, however, reversed—to their shame. The east end is well treated, and the triple lancet windows would come out well in perspective; the angle pinnacles of the tower are poor in the extreme. There is much to praise in this design, and little to complain of, except perhaps the too minster-like character of the eastern buttresses. Mr. Conybeare's design (98) is more pretentious than good; the design 99 and 100, by Messrs. Seddon and Spiers, has many good qualities in the interior; we are, however, at a loss to conceive how Mr. Seddon could possibly have combined with a gentleman whose architectural proclivities are notoriously at variance with his own. The tower and spire out-Seddons even Mr. Seddon; the north and south porches would be useful, and form good features in the western view: we do not like the treatment of the cloretery, which is almost a reproduction of Mr. Seddon's church at Chigwell, and the composition of the nave roof with the central arches is unhappy. 104 shows another drawing by Mr. Fowler for a church at Lincoln, simpler in treatment, and decidedly better than his other designs.

We would desire to accord all praise to Mr. Thomas Goodman for his careful pencil-drawing (108) of the Porch, South Benfleet Church, Essex, in which the construction is well shown. We recommend the study of this drawing to all architectural students. Messrs. Innocent and Brown contribute their successful design (110) for new Baptist Chapel at Sheffield, which, if anything, seems more pretentious than those we have named, although there are parts to be praised. Mr. Chancellor, in his drawing (111), shows two cleverly-tinted elevations of proposed alterations to Stoke Collage, Suffolk, carefully treated in red brick, and great improvements on the old façades shown in the same drawing: the tower is unworthy of the rest of the work, nor do we like the sham dormers or conservatory.

Mr. Waterhouse sends a perspective view of the Manchester New Town Hall (117). This building has been before criticised; the drawing to which the hanging committee have given the place of honour at the head of the room is a fine example of effective tinting, and shows well the main masses of the building. There are portions of it which, when examined in detail, seem open to revision, and we hope Mr. Waterhouse will make one or two alterations in carrying out the work, especially the dormers, the squat entrance doorway, the statues stuck against the wall, the weak turrets of the central gable, and the end masses. If the present drawing is thoroughly accurate in detail, we trust also he will improve the treatment of the imposts of the second-floor windows, which otherwise are the best feature in the design. His other drawing (127) of New Mansion at Easeney Park is less successful in drawing and in colouring, and the general grouping less effective than Mr. Waterhouse's massing of his work usually is.

The two pale and apparently working drawings of the proposed new Church of St. Peter, at Clerkenwell (139), by Mr. E. L. Blackburne, would have been very good, except that here and there Mr. Blackburne has descended to weak tricks for effect.

Last, but not least, among the Gothic drawings we must notice Mr. John O. Scott's wonderfully got-up interiors of his competition design for the Great Hall (167) and Council Chamber (168) of the proposed Manchester Town Hall. Splendid in drawing, and vivid and attractive in colouring, we fear they rather tend to mislead the general public, who are so disposed to look upon the glory of the drawing, rather than the purely architectural merits of what the drawing is really, or rather should be, a symbol of. There are many points that we cannot like about the designs, but they were fully discussed and criticised at the time of the exhibition at Manchester, and we therefore now prefer to leave them with a word of praise

for the way in which the drawings have been got up. With these two drawings we have finished the Gothic portion of the Exhibition as expressed by drawings. The other side, together with the photographs, we leave for a further notice.

### THE OASTLER MONUMENT AT BRADFORD.

THE monument raised by public subscription to the memory of the late Mr. Richard Oastler, designated in his lifetime 'The Factory King,' was inaugurated at Bradford a few days since, by the Earl of Shaftesbury. The memorial was the result of a subscription throughout the manufacturing districts, chiefly of the West Riding of Yorkshire; and the circumstance that Bradford had been the centre of the Ten Hours' Bill movement, and that a larger amount of subscriptions had been raised there than anywhere else towards the erection of the monument, induced the subscribers to settle upon that town as the site. Designs were invited, and that of Mr. J. Birnie Philip, of London, was selected, the cost of the statue to be 1,000*l.* The casting was entrusted to Messrs. H. Prince & Co., Southwark, London. The statue represents Mr. Oastler in the act of making an appeal on behalf of the factory children, two of whom are grouped at his side. The weight of the body is sustained by the left foot, which is firmly planted on the ground, while the right leg is thrown backward and rests on the toes of the foot. The right arm crosses in front of the body, the hand extended towards the children, while the left arm partly encircles them. The boy is looking down in modest attitude, while the girl clings to her youthful companion, but looks up to him who is their protector and advocate. The group is of bronze, and is placed on a pedestal of polished red and grey granite. The enrichment of the cornice is incised and gilt, as also the inscription, which runs as follows:—'OASTLER, born at Leeds, December 20, 1789; died at Harrogate, August 22, 1861.' The figure of Mr. Oastler is dressed in an ordinary frock coat, with trousers and gaiters covering the boots. The likeness is considered good. The factory children are attired—the boy in corduroys and smock, the girl in a striped dress, with pinafore in front, and both wear Yorkshire clogs. The total weight of the bronze is upwards of three tons. The pedestal came from the works of Messrs. D. H. & J. Newall, Dalbeattie. There are two steps of grey granite. The outside dimensions of the first step are twelve feet on each side, and its height is one foot. It is composed of six pieces. The second step is seven feet eight inches square, and fifteen inches high, and is composed of four pieces. Next comes a third block of grey granite, one foot eleven inches thick, and five feet seven inches square. A moulded plinth, twenty inches thick and five feet two inches square, follows. The die, or pedestal proper, is four feet high, and four feet six inches square. The next course consists of one foot five inches of red granite, five feet four inches square, which forms the cornice. This is surmounted by a course of grey granite, eleven inches thick, and four feet eight inches square. On this is placed the bronze group, the base of which is four feet square. The height of the principal figure is ten feet six inches, of the boy six feet six inches, and of the girl five feet six inches. The total height of the monument from the ground is twenty-two feet seven inches, and the weight about thirty tons. The work of erection has been carried out by Messrs. J. & W. Beanland, builders, of Bradford. The total cost of the monument is about 1,500*l.* The site selected is an open piece of ground near the Midland Railway Station, in a central part of the town.

### MIDDLESEX HOSPITAL HOME FOR NURSING.

THE project of erecting proper buildings for the accommodation of nurses, in connection with the Middlesex Hospital, having been carried into effect, the ceremony of opening them took place on the 15th instant, by Her Royal Highness the Princess Mary Adelaide of Teck. Service having been performed, the distinguished visitors were shown over the new building; the Regent, Clayton, Cambridge, Founder, and Percy wards being subsequently visited. Mr. Wyatt, the architect of the new building, was afterwards introduced to the Princess. The Home for Nursing is five storeys high, and constructed so as to afford accommodation for upwards of fifty nurses. A separate apartment, comfortably furnished, is allotted to each, and in addition four isolated rooms are set apart as hospital wards for nurses suffering from serious illness. A handsome refectory, 60 feet in length, forms an interesting feature in the building, with its kitchen, scullery, &c., attached. On each floor of the Home, above the basement, a bath-room, with every convenience, is provided.

### THE AMSTERDAM EXHIBITION.

THE Sub-Committee met on Monday, the 10th inst., at the house of the Society of Arts, to consider the question of applications for space from intending exhibitors. As these have now become very numerous, and the principal British trades and industries are likely to be well represented by important houses, the Committee have felt warranted in applying for an extension of space, which has been granted by the Central Committee at the Hague. The municipal authorities of Amsterdam have also placed at the disposal of the Exhibition Committee a square in front of the Palace, where booths or stalls will be erected for those desirous of effecting sales, which cannot be carried on in the building. This affords an opportunity of exhibiting and obtaining orders for many kinds of articles not coming strictly within the scope of the Exhibition. Parties desirous of renting these stalls or booths, which are sixteen yards square, should make immediate application to Mr. P. L. Simmonds, the London Secretary, 3, Castle Street, Holborn.

Every arrangement has been made by the Mansion House Committee and the various consuls, &c., for the Netherlands at the shipping ports to facilitate transport, reduce expense, and relieve British exhibitors from all trouble. A fund has been set on foot to defray the contingent expenses of publicity, printing, correspondence, &c.

## BISHOPSNYMPTON PARISH CHURCH.

THE parish church of Bishopsnympton, near Exeter, was re-opened on Ascension Day, after considerable works of restoration. The work was commenced in July last, and the outlay has amounted to more than 1,300*l*. The chancel has had a ceiling removed and the roof for the most part renewed, the old principals and arched braces doing duty with good effect in an open boarded roof. A new reredos of Bath stone has been erected at the east end; and a new two-light stained glass window from Messrs. Beer's establishment has been erected to the memory of the late Rev. Canon Heberden. The south aisle has had its cradle roof uncovered, repaired throughout and re-slatted, and carved bosses fixed at the intersections of the ribs. Three new Bath stone windows have been put in, and the west wall is re-built. The nave roof, a cradle plastered between the ribs, has been adorned with carved bosses. The church has been re-seated throughout with red deal open seats, the bench ends and fronts having tracery. The plastering has been removed from the walls, and the whole interior exhibits the stone, having neatly pointed joints. Two old windows on the north side have been repaired and reglazed. The floors of the avenues are laid with Haywood's black and red tiles. The font, a Norman one, has been restored by supplying four shafts in Purbeck stone. The tower of the church, which is a very tall and imposing structure, requires much repair, which has yet to be undertaken. The Rev. J. Thorne, the rector, has been the chief promoter of the work, aided by contributions of friends, the Bishop of Exeter giving to the amount of 500*l*.

The work has been carried out, under the superintendence of Mr. Ashworth, architect, of Exeter, by Mr. Cock, of Southmolton, builder, the Bath stone work by Mr. Gould, of Barnstaple, the carving of the reredos by Mr. Hems, and wood carving by Mr. Seadell, both of Exeter.

## ST. OLAVE'S CHURCH, MARYGATE, YORK.

THIS church, which had been closed for three weeks for repairing and partial decoration, was opened for divine service on Sunday the 9th inst. Hitherto the decorations in the church had been of a temporary character, but it having been determined by the rector and churchwardens that something in the way of permanent embellishment should be accomplished, a design was prepared by Mr. J. W. Knowles, mural decorator, by whom the work has been successfully carried out. Around the east window two borders have been painted, one on the face of the wall, and the other in a deep hollow which runs around the outer edge of the window. The former is composed of leaves and flowers alternately, buff and gold, on a sage green ground, and the latter is of a pointed design, having one side brown and the reverse buff for a ground, and on which the pattern is red and grey. The wall space on each side of the window, as high as the cusplings of the lights, is covered with a quatrefoil diaper of sage green, filled in with foliated crosses in red, and six pointed stars in gold. Across the top of this diaper work is a crested border of buff and gold on a deep red ground, and at the base a foliated one in buff and brown on a gold ground. The portion of the wall above this diaper is powdered with roses in red, and on it two ribbons illuminated with the text, 'Holy, holy, holy, Lord God of Hosts, heaven and earth are full of Thy glory.' Under the reredos is a rich diaper composed of lozenges of scarlet on a green ground, each lozenge being alternately covered with gold and pink *fleur-de-lis*, and the cresting at the top of the reredos is picked out in gold.

The wall all round the church is painted six feet high of a dull red, with an ornamental border, and the top edge of green leaves, divided at intervals by gold Maltese crosses and grey flowers. One side of a pillar (the rest of which are at present painted stone colour) has been decorated, and it has been proposed to extend this additional embellishment to the whole of the pillars at a future time.

## GAS AND WATER.

WIDNES.

THE gas supplied to the consumers at Widnes is said to be of inferior quality and high in price. At Blackburn the price is 3*s*. 9*d*. to 4*s*. for 20-candle gas; Nottingham, 3*s*. 2*d*., 18-candle gas; Rochdale, 3*s*. 3*d*. to 4*s*., for 20-candle gas; Walsall, 2*s*. 4*d*., 14-candle gas; Salford, 3*s*. 4*d*., 20-candle gas; Stockport, 3*s*., 20-candle gas; Warrington, 3*s*. 4*d*., 20-candle gas; Lancaster, 4*s*., 21-candle gas; Southport, 4*s*., 21-candle gas; Preston, 3*s*. 4*d*., 18-candle gas; Wigan, 3*s*. 4*d*., less 10 per cent.

It is suggested, before the Local Board proceed to expend further capital on their gas works, that the present capacity of their works shall be ascertained.

LONDON WATER.

The report of Professor Frankland, of the Royal College of Chemistry, shows that the water supplied to London, tested by samples drawn in April, ranged from 28.4 tons of solid impurity in the New River water to 42 tons in 100,000 of the supply of the Kent Company. In Bristol, samples drawn in February showed 28.66 tons of solid impurity in 100,000 tons supplied by the Bristol Waterworks Company; and in the supply furnished at All Saints Lane no less than 127.28 tons. At Manchester, sample taken in June, there were only 6.2 tons of solid impurity; at Lancaster, in November, only 4.58 tons; Preston, in August, 12.44 tons; Newcastle, in September, 23.40 tons; Glasgow, in July, Loch Katrine water, only 3 tons; Edinburgh, in September, the Crawley Burn, the Swanston, and the Colinton water, ranging from 11.28 to 14.10 tons; the Coniston water, 22.58 tons; Dublin, the Vartny water, brought from a distance of thirty miles, only 6.34 tons; Cartan's pump water, from the most used of the Dublin wells, 81.62 tons. It will thus be observed that water supplied to Lancaster, Manchester, and Glasgow, is of much greater purity than any that can be had in London.

Mr. Page's paper, to be read before the Society for the Encouragement of the Fine Arts, is postponed to June 10. The subject touches upon the relations between engineering and architecture.

## PROPOSED NEW ROADS NEAR TRURO.

THE Truro and Redruth Turnpike Trust held a meeting lately, at which a proposal was discussed for the construction of two new roads in the neighbourhood of Truro. The first proposal is of importance, because the road would open up a new route for communication between Truro and Perranporth and throw open the extensive traffic with the Chiverton mining district, avoiding altogether the steep and dangerous hill at Kenwyn. The road suggested would commence at the end of the New Road, near St. George's Church, and pass by Bosvigo Bridge and New Mills, ending on the Perranporth Road, beyond Shortlanes End. To make the project complete, the road ought to be continued on to Perranporth, through the Calestick Valley, right through the Chiverton district. The other road suggested is from Malpas to St. Clement's, by the water side, to join the road constructed by the late Mr. Vivian, from St. Clement's to Kiggan Bridge, near Tresillian. It would cost about 800*l*. It is necessary, however, that the Trust should obtain a new Act of Parliament to enable it to effect the desired improvements.

## ILLUSTRATIONS.

PICTURE FRAMES AT THE ROYAL ACADEMY.  
(FIRST NOTICE.)

THE commonplace expression, 'What a beautiful frame!' often resorted to by those who feel themselves incapable of appreciating the beauties of a picture, is nevertheless a pertinent remark on a very important though apparently secondary feature. The chief object of a frame is to enclose a painting, to give force and brilliancy to its colours, and to isolate it from all surrounding objects; and although it would probably be the case that those persons who contented themselves with admiring a frame, when asked to criticise a picture, would also be unable to distinguish between good or bad taste in its frame, there are still many occasions when, looking at a picture as a whole, we become aware of something wanting in the frame.

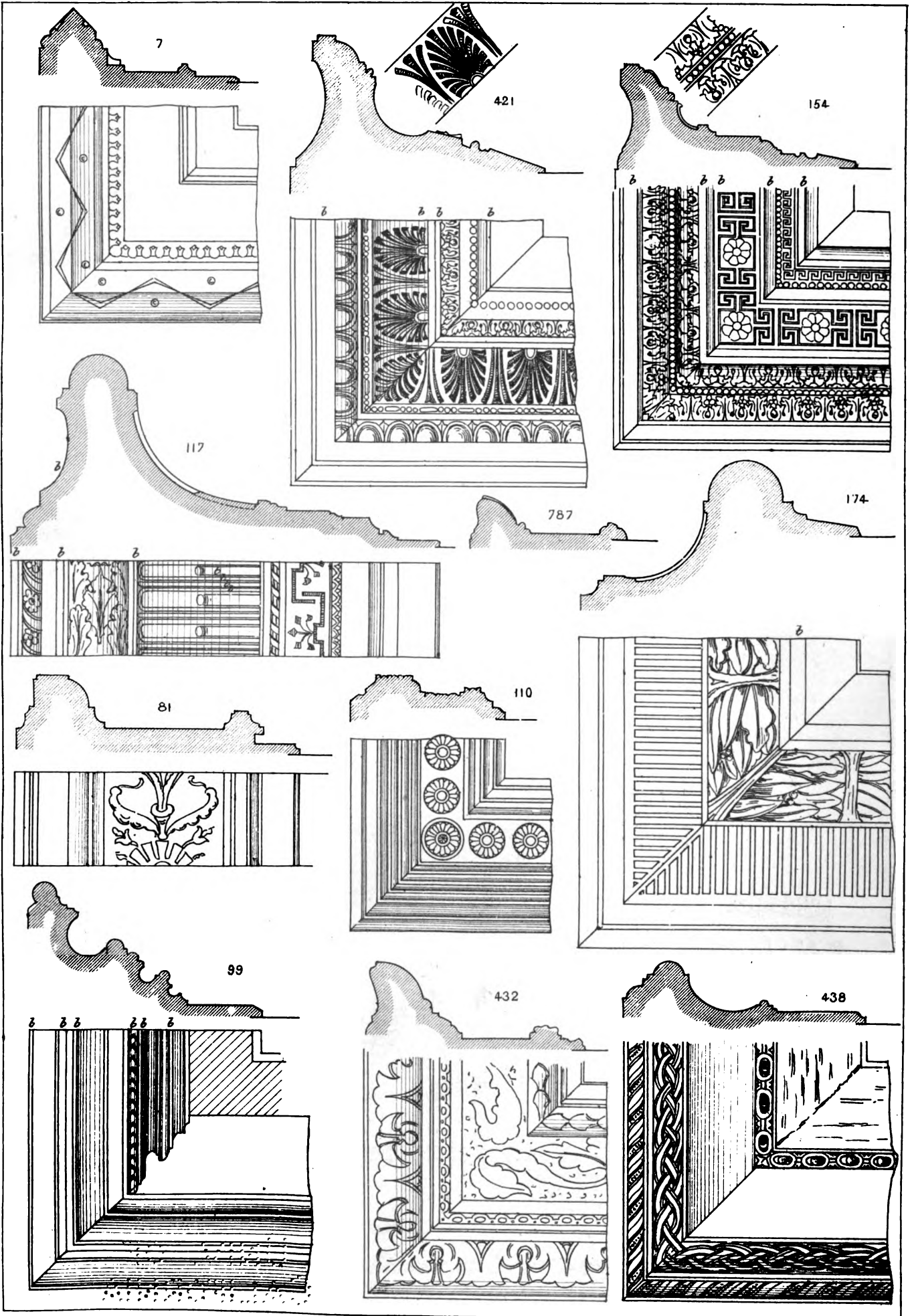
The opening of the new Royal Academy Exhibition seems to shadow forth, as it were, a new artistic era in England; and in the great transition now taking place in art, it is not unreasonable to suppose that all accessories must necessarily follow the onward march of progress. We have looked forward, therefore, to this Exhibition, and not without reason, for some slight improvement in the design of picture frames; and we have this year the additional opportunity of comparing notes between English frames and those of our Continental neighbours. Strange to say, in many points we seem to have changed characters with them. A certain amount of elegance, but with too great decoration of detail, will be found to exist as the essence of modern French architecture. Expression and vigour we assert as our own. In the comparison of the English and foreign frames, however, we shall find, with certain exceptions, that the latter qualities exist throughout the foreign frames, whilst the former qualities are distinguishable in the greater number of our own. If we may judge from the examples before us in this Exhibition, there seems to have been little progress made in the design of foreign frames during the last fifty years; they all belong to the 'style de l'Empire,' and in their main form resemble the style of frame which prevailed in England at the beginning of this century, enriched, indeed, with a bold and vigorous ornament, rendered more effective by the burnishing of certain portions of the gilding. In England, with few exceptions, we have abandoned the 'style de l'Empire' frame, and we have fortunately almost got rid of the heavy traditional frame with its ogee moulding, covered with sprawling natural foliage or with Louis XIV. ornament; in fact, these frames are only to be found accompanying the works of those who seem to have also lost all sense of the progress of art in their pictures. In their place, however (with the exception of certain noticeable examples to which we shall, by the assistance of drawings, call attention presently), a style of frame has sprung up, evidently the work of framemakers alone, and calculated to give the greatest amount of detailed ornament with the least amount of design or effect. This style of frame is named, we believe, the arabesque; the mouldings vary in form, and are almost entirely covered with a flat unmeaning ornament, called arabesque, but which really belongs to no style. At a little distance, in fact at such a distance as the picture would have to be looked at, it is impossible distinctly to see the ornament, which in fact only serves to break up what would otherwise be an agreeable and subdued surface; so that the chief object of the frame is done away with altogether. The design of these frames, as well as their execution, rests entirely with the framemakers and gilders. There are, fortunately, a few painters, and Mr. Leighton notably amongst them, who have long recognised the fact that their powers of imagination and composition ought not to terminate with their canvas, any more than an architectural design should be complete in itself without any reference to the buildings or features which immediately surround it: it is especially to these, therefore, that we purpose drawing the attention of our readers. Our drawings made from actual measurements are all to the scale of  $\frac{1}{4}$  full size, and though far from complete, give specimens of the more remarkable frames in the Exhibition.

If we refer to any frames of which we have given no drawing, it will be either that they resemble others, or that there is no immediate necessity for their representation. Commencing with the first room, and taking the pictures as far as possible in their order, we have (No. 7) Mr. Storey's picture in a frame which is to be recommended more for its simplicity and perfect keeping with the picture, than for its mouldings. The outer bead set on edge is very objectionable in form, and it is difficult to understand why it should not have been set square with the rest of the frame. No. 27 (by the same painter) we find in a similar frame, with a slight punctured ornament in the surrounding panel, which, while giving additional richness to the frame, does not detract from the general effect. Comparing these frames with No. 62, also by Mr. Storey, we shall be able to see what a mistake he has made by the introduction of so much exuberant ornament.



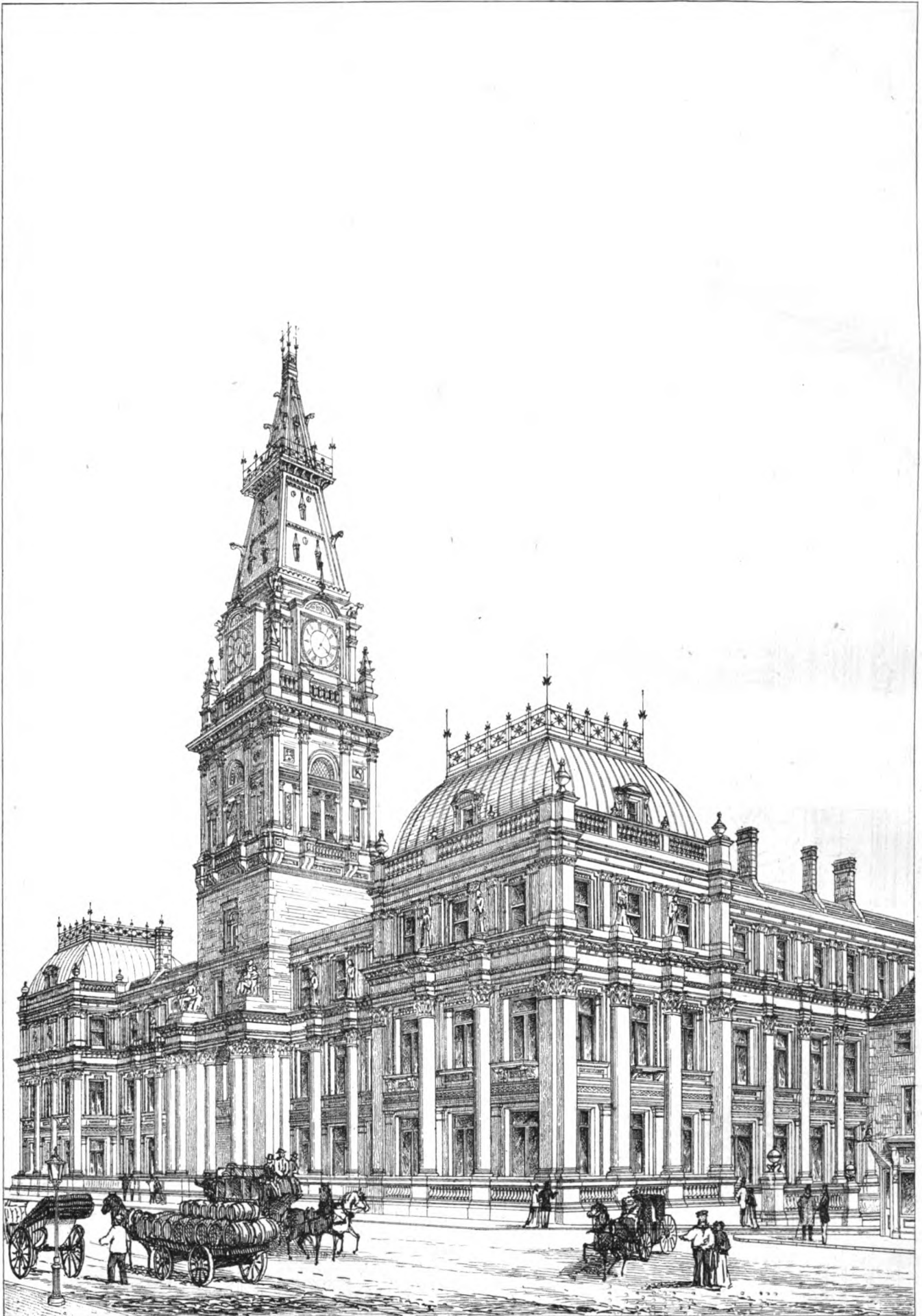
UNIV. OF  
CALIFORNIA

ROYAL ACADEMY FRAMES 1869 . N<sup>o</sup> 1.  
SCALE  $\frac{1}{4}$  FULL SIZE.



LETTERS. b. b indicate parts which are furnished

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NEW MUNICIPAL OFFICES : LIVERPOOL.

M<sup>r</sup> ROBSON ARCHITECT.



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without a broad internal margin to separate it from the quiet tones of the picture. Mr. Calthrop (No. 38) has adopted a frame which, while good in many respects, would have harmonised better with the subject of his picture if the *renaissance arabesque* around had been less gay.

In No. 60, Mr. Marcus Stone has endeavoured, with a great want of success, to combine two essentially different styles of frame. He has next his picture a broad margin of wainscot with the grain showing through the gilding, and a series of plaster mouldings with framemaker's ornament to serve as a border to it. With such a margin of gilded wainscot a bolder ornament, carved in the same material as in Messrs. Prinsep's or Wynfield's frames in the same room, or Mr. Yeames's (No. 432), would have been more in keeping, though neither would have accorded with the style of the picture.

No. 84 is a new style of frame, which would be good except for the exceeding heaviness of the angles; it would have been better if the border bead had continued straight round, and if the corner ornament had been smaller.

In Mr. Poynter's picture (No. 110) we have a frame designed by the painter, which agrees well with the subject and treatment of the painting. It is perhaps a little too small, and the difference made in the corner pateræ is too slight to be of much value; the close juxtaposition of these pateræ also suggests a running border, and therefore they ought not to have been emphasised at the corners.

No. 117 is the first foreign frame of importance, and there is no picture in the whole Exhibition which derives more effect from its frame than this one does. Compare it with that employed by Mr. Solomon in No. 787, and we shall be able to see wherein lies the value of a frame. Although there is more colour in Mr. Solomon's picture than in Mr. Merle's, the former looks poor and weak; and the difference of effect between the two, mainly caused by the employment of a large and small frame, is surprising. Mr. Merle's frame is one of those we put down as belonging to the 'style de l'Empire,' the only difference being the employment of a semicircular enriched bead, instead of a flat one, as outer border. The ornament is bold and vigorous, in fact almost too much so for the careful elaborate painting, but its scale, as well as the size of the frame, agrees with the scale of the figures, which fill up the whole picture. A frame like Mr. Solomon's ought only to have been employed for a picture when the figures were a quarter of their size.

Mr. Millais' marvellous portrait of Miss Lehmann (No. 127) is enclosed in a frame belonging to a different style, which we may assume is Italian. The inner border of the frame is scarcely large enough to carry the large pierced ornament round, nor is it wide enough for the size of the picture.

In No. 154 we have the first specimen of a Belgian frame, in style somewhat similar to those of the French school. Although this form of frame encloses its picture better than others, it is not altogether pleasing; the ornament, however, is the best of its kind, and in style it forms part of the picture, and adds to its beauty. We here note the employment of burnishing, to emphasise certain parts of the ornament. It is very essential that, when any part of a frame is burnished, this treatment should be carried into the ornament, or else the dark reflections which burnishing gives divide the mouldings into vertical and horizontal lines, and the ornament seems cramped between them. In Mr. Marcus Stone's picture we noticed that the burnished line divides in half the two portions of his frame, and in certain lights it seems as if there were a hollow space between the two parts, and the inner frame had either shrunk or been made too small for the outer part. It is curious also to note that in England burnishing seems never resorted to, except in the case of lines, whereas in most of the foreign frames the ornament is entirely represented and brought out by this treatment. No. 421 is another of M. Tadema's frames, in which the same style is employed. The cavetto moulding is, perhaps, too large for the size of the picture and its figures, and the mouldings are not so successfully grouped as in 154; but the ornament is good of its kind, and shows a careful attention to the style of the picture.

The mouldings and general effect of Mr. Richmond's frames (Nos. 81, 168, 302, &c.) are so good that we should be inclined to suppose, at first, they were designed by himself, were it not that we find the same debased ornament in the panels of all his frames. We fear, therefore, that his framemaker is responsible for them; for it is scarcely possible to imagine that Mr. Richmond could have so slight a knowledge of ornament as to have designed, or given directions for the imposition of, the wretched grotesque figures sitting at the corners of all his frames. It is strange also that Mr. Richmond's clients, who are chiefly clergymen, should be content to sit in close contact with such vile demons as these, except they be the representatives of devils already cast out, who are hiding themselves in the inmost recesses of the frame panels.

Mr. Richmond, jun., has in No. 277 a poorly-designed frame, which has an absolute need of pateræ, or some ornament, to break up and relieve the long monotonous panel round his picture.

Mr. Leslie's frames are among the least happy in the Exhibition. The frosted surface has a coarse and vulgar appearance, which detracts from the quiet and beautiful tones of his painting. In the picture of 'Celia's Arbour' (133) he has departed from the usual rule, by making the upper part of his frame wider than the rest. If this was done to admit of the sprawling and badly-designed foliage which is now stuck on, the result was certainly not worthy of its object. One of the chief faults of his frames, as well also of those of Messrs. Yeames, Wynfield, and Prinsep, is that the main portions of them, viz., the panel round, is almost on the same plane as the picture itself. Compare them with the foreign frames—M. Merle's or M. Tadema's—and the value of setting back the pictures will easily be recognised.

M. Portaël's frame (174), which we assume is French, and is now rather old and tarnished, is different in design from those we have already spoken of, and would look better if more isolated from other pictures. We would call attention to this frame for the delicate and artistic modelling of the principal bead, in which the influence of Greek art is evident more than in any other picture frame in the Exhibition, excepting in those of Mr. Leighton.

Mr. Yeames' frame (432) is vigorous and bold. The picture would have gained had a broader margin of plain gold been given, and, as we have be-

fore noticed, a deeper set back; but the ornament can be well seen at a little distance, and belongs to the style of the period which Mr. Yeames chooses to represent.

Mr. Sandys' frame (99) is one of the most original in the Exhibition. The simple Gothic mouldings and their good contour accord with the style of painting. The absence of any ornament is extremely judicious, and tends to increase the value of the small figures and emblems in which the picture abounds. The splayed surface at the bottom, which in any other style of picture would have been objectionable, because of the too great glare of reflected light from it, here, by its contrast, gives a gloom and solemnity to the mysterious incantations represented. The black panel round also brings out in better relief the gold background of the figure. If we have a fault to find with any part of the frame, it is with the burnished bead, which looks rather common and out of place.

Mr. Calthrop, in his 'Andromeda' (247), has employed a similar style of frame; but the mouldings are clumsy and badly grouped; the frame is much too large and heavy. The black margin round the picture is objectionable, and the whole entirely out of keeping with the picture.

Mr. Elmore's picture (No. 164) has a frame which, in its *ensemble* and style, is so good that we cannot but regret that its execution was not entrusted to some one who knew more about the Elizabethan style of which it partakes. The lines of the design are right, but all the ornament, which ought to have been in bold relief, has been flattened down, as if it had been subjected to a great heat, and partially melted.

In No. 162 we have another frame whose general effect is good, or at least in harmony with the subject; but which fails in its mouldings and the painted decoration on its surface. The intention is visible, but the design and execution are defective.

#### THE MUNICIPAL OFFICES, LIVERPOOL.

THE Municipal Government of Liverpool has arrived at its present condition, power, and comprehensiveness, by slow degrees and through the growth of years. Some forty years ago, three (indeed four) separate bodies were in existence which now are united in one. The first was the ancient Corporation of Liverpool, which managed its large landed estate, disbursed its payments, and voted monies for town improvements, public charities, and other objects. A second was the Highway Board, on which devolved the care, proper repair, and maintenance of all public streets, causeways, and sewers, and which derived its funds from rates levied on the inhabitants. The third consisted of two Water Companies, on the joint stock principle, which endeavoured to pay a reasonable dividend by supplying the rapidly increasing borough with pure water.

These three (or four) bodies are now, for good or for evil, merged in the great corporation known as the Council of the Borough of Liverpool.

The Gas Companies have, in their turn, amalgamated, and, in consequence, been restrained within certain legislative enactments in the public interest. But, as the Council have not, as in some other towns, acquired any control over this department, we are not at present concerned with it.

For some years after the merging of the various public bodies (except the Gas Company) in the Council, the different departments continued to occupy their old offices, situated in different and distant parts of the town, until the great inconvenience, growing year by year in proportion to the increase of public business, compelled the centralization of the buildings also.

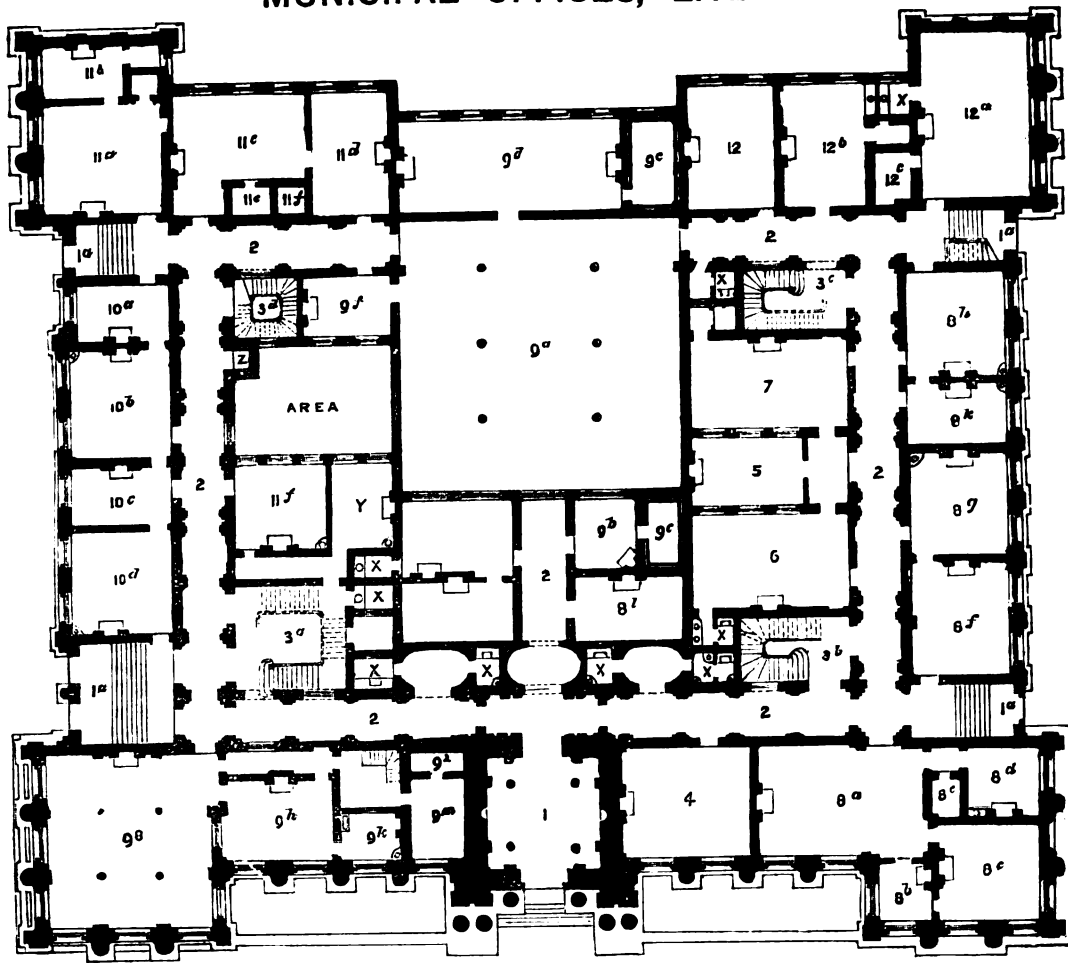
The result has been the erection of the Municipal Offices.

The new building has frontages to three streets 60 feet wide, and a reserve of land to a fourth street of equal width, on which, at some future time, it is not impossible that a new council chamber (not included in the arrangements of the present building) and other buildings may be constructed. Its general arrangement, as may be seen by the accompanying plans, is that of a quadrangle of some 4,800 square yards, with domed pavilions at the four corners, and a tower about 210 feet high, rising out of the north front. A wide corridor runs round the building on each floor, and in each of the four internal angles are placed, in direct communication with four main entrances, stone staircases having hydrants (in case of fire) on each landing. The offices on the ground and first floors are considered to be of equal value, and are so treated architecturally, the corridors being groined in brick and plaster, and, together with the staircases, lined with a rich tile dado, while the whole of the joiners' work, such as doors, skirtings, and window-linings, is of wainscot oak.

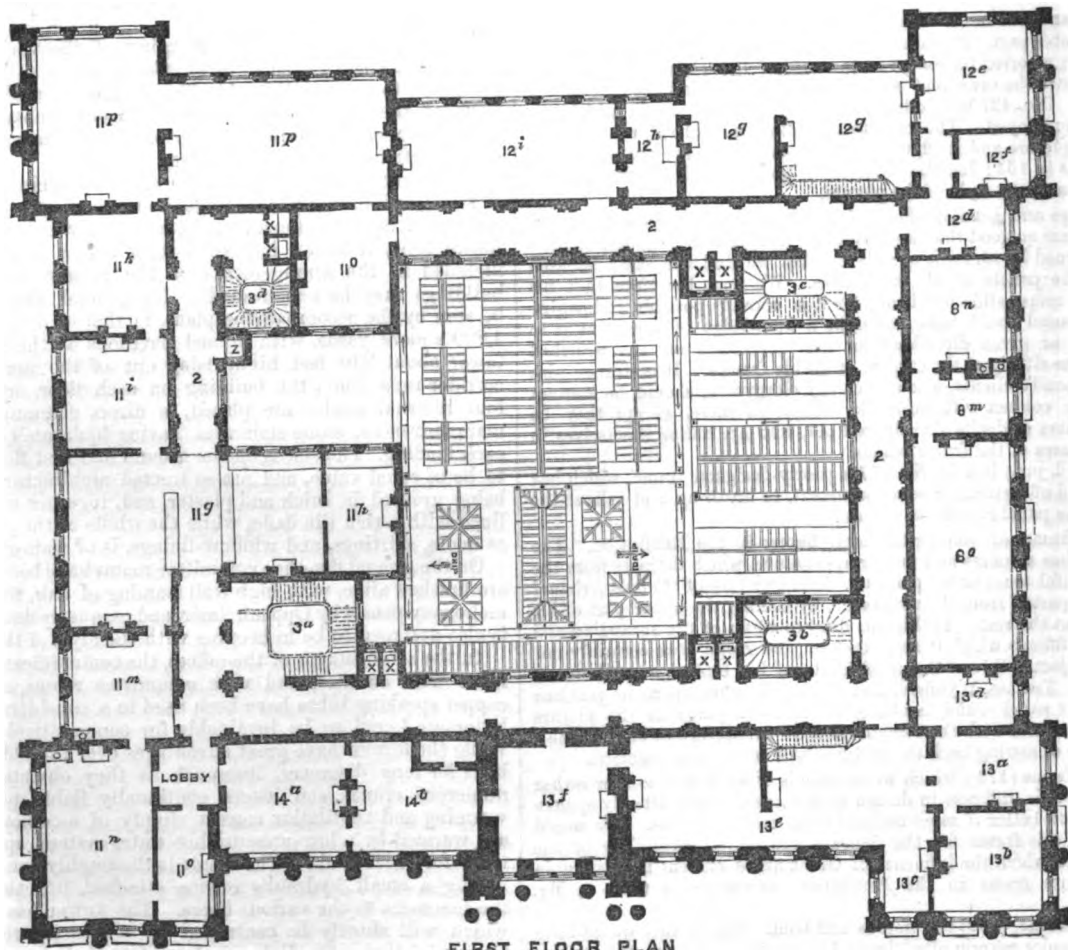
On the ground floor five committee rooms have been arranged. These are finished alike, with high wall framing of oak, filled in with inlaid mahogany panels by Oppenheimer, and parquet floors. The furniture is also designed to be in keeping with the style of the rooms.

In the arrangement of the offices, the communication of one department with another, and with committee rooms, electric bells and copper speaking tubes have been used to a considerable extent. The latter are found to be invaluable for comparatively short distances, while the former have great advantages over the old-fashioned sort of bells for long distances, inasmuch as they obviate the necessity of numerous cranks and levers continually liable to disorder. The warming and ventilation consist simply of a copious supply of fresh air, warmed by a low-pressure hot-water system, open fires and apertures for vitiated air. The result is thoroughly successful. A hoist, having a small hydraulic engine attached, lifts the coals, &c., from the basement to the various floors. The tower has a powerful clock, which will shortly be controlled by electricity to ensure accurate Greenwich time; the dials are eleven feet in diameter, and the chimes

MUNICIPAL OFFICES, LIVERPOOL.



GROUND PLAN



FIRST FLOOR PLAN

SCALE OF FEET



are modelled (like those of Westminster) on the bells of St. Mary's, Cambridge; the hour bell only weighs two tons, whereas it ought to have been six for such a town as Liverpool; this defect, however, can be remedied at any time, the clock being sufficiently powerful to lift the hammer for a much heavier bell.

Externally, the building is of a massive columnar sort, formed of large blocks of clean hewn stone. Its architecture, though in some degree founded on the Corinthian type, is so independently treated that the name of no ancient style can be properly applied to it. To take a single instance, it may be mentioned that the large capitals of the principal order are nearly all modelled from English ferns instead of the exotic acanthus. The sculpture is the work of Mr. Earp, of London, who has succeeded much better in the fern-leaved capitals than in the symbolical figures of the attic story. The successful application of high-class figure sculpture, at moderate cost, forms one of the great difficulties of architects of the present day.

Some criticism has been excited by the treatment of the tower, terminating, as it does, with a square and galleried spire having corniced crockets for skyline, as forming the chief feature of such a building. The treatment may be open to criticism: but the first necessary element in the composition was undoubtedly *height*; the second, *outline*; and neither of these essentials have been wholly missed. Further, it was important that the entire result should be that of a *municipal tower*. The total cost of the land, building, furniture, and fittings, amounts to about 160,000.

The building has the singularity (in these days of rapid building) of having been planned and commenced by one architect, and carried out and completed by another. And it bears marks of the handiwork of both. As a whole it does not pretend to any great or high-art qualities, but simply to be a set of public offices of solid, durable, and convenient kind, suitable to such a town as Liverpool.

Now that the various departments are all concentrated in the new building, the use of the Town Hall must of necessity be defined. If left standing, it can hardly be used except for the purposes of the Mayor and the Council. It is a fine building by Wyatt, some eighty years old, and is well worthy of preservation, irrespective of its strong local prestige.

EDWARD ROBERT ROBSON.

#### REFERENCE TO PLANS.

(GROUND PLAN AND FIRST-FLOOR PLAN TAKEN TOGETHER.)

1, Entrance Hall.	10a to 10d, Medical Officer of Health's Department.
1a, Additional Entrances.	11a to 11p, Borough Engineer's Department.
2, Corridors.	12a to 12i, Water Department.
3, Staircases.	13a to 13f, Architect and Surveyor's Department.
4, Finance Committee Room.	14a, 14b, Unoccupied Rooms.
5, General Waiting Room.	X, X, Conveniences.
6, Watch Committee Room.	Y, Messenger.
7, Health Committee Room.	
8a to 8o, Town Clerk's Department.	
8a to 8m, Treasurer's Department.	

### HOUSE-RAISING IN CHICAGO.

THE idea of raising an existing structure gradually by means of screw-jacks, and sufficiently high to enable the proprietor to gain an additional storey *under* instead of *over* his house, is by no means a new one, and has occasionally been attempted with success both in this and in other countries. But nowhere, perhaps, has this method been carried out in such a wholesale manner as within the last year at Chicago in the United States, and in order to understand the reasons which induced the inhabitants of that city to employ such means of adding to the accommodation of their houses, it will be necessary to say a few words about the city itself.

Chicago is situated at the junction of a small river of the same name with Lake Michigan, and consisted, soon after it was first founded in 1830, of only seventy inhabitants. The number, however, rose in ten years to 4,853, and in 1845 to 12,088. In 1850 we find its inhabitants numbering 29,963; in 1860, 110,973; in 1865, 178,900; and last year (1867), no less than 230,000. To discuss the causes of this unprecedented increase in the population of a single town, would be beyond the objects of this journal; suffice it to say that to the favourable position of the new settlement its rapid development is chiefly due. A canal, begun in 1836 and finished in 1848, connects Chicago with the Illinois river, thus establishing water communication between the Mississippi and Missouri. The first railway from Chicago was opened in 1850 as far as Elgin; now a network of railway systems, some 5,000 miles in total length, connects that city with the whole state of Illinois, with sixteen great commercial towns on the Mississippi and Missouri, with the prairies of Iowa, Wisconsin, Minnesota, and Missouri, with the cities on the Atlantic by no less than three different routes, and, lastly, with the mines on Lake Superior. The trade of the place consists chiefly in corn and cattle. In 1838 the export of corn was represented by the modest figure of seventy-eight bushels; in 1864—the year of the civil war—it rose to forty-seven million bushels. About a thousand head of cattle pass through Chicago daily on their way from west to east, and in the three winter months a million pigs are annually salted and sent away. Indeed, one new quarter of the city, finished last year at a cost of two millions of dollars, is entirely devoted to the reception of animals, and contains stabling and sheds for 20,000 head of cattle, 75,000 pigs, and 20,000 sheep, besides the 'Houghhaus,' which is the caravanserai for cattle-dealers (with 200 beds), a bank, telegraph office, &c. The chief street in this cattle quarter is named after the Broadway in New York, and is a mile long, by a breadth of 75 feet.

The valley of the Michigan is at a high level compared with the country around, and hence the spot which the first settlers selected for their new town was, for sanitary reasons at least, ill adapted for the requirements of a large town. But the American is, as a rule, indifferent to sanitary arrangements, and thinks it time enough to mend matters

when such considerations really become of vital importance, trusting to his national 'cuteness' to help him out of the difficulty. And so it was in this instance. The first great step was to raise and pave the streets. This was done; the streets were raised 4 feet, subsequently 3 feet more, in all 7 feet; and as a matter of course the houses had to follow suite, and so it came about that whole blocks were raised, some first the 4 feet, and subsequently the remaining 3 feet, others the entire 7 feet at once. It was necessary to raise an entire block, sometimes consisting of as many as forty houses, at one operation, because, as with us, each house has but one party-wall dividing it from its neighbour. The joists in these houses are invariably laid parallel to the front, because the average width of each 'lot' is from 25 to 30 feet, and the rooms, especially on the ground or shop floor, are consequently of greater depth than width. In most cases only the shell of the building is of brick or stone, the internal walls being partitions of wood with brick-nogging or lath and plaster, as with us, and there appears to be no Building Act which prevents the erection of chimney breasts on wood corbels, as this is the ordinary mode of construction. Another peculiarity which strikes an English architect is the extreme thinness of the outer walls, upon which, as we have seen, the stability of the structure is made to depend more than in England, where internal walls of brick or stone help so much to stiffen a building. The thickness of an outer brick wall rarely exceeds twelve inches by a height of often six storeys; neither is the manner in which the bricks are laid of the best kind, for it consists principally of old English bond, namely, of seven courses of stretchers (each course consisting of three bricks four inches wide laid behind one another) to one course of headers. The plan usually adopted in raising the blocks was as follows:—Having obtained a sure footing on either side of the wall to be raised, as also under all openings where practicable, needles are gradually introduced, extending through the wall, and resting at either end upon a 'jack.' The average distance of the screw-jacks is about 4 feet apart, but 3 feet is preferred. The screw is 2 feet long by a diameter of 2½ inches, and contains 48 turns of the thread, which is ⅜ths of an inch thick. One man is told off to every twelve jacks; he is armed with an iron bar 4 feet long, and at the sound of a loud whistle from the foreman every man gives his jacks half a turn. Meanwhile the house is by no means deserted, for all within it goes on as usual; the lady is in her favourite rocking chair sipping her 'candy,' the gentleman keeps his long legs where they were upon the table before him, and enjoys his 'quid' quite unconcerned about the operations going on beneath him. Indeed the work is of necessity so gradual as to be quite imperceptible, for on an average the half-turn of every screw takes five minutes, the result being that in a day of ten hours a house is only raised twelve inches. When this height is reached, every alternate screw is usually withdrawn, and placed upon a higher bed, when they in their turn take the superincumbent weight off the remaining screws, and the operation of raising them also is repeated. In this way many entire blocks of buildings have been raised, as also other houses standing alone, such as Tremont House, Briggs's Hotel, and the Metropolitan Hall. Briggs's Hotel is a corner house with two frontages of 150 and 200 feet respectively, and is six storeys high. In 1866 it was raised 18 inches, the operation extending over a period of six weeks. That the system, which we have described, should have called forth a new class of workmen is not surprising, and accordingly contractors for this species of work are called 'house movers and raisers,' and possess a stock-in-trade of sometimes upwards of 2,000 jacks wherewith to meet the requirements of house-raising Chicago.

### SOCIETIES.

#### Royal Institute of British Architects.

ON Monday, May 31, a special general meeting of members only will be held at eight o'clock, for the purpose of electing an Honorary Secretary for Home Duties, Mr. Wyatt Papworth, Fellow, having communicated to the Council his resignation of that office, to which he had been elected at the last annual general meeting. The following motion (by Professor Kerr) will also be discussed:—

'That a Committee be appointed to enquire into the operations of the Institute, and to propose means for increasing their efficiency.'

Both these matters involve important considerations, and for the sake of the Institute we trust that the various opinions which they are likely to elicit will find a fair hearing. Above all things it is desirable that in the election of a new Honorary Secretary, the question of *party* feeling should be put completely aside. Whatever may be the individual tastes and artistic convictions of a gentleman in this position, they neither need nor ought to affect the discharge of his duties in the least degree. Those duties, since the appointment of paid officers, have been practically rendered very light, and might be easily undertaken by anyone of sufficient status to command respect, and with sufficient tact, judgment, and discretion, to ensure and deserve popularity.

The gentleman who now for, we believe, seven years, has filled the posts, first of senior and then of sole Secretary for home affairs has done much to entitle him to the gratitude of his professional brethren. To him it is very largely due that a spirit of party which some years ago threatened to eclipse every other movement in the profession has been tranquillised; and, turning to his practical services to the members, no one who values the 'Transactions of the Institute,' as now published and illustrated, ought to forget how much improvement in their form and appearance has been effected during the past seven years. Should the solution of the uncertainty, which at the present moment exists, be found in the re-election of the late honorary secretary for another year, we shall have an officer who has shown and will show equal courtesy alike to those with whom he happens to agree and to those from whom he happens to differ; and who has habitually devoted much time to the Institute.

There is however, no doubt, a desire which has been a growing one to change, not so much any individual, as the policy administered by the officers of the Institute, and a change of policy generally implies a change of officers. It has been felt that the Institute, if kept up, has hardly been pushed forward of late years; and while we fully admit that to maintain the efficiency and dignity of such a body is no small service, we cannot but see that more might be done by the organisation at Conduit Street than has been done, and that a great field of usefulness and activity lies open which is at the present moment but imperfectly filled. There is, in fact, a call for advance and change, and if one of the shapes which that call has taken is a desire for fresh officers, we cannot feel surprised.

#### Civil and Mechanical Engineers' Society.

Paper 'ON THE BRIDGE OVER THE RIVER THAMES, CARRYING THE WEST LONDON EXTENSION RAILWAY.' Read April 21, 1869. By WILLIAM LAWFORD, Mem. Inst. C.E.

This bridge was erected for the purpose of carrying the West London Extension Railway (which connects the North-Western and Great Western Railways with the Victoria Station, at Pimlico) across the River Thames, between Chelsea and Battersea, under the provisions of an Act of Parliament, which received the Royal assent on August 13, 1859.

The bridge consists of five segmental arches of wrought-iron, each arch having a span of 144 feet on the skew, with a rise of 16 feet, or one-ninth of the span. There are also, on the Middlesex side of the river, six, and on the Surrey side four, land arches of brickwork, each with a span of 40 feet and a rise of 10 feet. The total length, therefore, of the whole structure is 1,270 feet. The abutments and piers of the five main openings are massive pieces of masonry, and are carried to a depth of 36 feet below Trinity High Water mark, and 14 feet below the bed of the deepest part of the river. The soffits of the arches at the crown are 22 feet above the same point (i.e. Trinity High Water mark), in accordance with the requirements of the Admiralty and the Conservators of the River Thames. The level of the rails is 26 feet above Trinity High Water mark. The width of the river between the two abutments is 776 feet on the skew, and 706 feet on the square. The width of waterway afforded is 720 feet. The angle at which the bridge crosses the river is 75 degrees. The greatest depth of water is 22 feet below Trinity High Water mark, the average rise and fall of the tides at this place being about 13 feet 6 inches.

The Piers were constructed in cofferdams, the inner row of piles being 5 feet from the outer edge of the lowest course of masonry, and were driven to a depth of 15 feet below the bed of the river; the outer row were 5 feet from the inner row, and driven to a depth of only 8 feet from the same point, the space between the two rows of piles being filled with puddled clay. At the conclusion of the work, the outer row of piles were drawn, but the inner row were cut off level with the bed of the river. As the masonry of the piers proceeded, the space between them and the piles was filled with puddled clay, well trodden in, to a height of 3 ft. above the bed of the river. Each pier stands on a bed of concrete 2 ft. thick, extending 3 ft. beyond the lowest course of footings; on the concrete is laid a course of York landings 1 ft. (12 in.) thick, and projecting 1 ft. beyond the footings.

The foundations are carried up in brickwork to within 2 ft. of the bed of the river, where there is a through course of stone 2 ft. thick; from this point to the springing of the arch the piers are faced with picked face Ashlar of Bramley Fall stone. There is a second through course of stone half-way between the bed of the river and the springing, and the upper or last 7 ft. of the piers, including the springers (which are 3 ft. thick), are entirely solid stone-work. The two abutments are built similarly to the piers, except that they have hollow chambers filled with gravel to a height of 3 feet above the springing of the arch:—each abutment being just on the edge of the river, required only half a cofferdam for its construction. All stonework of both piers and abutments above springing height is tool dressed. The concrete used in this bridge was composed of five parts of gravel to one of blue lias lime, and the mortar of two measures of sharp sand to one of the same sort of lime.

#### RIVER ARCHES.

Each of these is composed of six wrought iron ribs, arranged in pairs 2 ft. 6 in. apart from centre to centre. The arch or vousoir of the four main or inside girders is formed of  $\frac{3}{8}$ -in. vertical plates, 39 in. deep at the springing and 24 inches deep at the crown, with double angle irons, each 4 in.  $\times$   $3\frac{1}{2}$  in.  $\times$   $\frac{1}{2}$  in. top and bottom, to which the flanges are attached by means of rivets; there is also a packing strip 8 in. by  $\frac{1}{2}$  in. between the angle irons and the flanges. The flanges consist of two  $\frac{3}{8}$  in. plates 18 in. wide. The upper member of the inside ribs is a horizontal parallel girder, similarly constructed, but only 24 in. deep throughout its entire length: the vertical web is  $\frac{1}{2}$  in. plate from the pier to the point where the upper and lower member intersect, i.e. 15 ft. from the centre of the arch, and from this point both vertical webs are  $\frac{3}{8}$  in. in thickness; the bottom flange of the horizontal girder consists of one plate 18 in. wide by  $\frac{1}{2}$  in., 2 angle irons  $3\frac{1}{2}$  in.  $\times$   $3\frac{1}{2}$  in.  $\times$   $\frac{1}{2}$  in., and a packing strip 8 in. by  $\frac{1}{2}$  in.—the upper flange is 15 in. wide, all other dimensions being the same as those of the lower flange: but the top plate is slightly curved inwards towards the rails. In the two outside ribs the vousoir is constructed as already described, but is 30 in. deep at the crown, and 39 in. at the springing; it may be well to mention here that in these two girders, on the outside faces of the arch, all the rivets, excepting those in the angle irons, are countersunk—no cover plates either being visible at the joints—the whole centre web presents, therefore, the appearance of one smooth unbroken plate; this centre web is a  $\frac{3}{8}$  in. plate, the two flanges are single  $\frac{3}{8}$  in. plates 16 in. wide, the angle irons  $3\frac{1}{2}$  in.  $\times$   $3\frac{1}{2}$  in.  $\times$   $\frac{1}{2}$  in., and the packing pieces 8 in. by  $\frac{1}{2}$  in. The upper member is constructed in the same manner as that of the inside ribs, but it has throughout the whole span  $\frac{1}{2}$  in. vertical plates, and is only 18 in. deep at the crown of the arch; the upper flange is 18 in. wide, and is parallel with the lower flange, which is only 15 in. wide; the angle irons and packing pieces are of the same dimensions as those already described for the inside top members. The

total depth of the girders, both inside and outside at the centre of the arch, is the same, viz. 48 in.

The sectional area of each of the four main girders is as follows:—

In the arch, at the springing	80 sq. in.
In the upper member	43 "
Total	123 sq. in.

and at the centre of the arch, where the upper and lower members are, together, 105 sq. in., the mean average being 114 sq. in.; these are the full sectional areas, including the rivets.

The vousoir and the upper horizontal girder of the four main girders are connected together by a lattice spandrel, composed of H iron, of three different sizes, viz., 7 in., 6 in., and 5 in. by  $\frac{1}{2}$ . A stiffening bar of flat iron  $\frac{3}{8}$  in. thick is added to each side of the H iron, connecting the lattice bars throughout at the angles of intersection. In the outside girders, the lattice and stiffening bars are all made of double T iron, riveted together thus  $\frac{1}{2}$  and of the same dimensions as the H iron, i.e. 7 in. by  $3\frac{1}{2}$  in., 6 in. by 3 in., and 5 in. by  $2\frac{1}{2}$  in.—all  $\frac{1}{2}$  in. iron. Each pair of ribs is connected near the haunches by means of frames, composed of angle irons, cross-braced, and riveted to the ribs, forming an open-box girder; this principle is continued to the crown of the arch, where the vousoir and top girder unite in a double cell. Each pair of main girders are braced together at the haunches by means of trellis transverse girders, 2 ft. 6 in. deep, carried up at equi-distant intervals to within 10 feet of the centre of the arch; there are seven of these in each half arch; they are composed of angle and bar irons,  $3\frac{1}{2}$  in.  $\times$   $3\frac{1}{2}$  in.  $\times$   $\frac{1}{2}$  in. The top members of the main ribs are secured together by the cross girders, which carry the roadway; they are fixed over the whole length of the bridge 4 ft. apart from centre to centre, and are composed of a middle web of iron 10 in. deep and  $\frac{1}{2}$  in. thick, the bottom of which is flanged with double angle iron,  $3\frac{1}{2}$  in.  $\times$   $3\frac{1}{2}$  in.  $\times$   $\frac{1}{2}$  in., and the top with double channel iron, on the lower flange of which the buckle-plate flooring rests—the cross girders rest on the lower flange of the top main girder, and are secured in their places by iron knee pieces riveted through the centre webs. The main or bearing girders are again cross-braced by diagonal rods, bolted to a centre plate and to brackets riveted on to each of angles: there are three sets of these tie-rods in each half arch. Upon the end of each arch or vousoir a plate of cast iron 3 in. thick is fixed, the back of which is placed quite true and even; these again fit into heavy cast iron shoes (weighing 2 tons each) let into the stone skewbacks of the piers and abutments; and by means of wrought iron wedges are finally adjusted in their seats. Contraction and expansion are provided for as follows: cast iron standards are bolted to the stone work of the piers, and united by a cast iron frame secured with bolts and nuts—these standards have recesses to receive the ends of the horizontal girders, and secure them in position, at the same time allowing for horizontal motion; a bed and bearing plate, planed perfectly parallel and fixed under the ends of the horizontal girders, upon which they slide.

The railway is a double line of mixed gauge, and is carried over the bridge by means of longitudinal timbers with transoms every 10 feet apart. Ash ballast is used all over the bridge; a cast iron moulding is attached to the horizontal girder throughout its whole length, and a cast iron plinth is bolted on to the top of the same; an ornamental cast iron parapet is fixed on the plinth, and the whole is surrounded by a wooden hand-rail.

The iron of which this bridge is built was manufactured by the Shelton Iron Company, at Stoke-upon-Trent, and is perhaps better known as Lord Granville's iron. In the experiments made for testing the quality of the iron, it bore a tensile strain of nearly 18 tons per square inch without showing any signs of fracture.

The H and T iron used in the spandrels was rolled by the Butterley Iron Co.; about three quarters of the ironwork was made and put together by Messrs. Calvert, of York, and on the collapse of that firm it was completed by Mr. Charles Lungley, iron shipbuilder of Deptford. The contractors for the whole work, and, indeed, for the whole of the West London Extension Railway, were Messrs. Brassey & Ogilvie, names well known in the railway world, and a sufficient guarantee that the work would be well and substantially carried out. The width of the bridge between the cast-iron parapets is 30 ft. in the clear. The total width of the piers from out to out, above springing level is 35 ft. 6 in., and at that level including the cut waters 53 ft. 6 in. The total cost of the bridge was 104,000*l.*, or 52*l.* per lineal foot, and 2*l.* 10*s.* per superficial foot. The materials used in its construction were—

2,000 cubic yards of concrete
11,100 " brickwork in mortar
130,000 cubic feet of stone
2,160 tons wrought-iron
366 " cast-iron
2 " lead
28,000 cubic feet of timber, exclusive of the piles.

This bridge was the joint design of Messrs. Baker & Bertram, the chief engineers of the North-Western and Great Western Railways. It was opened for public traffic on March 2nd, 1863, since which date some hundreds of trains have passed over it daily, and I am not aware that up to the present time any expense whatever (beyond the maintenance of the road) has been incurred either in repairs or otherwise. The bridge was only 15 months under construction, i.e. from the time the first stone was laid until a locomotive passed over the river.

The bridge was very severely tested on January 7th, 1863, by Captain Tyler, R.E.

The narrow gauge load consisted of two locomotives and tenders, funnel to funnel, and two tank engines—total length of train, 132 feet; total weight, 176 tons. The broad gauge load consisted of two tank engines, in the same position as the narrow gauge engines, each drawing six loaded coal waggons—total length of train, 276 feet—total load, 292 tons; these two loads, collectively, being equal to about  $2\frac{1}{2}$  tons per lineal foot.

1st. The narrow gauge load passed over No. 1 arch at full speed, the deflection = 5/100ths foot.

2nd. The broad gauge load passed at full speed—same result.

3rd. The broad gauge load on one road, and narrow gauge on the other, both passed together over No. 2 arch at speed. On going over No. 1 arch, No. 2 rose 3/100ths ft.; on going over No. 2, it deflected nearly 10/100ths ft. = rise and fall = 13/100ths ft.

4th. Both loads were brought to rest on No. 2 arch, deflection 11/100ths ft.; when the load passed slowly over No. 3 arch, No. 2 rose 2/100ths ft. rise and fall = 13/100ths ft. Both loads remained stationary for some time on this arch, but no further deflection took place, and with the removal of the load, the girders rose simultaneously to their original height.

5th. The same thing was done on No. 3 arch with a precisely similar result.

6th. The same experiment was made on No. 4 arch, and in exactly the same manner as the fourth experiment.

Rise of arch, 2/100ths ft.; Deflection, 10/100ths ft.; Rise and fall, 12/100ths ft.

7th. The same thing was done on the fifth arch; the rise was 2/100ths ft.; deflection, 8/100ths ft.; rise and fall, 10/100ths ft.

The bridge was very steady throughout these experiments, and there was very little lateral vibration, even when both loads passed at the same time in the same direction, either slowly or at speed.

At the termination of the paper a very spirited discussion took place upon the details of construction of this and other bridges, in which the President, Messrs. Uaill, Walton, Godson, Meakin, Seiff, Bancroft, Roberts, and Lawford took part, and it was resolved unanimously that the best thanks of the Society be given to Mr. Lawford for his valuable paper. The meeting was then adjourned.



To the Editor of THE ARCHITECT.

#### THE CONCENTRATION OF THE COURTS OF LAW.

SIR,—It is now some thirty years since it was determined that the Law Courts should be removed from Westminster, and the Palace completed by demolishing the anomalous structures on the north, and building a suitable front. At this day the Palace is nearly complete, but this imperfection remains, and seems likely to remain.

It is now proposed to remove the Law Courts to the Embankment, while the offices in Somerset House are being vacated, and their inmates transferred to Whitehall. The period is suitable for constructing temporary Common Law Courts, like the Equity Courts in Lincoln's Inn. The quadrangle and open space of Somerset House will afford room for the Courts, while plenty of apartments can be found on the ground floor for judges' rooms, offices, &c.

In this way, first of all, the Palace of Westminster will be cleared, and, secondly, the Common Law Courts will be at once brought close to their ultimate site, and near the Equity Courts, so that the whole legal profession will be concentrated with less inconvenience than remaining at Westminster, and with small expense.

Your obedient servant,

E. R.

#### THE ARCHITECTURAL MUSEUM.

SIR,—I should be glad to let those who are interested in the Museum know, through your columns, that we are now busily engaged in arranging our collection. The task of sorting and finding suitable hanging space for the various objects in so large a collection occupies, it is found, a longer time than was at first anticipated. Hence a slight delay has arisen, for which I should be glad to explain the cause to the public; and here I would remark that it is felt by those who are carrying on this work that, considering the advantages gained by Architects for an annual guinea, and the very disinterested way in which Art Amateurs have come forward, we may fairly look for more general help from the profession.—Yours truly,

J. CLARKE, Hon. Sec.

[\* \* We regret that want of space prevented our inserting this letter in our last issue.—Ed.]

#### THE SECRETARYSHIP OF THE INSTITUTE.

SIR,—As Mr. Robert Kerr is sending round for signatures to a requisition to Mr. Charles Fowler to allow himself to be proposed for the vacant secretaryship of the R.I.B.A., you will perhaps be so good as to allow me to say that our late secretary, Mr. Seddon, will be proposed for reelection at the meeting on Monday next.

I am your obedient servant,

51, Russell Square, London, W.C., May 27. GEORGE EDMUND STREET.

**Burlington House and its Alleged Illegal Projection.**—Some weeks ago the attention of the Metropolitan Board of Works was called to the circumstance that a structure had been erected at Burlington House, Piccadilly, which projected over the foot pavement, contrary, it was stated, to the provisions of the Metropolitan Building Act. Mr. Vulliamy, superintending architect, on being asked if it had received the sanction of the Board, stated that the structure referred to consisted of a porch, built of brickwork, in front, with wooden side enclosures, and that no application had been made to the Board for their consent to the erection, and no sanction had been given. The Board directed that a communication be addressed to the vestry of St. James's, Westminster, on the subject, and the vestry, on receiving the communication, referred the matter to the Works Committee, and that committee has recommended that no steps be taken at present in reference to the porch and projection, which recommendation the vestry has approved.

#### NEW BUILDINGS AND RESTORATIONS.

**New Offices of the Poplar District Board of Works.**—The 'inscription stone' of the new offices of the Board of Works for the Poplar District was laid on the 20th inst. The site is at the south-east corner of the Poplar recreation ground. The design of the new buildings was offered to competition, and the result was that Messrs. Hill and Fletcher took the first prize, and Messrs. N. and C. Harston the second. These four gentlemen were appointed joint architects, and in March last tenders were received for the erection of the offices, the highest being 15,997*l.*, and the lowest 7,333*l.* The latter was accepted, and the execution of the works entrusted to Messrs. Baker and Constable, of Islington. The plan of the building is rather novel. The ground floor of an octagonal tower, placed at the angle of the two streets, forms the entrance hall; passing through this hall and a vestibule, on the left are the main staircase and offices for the clerks' department, and on the right a corridor communication with the rooms to be occupied by the surveyors, medical officers, and inspectors, &c. The strong rooms and housekeeper's living rooms are in the basement, approached by separate staircases. On the first floor are placed the board-room, committee-room, waiting-rooms, &c. The board-room will be in length about 60 ft. and in width about 40 ft. But little money is to be spent on the interior decoration of the board-room, as the architects have relied solely upon the well-arranged proportions of the room, which contains a large gallery for the use of the ratepayers. To obtain access to this gallery a separate staircase is provided, with an entrance from Woodstock Road. The exterior walls are to be constructed of brickwork of the best quality, with stone cornices and window dressings. The principal entrance door to the octagon hall will be of Portland stone, with polished shafts of Scotch red granite. The board-room windows will have similar granite shafts, and carved stone capitals and bases.

At the last fortnightly meeting of the Oxford Local Board, the General Purposes Committee reported that plans had been received by the surveyor, from Mr. Butterfield, architect, of the gateway of Keble College, with lecture rooms above, to be built by Messrs. Parnell, of Rugby, and that he recommended the same for approval. Alderman Carr said the proposed gateway projected 5 feet from the frontage of the present building. Everybody who saw the Keble College would regret that it was not set back 12 or 14 feet from the Parks Road, as it spoilt one of the prettiest streets in course of construction in Oxford; and he was afraid that before long, in order to obtain proper light and ventilation, the trees in front of the college would have to be cut down. The first question that arose in his mind was, whether the projection of 5 feet would encroach on any part of the road; and, secondly, whether the builder or the committee of management would be prejudiced by an alteration of the plan.—Mr. Grant proposed that the subject of the gateway be postponed to the next meeting of the Board, to give them an opportunity of looking into the question. He should be sorry to attempt to deal with the matter if they had no power, but he thought there were ways and means of accomplishing what the Board desired. He considered the road was miserably cramped, and if the 5 feet projection were carried out, it would be still more miserably cramped. Alderman E. T. Spiers seconded the motion. He was very sorry to find a building like Keble College brought so close to a narrow road like the Parks Road. Professor Bernard regretted that the road was so narrow where the college was being erected. As regarded the building, it should be remembered that the trustees purchased a certain quantity of the land upon which they had to erect a college containing a certain number of rooms. All he wished was that the Board should not make an objection which they could not sustain. The motion was then agreed to.

**New Roman Catholic Church.**—Archbishop Manning and Bishop Morris, assisted by many of the clergy of the Roman Catholic dioceses of Westminster and Southwark, opened a handsome church on May 23, at Sunbury-on-Thames, about 15 miles from London. There were present a considerable number of the laity, amongst whom were the Duc de Nemours and the Princess de Nemours. The church was only commenced last summer, and forms a very striking addition to the beautiful scenery by which it is surrounded. It is Gothic, of the Early English style, and is built of Kentish stone. The interior is 60 ft. long by about 30 ft. wide, and has an apsidal chancel. The nave is separated from the aisles by columns, from which spring four arches. It is well lighted by several windows. Architect: Mr. Charles Buckler, of Hereford Square.

**St. Luke's Parochial Schools, Gloucester.**—The foundation-stone of these schools was laid on Whit-Monday. The building will consist—on the ground-floor of boys' schoolroom, 70 ft. by 20 ft.; girls' schoolroom, 60 ft. by 20 ft.; and infants' schoolroom, 65 ft. by 20 ft., with class-rooms attached to each, and separate entrances, affording accommodation for over 450 children. A house for the master is attached, with offices and yard, containing on the ground-floor parlour and kitchen, and three bedrooms on the first floor. Spacious play-grounds are provided. The schools and class-rooms will be 12 ft. high to the wall-plate from the floor, and the timbers of the roof, which are to be exposed to view, will be stained and varnished. The building is intended to be constructed of red brick, with bands of ornamental coloured bricks. The design was prepared by Mr. Alfred Wm. Maberly, architect, of Brunswick Road, Gloucester, under whose superintendence the works are to be carried out. The estimated cost is 2,000*l.*, but it is expected that 2,650*l.* will be required.

**Newcastle-on-Tyne.**—New slaughter-houses have been commenced in this town on the principle of the abattoirs of France. Mr. Thomas Oliver is the architect.—A new mission chapel and residence is about to be erected from designs by Mr. Thomas Oliver. The style is Gothic.—The contracts for erecting a large drill shed have been let to Mr. Kennedy, of Jarrow. The building will be 130 feet by 50 feet, and rooms for dressing, smoking, &c., are attached; Mr. Thomas Oliver, architect,—whose designs have also been selected for the proposed new Congregational church, Texteth Park, Liverpool.

The new western dock at Hull will be formally opened on June 28. It is thought probable that some member of the Royal family will be present. A grand banquet will be given by the Hull Dock Company on the occasion.



## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

**Mr. Street's New Design for the Law Courts.**

It will be remembered that it was only on the 20th of last month (April) that the intention of the Government to move the Law Courts to the Embankment site was first made known, and that on the 4th of the present month Mr. Layard stated that Mr. Street was already engaged on plans for the building adapted to the new site. Even those familiar with the extraordinary rapidity with which that brilliant architect works, may be astonished to know that finished sketches of his new design are already complete. Perhaps no architect engaged on a work of such importance and size has ever before enjoyed the immense advantage, after studying his subject for months—in fact, years—and mastering the whole of its details, of being suddenly called upon to throw his work into an entirely new form, with the additional incentive of a magnificent and novel site. To the few by whom as yet the designs have been seen, their superiority even to Mr. Street's matured design for the Carey Street site is strikingly evident. The new and happy disposition of plan and of exterior features, suggested to the architect by the change of locality, will prove the best vindication of that change, while the contrast between the simple and complete arrangement of the plans shortly to be laid before the House, and the best arrangement that can be placed upon the existing misshapen site without purchases of additional land, will not fail to strike every observer capable of forming a judgment. We should not feel justified in laying before our readers any descriptive account of the design at present, but we cannot forbear stating that the difficulties of the site will be found to have proved—as difficulties do in the hands of a man of real genius—the stepping-stones to success. The unusual outline of the ground, and the difficulty of treating Somerset House Terrace (to quote only two examples), will be seen to have led to two of the most original and successful features of the whole.

**The Soirée of the Institution of Civil Engineers.**

Mr. Gregory, the President of the Institution of Civil Engineers, held on Tuesday last the first reception that has taken place in the new rooms of the institution, and a very large number of gentlemen accepted his invitations. Indeed, spacious as the suite of handsome reception rooms now is, they were at one period of the evening almost inconveniently crowded.

The fine proportions of the large meeting-room, although they were marred by the want of suitable decorations to the walls, were the subject of many remarks. Mr. T. H. Wyatt, the architect of the building, has certainly produced an effective result; though we doubt whether, looked upon as a room for meetings, the old lecture theatre was not better. On the present occasion, however, filled with models, or actual specimens, of all that is newest or most striking in mechanical invention, and crowded with visitors, this hall left nothing to be desired.

A large number of choice paintings and works of art, lent by the members and their friends, were displayed on the walls and in the rooms.

Most of the leading engineers of the day were present; among them we noticed Mr. Bidder, Mr. Hawkshaw, Mr. Page, Sir Charles Fox, Mr. Haywood, Mr. R. Rawlinson, and Mr. Whitworth. Among the architects present we may name Mr. Fergusson, Sir Digby Wyatt, Professor Donaldson, Mr. Marrable, Mr. Edmiston, Mr. Pocock, Mr. Talbot Bury, Mr. Hayward, Mr. Eastlake, and Mr. Roger Smith. The visitors included Professor Liebig, two sons of Count Bismark, Sir Charles Trevelyan, Professor Owen, Mr. Edwin Chadwick, Mr. Hyde Clarke, Mr. Hepworth Dixon, and many others. The arrangements were very complete, down to that detail where such entertainments most ordinarily fail, *i. e.*, the system of taking care of the hats and coats, which was in this instance thoroughly satisfactory.

**The Architectural Publication Society.**

At the annual meeting of this society, to be held at Conduit Street on Monday, May 31, a plan for gaining such an accession of subscribers as shall insure the completion of the very valuable Dictionary of Architecture now in course of publication by the society will be brought forward. We are happy to understand that, in consequence of a circular which has been sent round to members of the architectural profession, many new subscribers have been already obtained. The non-completion of the dictionary is not to be thought of, and we hope the proposals now under consideration will be largely embraced.

**The Society of Arts Soirée.**

The Soirée of the Society of Arts will be held as usual in the South Kensington Museum, the most appropriate if not the only place for so large an assemblage as that occasion always draws together. Cards are not yet issued, but the evening of June 23 is fixed as the date of this reception.

**Portsmouth.—Society for the Culture of Science and Art.**

Under this title a new society has been formed in Portsmouth, which indicates an improving spirit in the right direction. The session has just closed, the society having been instituted on February 2, the Mayor, Mr. Edwin Galt, presiding. The inaugural address was delivered by him on February 25. Eight or nine papers have been read on subjects of scientific importance during the session. We believe it is intended in the next session to introduce papers of more general interest, including those relating to constructive science, &c., &c.

**'More Lost than the Egyptians in their Fog.'**

Meteorological observations have been made during two years at three stations on the Isthmus of Suez, an account of which has been given by M. Le Verrier to the French Academy. It is said that the introduction of the waters of the Mediterranean to the lakes has sensibly increased the hygrometric humidity of the atmosphere, and that fogs, as dense as those of Paris, have been observed in this rainless district.

**General.**

**The Site for the Law Courts.**—In a circular just issued, the Incorporated Law Society of Liverpool express their opinion that the choice of the site of the new Law Courts and offices is a question which affects the provincial members of the profession almost as much as the metropolitan members, and the public as much as either. They say, the additional delay which would be caused in acquiring the Government site would be a grave objection, even if the new site were an undoubted improvement on the old one; but as the latter is more suited in every way to the purposes for which it is intended, they have no hesitation in recommending the Carey Street site, whether the larger or smaller building upon that site be ultimately resolved upon by Parliament. The reasons shortly stated are:—1, because the Carey Street site is in the very heart of legal London, while the Government site is at the southern extremity thereof, and is far removed from all the Inns of Court and attorneys' chambers, except the Temple and Essex Street; 2, because the close concentration of barristers and attorneys round the new Law Courts and offices will tend to facilitate the administration of justice and the transaction of legal business, and such concentration will be best attained by adopting the Carey Street site, which is already surrounded by the chambers of barristers and attorneys, while only two sides of the Government site, *viz.*, the north and east, are at all available for all these purposes, the south and west sides being shut in by the river and Somerset House, and even on the north side the existing houses must be diverted from their present uses, and many of them doubtless rebuilt before they can be made available for purposes of the law; 3, because, on the Carey Street site, the courts and offices about to be erected can be subsequently extended, if necessary, much more easily than on the Government site; 4, because the Carey Street site is already acquired and ready for building on, and the plans approved; and the Government site is, for the most part, covered with houses which will have to be bought at an uncertain cost, and at more or less delay. The document is signed by the President, Mr. John Yates.

**The new Church at Meole, Shrewsbury,** lately opened, consists of a wide nave, with north and south aisles, south porch, chancel—the width and height of the nave terminating in a three-sided apse—north and south chancel aisles (in one of which is placed the organ from the old church, the other contains seats for the school children), also vestry. The tower, which will be at the west end of the north aisle, is carried up as far as the first stage. There are convenient open seats in the nave and aisles, and stalls in the chancel, all of oak, providing accommodation for 500 persons. The pulpit, which is of stone, inlaid with coloured marble, stands at the north-east angle of the nave. The font has also alternate panels of coloured marble and carving. Messrs. Maw & Co.'s encaustic tiles have been used for the chancel. There is a reredos of marble, with central cross of white statuary. The apse is also further enriched by a damask hanging. Mr. Boulton, of Cheltenham, executed the carving throughout the church. The windows are glazed with cathedral-tinted glass, by Messrs. Done & Davies, with the exception of the central window of the apse, which is filled with stained glass by Messrs. Morris & Co., of Queen Square, London. In the centre light is a painting of The Crucifixion, with the Virgin and Child underneath, the side lights being divided into panels containing double figures of angels, apostles, martyrs, prophets, and kings; in the head of the window is represented Our Lord in Glory, surrounded by angels. The style of the church is Early Decorated. The walls have been built of Red Hill stone, cased internally with Shelvoke, which is also used for the dressings. The shafts to the arcades are from Besford Wood; those supporting the chancel arch are blue Pennant. Mr. W. Dodwell has supplied the warming apparatus. The architect is Mr. Edward Haycock, jun., of Shrewsbury.

**The Feversham Memorial,** the foundation stone of which was laid on May 17, will be fifty feet high, will rise from a four-stepped base, and have a basement of twenty-four feet square. It will be built of silicious sandstone from Bilsdale and Farnedale, on the estate. The cost will be about 800*l.*, and within the memorial will be a marble statue of the late Lord Feversham, to be executed by Noble, of London. During the restoration of the parish church the removal of the floor of the chancel led to the discovery of a number of stones with square cavities cut in them. The only conjecture as to their use that we have heard is, that they served to step the wooden posts which formed part of the walls of an early Saxon church. All the stones, with one exception, were buried again beneath the chancel floor. The one saved was used on the day of inauguration for the reception of the document, coins, &c., and now reposes beneath the foundation stone of the Feversham Monument.

**The Statue of the Marquis of Westminster** in Chester, from Mr. Thornycroft's studio, has an inscription cut in the solid block, with gilded letters on the west side of the pedestal as follows:—'Richard, 2nd Marquis of Westminster, K.G.; the generous landlord; the friend of the distressed; the helper of all good works; the benefactor of the city. Erected by his tenants, friends, and neighbours, A.D. 1869.'

**MEETINGS OF TECHNICAL AND LEARNED SOCIETIES.**

ROYAL INSTITUTION OF GREAT BRITAIN.—Lectures on Saturdays, May 29 to June 12; by Emanuel Deutsch, Esq., on 'Semitic Culture,' at 3 P.M.

ASSOCIATED ARTS INSTITUTE.—Saturday, May 29. Paper by Lemon H. Michael, Esq., on 'True Nobleness in Art'; and annual meeting, at half-past 8 P.M.

ARCHITECTURAL ASSOCIATION.—Friday, June 11, at half-past 7 P.M.; 'Historical Account of the Artistic Treatment of Piers, Pillars, and Columns,' by J. Tavernor Perry, A.R.I.B.A.

ROYAL ARCHEOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.—The next monthly meeting will be held on Friday, June 4, at 4 P.M.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Monday, May 31; special general meeting at 8 P.M.

SOCIETY FOR THE ENCOURAGEMENT OF FINE ARTS.—Thursday, June 10, 8 P.M., 'On Architecture connected with the Structures of Civil Engineering,' by T. Page, Esq., F.R.G.S., F.G.S.

# The Architect.

## THE ROYAL ACADEMY EXHIBITION.

BY EDWARD W. GODWIN, F.S.A.



THE paintings which remain to be noticed are, with a very few exceptions, worse even than those which mainly fill the five rooms we have already gone through. This assertion must be taken, however, in a general sense. For although the majority of paintings in the galleries No. VI. to No. X. inclusive are eminently uninteresting in subject, and weak in execution, and although these galleries happen to contain such works as Nos. 348, 353, 363, 364, 425, and 465, still we find nothing sufficiently low in the scale of painting to be put in comparison with some few of the paintings which deface the walls of the galleries on the other side of the house.

Chief among those worthy exceptions to which I propose now to call attention are the works of what, for the sake of distinction, may be called the Classic School, represented by Mr. Watts, Mr. Leighton, Mr. A. Moore, and Mr. Tadema. When to these are added the works of Mason, Walker, Sandys, and H. Moore, Mr. Millais' *Vanessa*, and M. Vertumni's *Pontine Marshes*, I should not perhaps be far wrong in saying that the strength of the Exhibition rests mainly in this side of the house. Besides the artists whose names have just been mentioned, there are others whose works this year may fairly be classed with the exceptional group. Mr. Armstrong, for instance, has made a great advance; Mr. Armitage has in some measure restored himself to that position he was bidding fair to lose by his *Herod's Feast*; whilst the works of Griffiths, M. Linnell, G. H. Broughton, and J. Castiglione, must not be forgotten.

If we seek among these for evidence of decorative powers, or, in other words, if we look at these pictures with a view to find if their authors would be likely to assist architecture in the capacity of wall painters, we shall have little difficulty in discovering much that must be regarded as favourable from an architect's point of view. Capacity and inclination are, however, very different things, although we see, or fancy we see, in certain works strong evidence of their authors' capacity for wall-painting. The decoration of architecture by colour, which means a little more than wall-painting, is impossible, unless the painter has some knowledge of, and love for, architecture, and an inclination to decorate it stronger, or at least as strong, as his desire to paint easel pictures, or his anxiety to appear on the walls of a fashionable exhibition-gallery. Gallery No. VII. is more than usually strong in presenting us with evidence of this capacity, expressed in three widely different ways, by three eminently modern artists. Mr. Leighton, dealing with Greek Mythology, gives us, in *Dædalus and Icarus* (469), what might be called 'the grand and monumental,' and although there is a great deal of perspective, and the drawing has certainly none of those flat qualities which are so desirable in wall-paintings, there is nevertheless strong evidence of the artist's power to conventionalise. It may be that the conventionalism is somewhat stagey—'academic' is, I believe, the proper word for it—still for any conventionalism we are grateful in these days of namby-pamby realism. If Mr. Leighton would think more of what the Greeks did, or would have done, and less of what the French do, he would find a conventionalism essentially belonging to his own art infinitely more satisfactory than that which he now feels himself compelled to borrow from another. It is hardly necessary to say, that Mr. Leighton's idea of colour is at total variance with that of all good wall painters, from the flourishing days of Assyria downwards. By the way, I must not forget to note that the pedestal in this picture shows us how the Greek masons utilised their defective columns. Mr. Albert Moore revives the Greek element in form and accessories; he tells us no story, he gives us no expression, but he relies on his composition and drawing, and the exquisite loveliness of Greek costume. 'A Quartett: a painter's tribute to the art of music, A.D. 1868' (No. 483), is certainly very lovely. It is eminently decorative in its composition and general treatment; and had the mere painting been a little more careful, it would have had the rare merit of being a true easel picture as well. There are two great qualities which should place this work high in the estimation of architects, viz., its flatness and its brilliancy—a brilliancy attained (and this

is especially noteworthy) with the most temperate use of colour, and by virtue of the most consummate knowledge of the value of white. It may be questioned whether, in this climate, where two days out of three are dark and gloomy, such excessive temperance be desirable in painted decoration. The easel picture can be placed in the light best suited for it, and in such cases the tenderest tones may be adopted with success; but in wall-decoration, or architectural painting, whilst we do not want such deep-tones and rich Venetian colouring as would produce the effect of a dark hole in the wall, we at the same time as little desire to see such faint and undecided tints as would produce the effect of stained white-wash. Better figure-drawing it is impossible to get. The picture is really composed of valuable studies of seated and standing figures, and of Greek drapery; but the way in which these studies are united with musical instruments, and finally named, is as violent an anachronism, as if an architect were to erect a series of Greek columns connected by an un moulded entablature, and crowned by the spire of Salisbury Cathedral.

Widely different from the painters whose works have been just noticed is Mr. T. Mason. In 'Girls Dancing' (No. 488) we have a work highly decorative in sentiment, and by no means difficult to translate into architectural painting. The band of blue sea which goes across the length of the picture, the proportion which the depth of this band bears to the divisions above and below, the way in which the canvas is filled up, although only three children and one tree occupy the field, are amongst the most thoughtful things in the whole exhibition. In the tree alone there is a wealth of composition. It is true that before the foreground and the sea-shore there is a landscape with very distant figures, farmhouses, &c., but so slight as to produce, at a little distance, the effect of a pattern, and thus it in no way interferes with the real subject of the picture or the decorative quality of the design. The colour *per se* is undoubtedly very good, but the artists we want to paint architecture must give us brighter and more joyous qualities.

To speak roughly, we want neither chalk nor mud. Besides the works in Gallery No. VII., Mr. Leighton exhibits (377) 'St. Jerome,' and a bogey lion (his diploma work), (705) 'Electra at the Tomb of Agamemnon,' and an inferior composition, 'Helios and Rhodes' (854). Mr. A. Moore, in 690, has a large and careful drawing of a nude figure, called 'A Venus.' The rough canvas, the painting, and the light in which the picture now stands, contribute to produce an effect of slightness in this work which it might not present in another position. As now seen, the flesh looks as if it had been built up by a long process of stratification; and some of the modelling of the body looks, from the same cause, rather coarse. As the Nestor of the classic party, Mr. Watts maintains his position in his small picture 'Orpheus and Eurydice.' The colour, the composition, and the spirit of the picture, all proclaim it his best contribution. The colour is especially great, but is the greatness of shadow rather than of light, and wants the brilliancy of a southern climate to illuminate it. On a particularly bright morning the work may be properly seen, if the visitor goes directly to it; but nine months out of the year it should be placed in a glass-house, if it is to be seen at all; whilst in this, and all such pictures, Time will soon render even these conditions of lighting unnecessary.

The other works in these galleries which I have marked for notice are Mr. H. Moore's pictures (Nos. 328 and 695). No. 328, 'Bright Weather after a Gale,' is indeed true to its title and to nature. The painting is somewhat coarse, and it is necessary to stand three or four yards from it to see it properly; No. 695, 'Coast of North Wales: Cattle basking on the Beach,' is one of the finest landscapes in the rooms. No. 382, 'Caught by the Tide,' by Mr. Hook, has the usual Hook-sea and rocks; one well-posed boy, and two other children who hamper the boy in more ways than one. No. 337, 'Nursing Donkey,' is spoilt by a 'prettiness' or affectation I should scarcely have expected from Mr. Hughes. No. 387, 'Vanessa,' by Mr. Millais, demands at least twenty-feet sight distance and a dull room. The painting itself is marvellous. In No. 365 Mr. Armitage shows certain decorative powers of composition. 'Christ calling the Apostles James and John the Sons of Zebedee' (Matthew iv. 21) is suggestive in design, although the Christ is weak, and the colour anything but satisfactory. Mr. Armstrong's 'Hay-time' (No. 375) has a good figure in it: viz., the woman with the baby. The dress is exquisite—a delicate purple pattern on white. This is not the first drawing of short-waisted women we have had from this artist, and therefore it may be hoped it will be the last. The same feeling for colour and flat treatment which is evident here may produce much greater

results, if combined with a costume less ungainly than that which Mr. Armstrong seems so anxious to immortalise. Mr. Allom exhibits an interior of the Church of S. Jaques, Antwerp (No. 393), which ought to have been with the Architecture. As it is now hung it is impossible to see it. The drawing seems very admirable. Mr. F. W. W. Topham (No. 398) produces, at first sight, a bright and decorative effect by virtue of adopting light walls as a background to his figures.

In Gallery No. VII. we have a decorative work by M. Tadema (No. 421), 'Une Danse Pyrrhique,' a subject which has the appearance of being strained: its drawing and colour are not what I should have expected. Mr. J. Griffiths, like Mr. Topham, has adopted a white back-ground in 'Soonabhaee' (No. 429). There is careful management of architectural accessories. A band of dark green leaves fills the top of the picture over the marble terrace, and the yellow figure composes well with its temperate and decorative surroundings. Mr. W. Linnell sends a large and important work (No. 461), and Mr. Perugini gives us a very fair study of drapery (No. 482), not quite equal, however, to last year's Daphne. Mr. Boughton's 'March of Miles Standish' has merits; but I must hasten on to Mr. F. Walker's single contribution, 'The old Gate' (No. 485). The sentiment and the management of colour deserve great praise. The drawing, too, is good, note especially the working man in the right-hand foreground, the dogs, and the ducks. One feels that the children have been placed by Mr. Walker with a promise of 'goodies' if they would only stay quiet; and although mere size has apparently been a temptation to Mr. Walker as to many others, still the winter landscape is cleverly filled in, and I never yet saw so much made of nine steps and two bad gate piers. No. 825, Gallery No. X., is a most careful drawing of 'The Room of Antiquities in the Louvre,' by M. Navlet. Was the subject worth such carefulness?

The Water-colours are, generally speaking, so inferior, that it is matter for wonder why a room should have been set aside for them, whilst Architecture was thrust on one side. I may, in passing, just note a very odd composition, No. 525, by W. B. Scott; Mr. R. T. Pritchett's capital crowd of 'Fish-buyers' (No. 598); and Mr. C. N. Henry's realistic 'Mill Pond' (No. 685). Although the paintings in this year's Exhibition are, as a rule, not only not flattering to, but absolutely misrepresentative of, our position in the art-world; still there are works enough to show that we have made progress. When however, we turn to the sculpture, there are scarcely half-a-dozen works worth the marble out of which they are cut, and only one of this half-dozen worth exhibition.

I do not include in this estimate any of the busts or portraits, which, with the painted likenesses, ought to be exhibited in a room by themselves, as being contrary to the whole intention and spirit of these arts; which ought, rightfully, to have no existence apart from architecture. The one piece of sculpture this year is, I need hardly say, by a foreigner, 'The Youthful Hannibal Strangling the Eagle,' allegorical of the struggle between Carthage and Rome during the Punic Wars (1,208). M. D'Epinay has given us in this group something really worth studying. We have but to compare it for a moment with Mr. Westmacott's 'Child and Swan' (1,193), or the works by Mr. Weeks, R.A., or Mr. Marshall, R.A., to be utterly ashamed of the Academy's position as regards the art of sculpture. There is probably no other art—not even the dramatic art—which is in such a hopeless condition. In the face of this it may seem ungrateful to M. D'Epinay to take objection to anything. Still, I cannot help thinking, that if the left hand had been as energetic as the right hand, or if the talons had a very little more hold on the flesh, the struggle between Carthage and Rome would have been more truly indicated. I have only space to note the grand action of the group—which, like all grand actions, look well from every point of view—the truly feathery feathers, the expressive clutching of the toes, and the admirable rightness of the eagle's beak, all the more grateful to us because of Sir Edwin Landseer's strange shortcoming in this particular feature.

Altogether the exhibition does not seem to me to show that marked improvement in the arts which many would have us believe. There are far handsomer rooms, far larger canvasses, much better hanging; but, with some few brilliant exceptions, the paintings are not up to the mark of former contributions. Sculpture is as moribund as ever; and architecture, though the most progressive of the arts, has been almost literally turned out of the house.

The Somerset Archaeological and Natural History Society will this year assemble at Axbridge, in the vicinity of which town are bone caves, and other objects of interest.

## THE LAW COURTS AS THEY ARE TO BE.

IN our last issue we stated that Mr. Street's design for the Law Courts on the Thames Embankment was already prepared. The plans, as we then said, involve a disposition to a large extent new, and they are accompanied by a lucid and straightforward report, in which the architect of the new building, after a careful examination of both sites, gives his decided verdict in favour of the Embankment; and perhaps this verdict is all the more valuable from the circumstance that Mr. Street is not understood to have shared in the first instance the views of those who, like Sir Charles Trevelyan, proposed and promoted the change of site which we have advocated. It cannot but be gratifying to ourselves to find the side which we have consistently supported receiving the adhesion of one who has the best opportunities of fully judging the whole matter, and in whose judgment so much confidence is so deservedly placed.

Mr. Street has prepared a block plan, showing the building on the Embankment, with its approaches and surroundings; and ground and principal-floor plans of his design. He has also prepared a plan to show how the already purchased land may be used for the New Courts of Justice without the purchase of any additional land whatever, and has in the report fully described the advantages and disadvantages of both. He begins by pointing out that his original design, as approved by the Courts of Justice Commission, cannot be carried out upon the Carey Street site without large additional purchases of land, and that many departments which it had been proposed there to provide for must be excluded, if the area to be covered with buildings is so small as is now proposed; so that whichever site be adopted, an entire revision of the design becomes equally necessary. And he then proceeds to explain his two designs, commencing with the design for the Embankment, and dividing his examination under the headings of—approaches and surroundings; light, quiet, and air; arrangement of the building, as involved by the nature of the site; levels; advantages, or the contrary, from an architectural point of view. We will try to give some idea of what is said relative to the Embankment design:—'The approaches to the building, as shown on the block plan,' observes Mr. Street, 'are many and admirable. They possess the merit, which cannot be too much dwelt upon in the case of such a building, of being not only ample for the purpose, but of being such as would be for the most part free from all noisy traffic, except that which is coming to the building itself.' The Embankment roadway and the railway and the steamboat access, are naturally first noticed, and we are glad to find that the suggestion first publicly made in these columns of moving the proposed railway station to the foot of Essex Street is intended to be carried into effect. Between the new building and the Temple a new and wide street, running from the Strand to the Embankment, is to be formed, in part coinciding with Essex Street; and this street it is proposed to prolong—as Sir Charles Trevelyan has uniformly urged should be done—across the Carey Street property, as a direct north and south thoroughfare. Howard Street, on the north of the Courts, is to be widened, and a street is to be formed between the building and King's College. We may add, what Mr. Street does not add, that whenever this street is formed the mean back of King's College and its chapel, propped up on iron posts, will loudly call for some architectural improvement.

The terrace in front of Somerset House is to be used as the judges' access to their courts, being nearly on the level of their own rooms, thus converting, as we said last week, a great difficulty into a convenient appendage. As a further approach, a bridge over the Strand is suggested, giving access from Lincoln's Inn to the principal floors of the building, also a tunnel under the new Essex Street, giving access from the same quarter to the ground floor of the Courts. A bridge to the Temple can be readily constructed crossing New Essex Street; but, on the other hand, owing to changes which have had to be made in the levels of the buildings on the Carey Street site, 'The barristers from the Temple and Lincoln's Inn could not have the bridges originally proposed for their use' for access to the Carey Street building. This modification in accessibility goes very far towards reversing the conditions of convenience of the two sites, even as regards the existing legal quarters of London.

The real measure of the distance between one site and the other is the distance from the centre line of the Central Hall in Carey Street to the centre line of that on the Embankment. This is 942 ft.—three minutes' walk, or thereabouts, at the easy rate of 3½ miles an hour. The Courts on the Embankment will be 2 furlongs and 47 yards from the SE. angle of Lin-



coln's Inn Fields,  $1\frac{1}{2}$  furlongs from King's Bench Walk, Inner Temple, and exactly half a mile to Doctors' Commons. The distance to the Houses of Parliament is not given; indeed, singularly enough, the great advantage which facility of communication along the Embankment between Westminster and the Courts will give, has been all but overlooked by the advocates of the removal. It was not noticed in the debates, and yet to counsel who are members of Parliament, or who practice before Committees of the House, to solicitors who are also Parliamentary agents, and to many others, this facility is most valuable.

Lastly, Mr. Street shows that on two sides (the east and north) Government, by recasting the existing streets, will have the character of the surrounding buildings entirely in their own hands; adding, that on the King's College side 'the singularly lugubrious character' of that edifice is the only ground for complaint, but that no inconvenience or nuisance can be expected thence, while the vast space of the Embankment, the Thames, and the Temple Gardens, will wonderfully benefit the whole building. 'To conclude,' says Mr. Street, 'it is difficult to conceive a public building being erected on any site in London with greater advantages in its surroundings than this site affords.' Sir Charles Trevelyan himself could hardly wish more said.

Light, air, and quiet, are briefly stated to be most satisfactory, and such annoyances as might rise from the railway being reduced to a minimum by its station being underground and shouldered out of sight, so to speak, by a big tower, the advantages of the site in these respects are recognised as so great that nothing is left to desire.

Turning now to the building itself, we find that naturally Mr. Street has felt it necessary to rearrange the whole scheme. The original principle of separating the Courts from the offices by internal streets and quadrangles has been still kept in view, and the arrangement of the Courts and rooms connected with them is substantially the same that it was in the plan approved by the Commission, but the small internal areas for lighting the rooms below the Courts have been made larger, and the jury rooms and staircases and lobbies have been improved. The broad feature of the present plan is that the Courts, Central Hall, and all the rooms for juries, witnesses, and the public, are massed on the western or Somerset House side of the site, some of the offices—*e.g.*, Vice-Chancellor's Chambers—being included in the upper and lower floors of these buildings, while the great group of offices runs round three sides of a large quadrangle on the eastern or Temple side, the quadrangle being virtually open towards the river, as a grand semicircular colonnade or loggia which forms the southern entrance to it will not impede light or air.

The western portion of the present design resembles very closely the core or heart of the old Carey Street design; the central hall being, however, two bays shorter, and eighteen courts being provided instead of twenty-one. The eastern portion is entirely different. The oblong open quadrangle (its greatest length running north and south) here introduces a new feature, and secures the free access of light and air to the very heart of the building. As to the amount of office accommodation obtainable, Mr. Street holds out a hope that by judicious compression a great many departments may be sufficiently provided for in this large range of buildings.

The entrances have been so managed that, going in at various levels, many offices have the practical effect of being on the ground floor, which, on a level site, would have to use steps up or down, and the judges have no flights of steps or lifts to encounter.

As to the architectural treatment, Mr. Street—after referring to the high opinion he held and still holds of the merits of the Carey Street site *when completed, by the additional purchases* not now to be made, and the difficulties which he had dreaded in dealing with the Embankment, owing to its curved outline and the Somerset House Terrace, adds—'in working out the plan to suit the site, I think, as is so often the case in architectural designs, that the very difficulties of the case have proved in the end to be its greatest gains.'

Mr. Street has advanced his building to the line of Somerset House Terrace, and it rises from the Embankment itself without any terrace. His parapets will be as nearly as possible on a level with those of Somerset House, while the raised portions of the building, the central hall, and the towers will be so removed from it as not to affect it. On the other hand, the curve of the frontage has given an opportunity for throwing forward all the eastern end of the building, and obtaining an irregularly broken line of frontage, though a very well-balanced one; and Mr. Street lays great stress on the benefit of this irregularity as affording means for effects of light and

shade, such as will be of great value in a building of this length, and as contrasting, to the advantage of both buildings, with the regular lines of Somerset House.

Lastly, the architectural effect of the building will be in no small degree enhanced by the many excellent points of view from which it can be seen. The near views of the detail which the Embankment will afford will be delightful, and from Blackfriars below or Waterloo above, the finest possible points of view will be found. Mr. Street's perspective study of the building shows it from Waterloo; and hence, not only the whole front will be seen, but the central hall rising above and crowning the structure and binding together the features of the composition; from many more distant points the gap between Somerset House and the Temple seems to call for such an enrichment of the skyline as Mr. Street's design will provide.

We regret that want of space prevents our following Mr. Street closely in his examination of the defects of the Carey Street site as at present standing, or examining in detail the gallant effort he has made to make the most of it. We believe Mr. Street has honestly done his best to fit his building upon this site, and we are sure that nothing more damaging has been said by the friends of the Embankment than what Mr. Street here says in reference to this part of his undertaking, taken in conjunction with the careful plans he has produced.

In approaching this part of the subject, it becomes necessary to refer to a plan and pamphlet showing an impracticable mode of utilising this site, which have been put forward by the Incorporated Law Society, which according to the simple, though somewhat caustic, statement of Mr. Street, do not establish the claim of that body to speak with authority on matters of architecture. The dexterity rather than the integrity which characterises the pleader has been aimed at by the legal surveyors, the plan which they put forth shrinking in one direction and expanding in another, like a witness when subjected alternately to the bullying of a hostile counsel, or to the mild leading questions of a friendly advocate. Unfortunately for the case of the Law Society Mr. Street has a *locus cross-examinandi*, and the imaginary legal plan turns out to be not only 'misleading,' but positively 'incorrect.'

Passing by this, however, we find that Mr. Street's view of the land already purchased is, that it is a site which puts the greatest difficulties in the way of a satisfactory plan; that it will be absolutely necessary to alter the adjoining streets in order to get any access to it at all, and that all the property facing or adjoining these streets is of the most incongruous description, and if not now purchased for rebuilding, is such as it would become imperatively necessary to purchase and rebuild at some future time, when proximity to the Courts shall have given it a higher value than it now bears. In respect of light, air, and quiet, he adjudges the Carey Street site to be deficient.

The actual arrangement of the design for this site shows the Courts and their Central Hall on the northern portion, and the offices round a quadrangle next the Strand, with a detached block, much like a fort, occupying the queer triangular space to the west. It was a direction to Mr. Street to dispense with the many steps up to the Judges' rooms, so much objected to in his early design, and this he has done, sacrificing at the same time, as has already been said, the access by bridges from the Temple and Lincoln's Inn. He has produced, no doubt, a fairly convenient building, but one vastly inferior to that which he has shown to be possible on the Embankment. To the æsthetic advantages of the Carey Street site, with its great elevation and its fine opportunities for a sky-line, Mr. Street is not blind; but he believes that the diminished size of the work, and the absence of the lofty towers of the Probate department, will greatly lessen his opportunities for using these advantages; while other counterbalancing, indeed preponderating, benefits are found in the situation of the building where it can be so well seen as it will on the Embankment.

We may add, that the vistas down the various streets from the Strand afford opportunities for fine effects, of which we hardly think Mr. Street has made full use. If, for example, in working out his northern façade he can bring the centre of it to coincide with the centre of Norfolk Street, the view of that feature down this fine wide street would have a peculiar charm. This, however, may be well left to the judgment which has secured and combined so many other advantages in a design, the adoption of which we may now count as certain, and the erection of which will confer a new ornament on the Metropolis, and increase the credit enjoyed in Europe by the architecture of England in the nineteenth century.

## OUR RAMBLER

AMONG THE BRONZE MONUMENTS IN WESTMINSTER ABBEY.

A RAMBLE in Westminster Abbey! Does there not seem something incongruous, irreverent, almost sacrilegious, in the expression? Is it not too sharp a contrast between the shadowy antiquity of the days when kings built cathedrals and founded chantries *pro animarum salute*, and the strong gas light, or magnesium light, or electric light, of the full nineteenth century?

But if there be such a discrepancy, it is in the name alone, not in the actual character of our grateful task. And the blame, if blame there be, must be laid on the poverty of the English language; which, out of its 43,566 words, can not provide us with a satisfactory substitute for the term that we have prefixed to the species of descriptive article, for their kind acceptance of which we have to express our gratitude to our readers.

The Rambler desires to adhere to a modest impersonality, contented with the function of describing, so far as is in his power, scenes of ancient, or of permanent, interest to the readers of the ARCHITECT. He could hardly otherwise forbear to intimate the existence of special and powerful reasons binding him, more than most men, to love and honour the very shadow of the Abbey Church of St. Peter.

Hat off, therefore, in every sense, did he devote a morning within the present week to the careful examination of a subject which has taken no slight hold of the public mind. No man who cares for archæology, for architecture, or for art, can fail to take an interest in the subject of the recent operation on the tomb of the Countess of Richmond. And the moment seemed thus most opportune for a general survey of the bronze monuments contained in the Abbey.

The materials for the study are ample. The time during which they have been collected extends over a period of 356 years, from the assumed date of the effigy of King Henry the Third, A.D. 1272, to that of Villiers, Duke of Buckingham, A.D. 1628.

The character of the work employed by the artists of the bronze tombs and effigies differs in method no less than in excellence. Thus we have brass founding proper, beaten and riveted work, chasing, pouncing, and enamel of extreme beauty. The art of the sculptor, the engraver, the worker in mosaic, and even of the jeweller, have all been brought to bear in adorning some of the splendid monuments of kings and queens, and illustrious subjects of the English crown; who are commemorated on the gilded bronzes of Westminster Abbey.

Of course, we are not now about to speak of what are ordinarily termed brasses. A few of these are yet unplundered in the Abbey; two very fine ones, dating in 1397 and 1399, adorning the low, square-built tombs of Robert de Waldeby and of the Duchess of Gloucester, in the Chapel of St. Edmund. We confine our special attention to the effigies proper—figures in the round, *bull*, or cast, in bronze, and for the most part, as far as inspection is possible under their present pall of dust, originally gilded.

The first remark which strikes the observer with unexpected force is, that the most ancient of these priceless monuments are also by far the most beautiful. Few things in sepulchral sculpture, in or out of the Abbey, surpass the tranquil, dignified, natural beauty of the effigy of Queen Eleanor of Castile, A.D. 1290. That of King Henry the Third, the second founder of the Abbey, is hardly inferior. That of Aymer de Valence, Earl of Pembroke, A.D. 1296, although the face is rude and almost archaic, shows a skill in beaten work, in chasing, in the delicate *appliqué* work of the coronet, or rather diadem, that surrounds the helmet, and which was formerly adorned with jewels, and above all in the enduring enamel, which proves that the artificers of the latter part of the 13th century were artists of a very high order of merit.

It is by no means every visitor to the Abbey who is aware of the existence of the effigy of King Henry the Third. It lies on the top of a double altar tomb, a sarcophagus piled on a sarcophagus, in the centre of the north side of the Chapel of King Edward the Confessor. These coffers were overlaid with coloured marble and rich mosaic, most of which has disappeared. But the pure tints and high polish of the slabs that remain—serpentine of the colour of malachite and red Egyptian porphyry—are uninjured by the lapse of time. So is the still extant mosaic covering, the greater part of which is to be found on the north side of the upper part of the tomb, in which the undimmed brilliancy of the gold, and the general enamelled effect of the *tessece*, are as fresh as in the work of the Prince Consort's Memorial, now so near completion. Had the tomb of King Henry the Third not been *peeled*—whether owing to want of adhesiveness in the original cement, or (more probably) to the cupidity or violence of those who failed to reverence its sanctity—it would still be as fresh as when it was raised. It cannot be denied that this observation has much weight with reference to the degree of care, or of cleansing, which it will be proper to bestow on monuments of this description.

Twisted columns, overlaid with mosaic, stood at each angle of this tomb, as was also the case with the shrine of the Confessor. The splendour of these inlaid, gilded, ornate, monuments, must have been highly imposing, and the application of the same style of columnar protection, and of mosaic decoration, to the tombs of the Founder and of the Restorer, was no doubt intended by the latter to mark a joint claim on the gratitude of England. On the top of the upper coffer, or member of the tomb, lies the gilded bronze effigy of the King, the form and features perfect, the gold still gleaming from the unsoled sock, or shoe, but the whole covered with such a thick coat of dust

(except where the metal seems almost to effloresce in some mode of slow decomposition on the robe), that it is impossible to say more as to the details of a very fine and careful work. The ceiling over the tomb has lost all adornments of carving or of gilding, and is reduced to the state of a few old boards.

One thing the Rambler felt to be undeniable. The statue of King Henry III. ought to be dusted.

The tomb of Eleanor of Castile, Queen of Edward I., dating A.D. 1290, is a coffer, or altar tomb of wrought stone, surmounted by an effigy in gilded bronze. The canopy, or tabernacle work, that divides the sides of the tomb into compartments, is remarkable for the triangular pediments, which, with trefoil perforations beneath them, shelter five escocheons on either side; the tomb, however, being built so close to one of the pillars of the chapel as to hide about a fifth of the length. These escocheons bear the lions of England, then increased to three, the quartered arms of Castile and Navarre, and the bends and bordure of Ponthieu; Queen Eleanor being a descendant of that very Count of Ponthieu who seized Harold on the shores of Normandy, and whose ransoming the Saxon chief to William of Normandy led to the famous oath on the relics, and, later, to the battle of Hastings. Through Queen Eleanor, Guy of Ponthieu was an ancestor of English kings.

The inscription inlaid around the upper ledge of the tomb is in Gothic thirteenth-century letters. The slab is entire, cast in one piece; not in two, like that of some later tombs. The face is very beautiful, the hair flowing from under a crown adorned with large *flours-de-lys*. The hands are extremely delicate, the left half closed on the bosom, the right extending its taper fingers to hold a sceptre which has vanished from the dainty grasp. The pillow on which the head rests was chased with the arms of Castile. There are cherub heads as corbels to the gilded canopy, or baldachin, which lies on the slab of the tomb above the head, in the relative position which would be occupied by a canopy over an erect figure. Oak leaf cherubs also adorn the carved ceiling over the tomb. The figure is defended, on the outer or northern side of the chapel, by a wonderful wrought iron grille, and is perhaps the sole monument which has been respected, absolutely, by all touch but that of Time, and but tenderly handled by Time himself. It is the gem of the ancient part of the Abbey.

Only six years later in date than the work of the Italian artist (Torelli, it is said, was his name) who wrought the two effigies above described, the monument of the Earl of Pembroke presents a singular contrast in the style, no less than in the beauty, of the work. The head, showing the face through the open part of a plain, unvisor helmet, is the only cast part of the figure, and the execution of the features is poor and almost shapeless. But round the helmet is drawn a beautiful coronet of embossed, or rather *appliqué* work, bearing marks of the setting of large jewels. The corselet, the armour for the arms and legs, as well as the hands, are all of beaten work riveted together—in fact, a suit of thin brass armour, made for the occasion. The pillow has been covered with enamel, and the colours are still preserved. On the left arm is a triangular, or rather heater-shaped shield, twenty inches long, covered with cloisonné enamel, almost or altogether perfect, and blazoned with the coat, barry of 28, argent and azure, 19 martlets, gules in orle. The tinctures are diapered over with gold. The figure lies on a wooden tomb or coffer above the stone altar tomb, and it is on record that much of this was formerly covered also by enamelled work or brass. Small enamelled escocheons still remain along the margin of the tomb, as witnesses of the splendour of the original work. The arms of Valence are correctly sculptured on the stone portion of the tomb, showing that the unusual number of bars and of martlets enamelled on the shield arose from ignorance or carelessness on the part of the enameller.

The tomb of King Edward the Third, on the south side of the Confessor's Chapel, is of carved stone, under a canopy of tabernacle work in wood, both greatly decayed. Side supports and canopy are affixed to the bronze slab. These adornments show what description of work has been broken away from the adjoining tomb of King Richard the Second and his Queen, where eighteen ugly holes gape around the effigies. The cushion has been stolen from beneath the head of King Edward, and the grim bearded countenance has almost an archaic aspect. Violence has not been spared against these monuments, although the later has suffered more than the earlier; a sign that the memory of the martial character of Edward the Third, though not strong enough to save from iconoclastic fury the images that were niched in the supports of his canopy, protected the effigy of that sovereign from the marks of dislike offered to that of his grandson. The workmanship of the later tomb, also, was originally inferior to that of the former, at least as far as the countenance is concerned. The diapered pattern on the robe of King Richard the Second is almost entirely concealed by a coat of dirt.

The above six figures, or five tombs, are all the bronzes to be found in the Chapel of the Confessor, and in that of St. Edmund. With the last of these, the monument of Richard the Second, we close the fourteenth century, the date being 1399. One hundred and ten years more bring us down to the time of the Countess of Richmond, in the south aisle of the chapel of King Henry the Seventh, the operations on which led to our present visit. About the same date is assigned to the unrivalled monument of the royal founder of that fretted tabernacle of stone, and of his queen; and two large and complex monuments—one to Villiers, Duke of Buckingham, in the north transept or side chapel, that opens from the central aisle or species of

chancel of this unique building; and the other, to Ludovic Stuart, Duke of Richmond, in the corresponding position to the south—close the list of the grand Westminster bronze monuments with the respective dates 1628 and 1623.

Of these two last-named monuments it is not possible, for the moment, to speak with much detail, as the gates of the inner chapels which they occupy are not unclosed without the special mandate of the Very Reverend the Dean, who, for the week, was not in residence. They are covered with a more dense and palpable veil of dust than any other objects visible, or rather invisible, within the precincts of the Abbey. It is almost impossible to distinguish the materials of which the figures are composed; only a small hole in the pillow of the Duke of Buckingham, and a finish, which is not that of marble, in the edge of the drapery of the weeping female figures that guard the chambers of Ludovic Stuart, giving assurance of their metallic character. The portraiture in each instance is good; the embossed armour, especially in the Richmond effigy, is very fine; and the figures around the tomb of Buckingham, notably one who rests his head on his sword, with an intervening cushion of upturned beard, are of a high order of merit. The floriated, open work, metal canopy of the southern tomb is apparently almost crushed by the weight of a tremendous Fame, trumpeting on the summit. The Duke of Buckingham's Fame, at the foot of his tomb, has lost her trumpet; which, if more than an allegory, would be all the better for the duke. Not the faintest glimmer pierces the dust to tell whether these monuments have been gilded. They are worthy of more minute inspection.

Properly to describe the superb monument of King Henry the Seventh and his Queen would exceed our limits. The perfect and uninjured tomb, with its highly relieved medallions, its supported escocheons at head and foot, its four boy-angels seated on the corners, and its serene, noble, faithful effigies, has been happily preserved by the lofty and ponderous screen or tabernacle which surrounds it. Over each of the bronze gates in this grille, one north and one south, and again at either end of the structure, a gigantic crowned rose projects as a lamp, in which, no doubt, it was designed that perpetual light should burn in honour of the departed. But the thirty-two saints and angels that stood, each in its canopied niche, around this magnificent brazen fence, have met with disrespectful usage, which it is a matter of unfeigned satisfaction to find thus diverted from the tomb itself.

A remarkable proof of the manner in which the iconoclastic fury, to which we must attribute the mutilation of the grille of King Henry the Seventh's tomb, was modified by some still lingering feeling of special reverence for certain saints among the assailants, is afforded by the few remaining effigies. St. George, the patron saint of England, is perfect, with the exception of his sword, being the only figure left at the west end. On the south side, St. John, whom legend connects with the founding of the Abbey, has lost only two fingers. The Confessor is untouched, and the gilding of the small canopy over his head is more brilliant than any other part of the grille. This, however, we believe to be a modern experiment. Beneath the Confessor, St. Bartholomew, who seems to have had some special claim on the veneration of the Londoners, has only lost his hands. The uninjured figure at the north end corner is no doubt St. James; but it may have been thought by the mob to represent the pilgrim who bore to the Confessor the ring from the Evangelist, as a somewhat similar figure is represented, together with the King in a closed crown, whom we take to be the Founder, on one of the medallions; and by the north gate is a statuette, in flowing robes, with the hands gone, and a sort of iron skull cap with a very narrow brim, representing a saint whom we are unable to identify. It can hardly be St. Edmund, as there is neither crown nor arms; why it should have been called St. Basil does not appear. The remainder of the statuettes necessary to the symmetry of the grille, together with some of the canopies and pedestals, have been violently broken away. The large hexagonally-pierced, open-work columns at the corners, are in good condition. Within the grille the tomb appears to be intact. Its design and detail are superb, and the effigies, guarded by the grille, and roofed by the rich fretwork of the chapel, may be considered, with the exception perhaps of some Egyptian marvels, the finest royal monument in the world.

It is only necessary further to refer to the tomb of Margaret of Richmond, mother of King Henry the Seventh, in the south aisle of the chapel founded by her son, the recent restoration of which has called for the present inquiry. Perplexity is not altogether banished by a visit to this monument. On the one hand, there is no doubt that much of the delicate work of the bronze effigies which we have described above is obscured by their present neglected state. Gold, again, is one of those materials which defies time though it does not defy cupidity; and there is nothing inconsistently modern in the gleam of gold. The tombs of the Founder and of the Restorer are defaced, not by the decay of the gold mosaic, but by its abstraction. In cleaning the effigy of Margaret of Richmond, therefore, we are to some extent brought close to the work of the original artist. But it is only to some extent. The face, head, and hands, are left untouched; they appear to have been originally painted, differing in this respect from the other effigies. They are now in the condition of what would be called fine old bronze—a condition which no one could attempt to modernise, to scrub, or to scale. Again, the fur doublure of the robe is left comparatively untouched, giving a dark contrast to the restored brilliancy of the latter. This doublure was also painted, as was the hood, and the white wimple under the chin. The least

satisfactory part of the work arises from the appearance of the copper through the gilding in many parts, and we are strengthened in the opinion which has before been intimated by the ARCHITECT, that an effective cleaning will be unsatisfactory, for more reasons than one, unless the portions cleaned be also regilded.

As to one thing, however, there can be no doubt. The next step requisite to be taken in the Abbey is the cleaning of all the monuments east of the nave by the simple process of dusting. We rejoice to see that, as a consequence, probably, of the opening of the nave for special religious service, that good work has been performed on the monuments in this part of the minster. The effect is most admirable. Some of our old acquaintances can hardly be recognised. No harshness, novelty, or any other unpleasant element of tone is introduced. The monuments do not look fresh or staring, but they are visible and often very beautiful when thus, almost for the first time, seen in their ensemble. The Minerva on the Fleming monument looks down from beneath the shadow of a helmet that reminds one of the Medici Chapel. Wordsworth seems to listen to the echo of the organ. If to the Chapel of the Confessor, of Henry VII., of St. Edmund, and in fact to the whole of the Abbey east of the organ-screen, there be extended the same careful and proper method of removing long-neglected dust and dirt that has been so successful in the nave, we shall be able to see in what state our royal bronzes actually are. It may seem almost superfluous to add that this tribute to ordinary decency must be paid before we are in a condition to discuss the propriety of any more severe treatment. It is possible that in different cases different rules may be found to apply. For instance, the treatment of the knots, the portcullises, the eagles, the crowns, and the repetitions of the H's, that ornament the brazen gates of the chapel is one thing, that of the perfect effigy of Queen Eleanor another. When dust is gone, we can say more about the state of decay and decomposition. Preservation is our just duty, but dust does not preserve; on the contrary, there is reason to believe that it exerts a sensibly destructive power when long undisturbed. Let the bronzes of Westminster be now, for the first time within our memory, unveiled; and it will then be possible intelligently to inquire what further tendance they may claim of those who would preserve them.

#### THE NEW OPERA HOUSE, PARIS.

THE late discussion on the extraordinary Budget has put the public in possession of the facts of the case of the New Opera House.

The statement made by certain members of the Opposition was that the total cost of the building, including site, &c., would be 48,000,000 f. (1,520,000 l.); the official statement in reply was substantially as follows. Ten months after the acceptance of the plans of M. Garnier, the estimates were prepared, and amounted to 29,000,000 f. M. Walewski, then Minister of State, was alarmed thereat, and insisted that the amount should be diminished, and it was cut down to 18,000,000 f. As the works progressed, however, it was found that this sum would be totally insufficient, and the estimates grew gradually to 20, 21, and 25 millions. At each successive rise the matter was referred to the General Council of Civil Buildings, and each time the administration insisted that the amount should be kept down as much as possible. Now that the building was in a very advanced state, the cost could be given without hesitation or reserve, and it amounted to 31,000,000 f. (1,240,000 l.)

Amongst the causes of the increased expenditure was the discovery of springs which, said the Governmental commissioner, amounted almost to a river. Of course the water had to be pumped out, and, in order to secure the foundations, it was necessary to excavate to great depth, and actually to construct a concrete pit of the extent of 11,500 metres. Next came changes in the plan, alterations in the disposition of the surrounding buildings to produce a harmonious effect; then the bold and novel arrangements of the interior caused a large unexpected outlay; and, finally, the construction of the building having been extended from five years to ten, the ravages caused by time and the weather had to be made good.

The height of the building, foundations included, is, it appears, about 235 ft., and the cost per metre covered just under 108 l., a rate considerably lower than that of the Madeleine or the New Louvre.

In the above account the purchase of the ground is not included, because the surplus which had been or which remained to be sold had risen so much in value as to cover the expense of the site.

Amongst the claims for admiration, rather a fantastic one, with respect to the New Opera House, is that it has been intentionally made a kind of permanent exhibition of the finest kinds of rare stone and marble to be found in France, and the following is the list of those employed:—Jasper, from the quarry of Saint Gervais, Mont Blanc; brown granitic porphyry, from the wood of Vauban; green porphyry of Tournay; red granitic porphyry of Planoise; porphyritic granite of Saint Martin du Puy; micaceous granite of Lormes; coral red syenite, from the top of the Thom at Servance; syenite of a dead leaf colour, from Ménil, Servance; porphyritic granite, from Mount Corau; blood stone marble of Sampans in the Jura; violet marble of Sampans; Damparis stone (called Saint Yele) from the Jura; white jasper stone of Damparis; stone called *l'Echillon*, from Revon, Isère; white ditto, from Saint Quentin; pierre d'Anstrude, and several kinds of soft stone from the department of the Yonne.

All these materials have, it is said, been selected with great care and tested with respect to their power of resistance; the jasper of Mont Blanc, of which the columns are made, is reported to have yielded extraordinary results—a block weighing 2716 kilogrammes bore weights equal to 1830 kilogrammes per square centimetre.

The Great American Artist, Hiram Power, who is at present in Florence, has modelled the features of Mr. Longfellow.



## QUEEN ELIZABETH'S GRAMMAR SCHOOL.

KINGSTON-ON-THAMES.

IN answer to an invitation that appeared in our columns some time since, about twenty-eight designs have been submitted in competition for the new building that the committee propose to erect in order adequately to accommodate the rapidly increasing number of scholars that the popularity of the present head master has attracted to this venerable scholastic foundation.

The history of this school dates back to ante-Reformation times, and many great men who have distinguished themselves in literature, politics, and art, have thumbed their primer in the fine old Gothic chapel that is now used as a schoolroom. It is thought by some that Turner, the great artist, attended this school. The records connected with this foundation contain entries of many valuable bequests made by some of the wealthy guilds of the City of London who still take an interest in the school.

The intended site for the proposed new building lies on the London road immediately opposite to the present school, possesses a good frontage, and extends backwards for some distance, allowing ample space for a large playground.

The twenty-eight designs above referred to have been, by the permission of the Mayor of Kingston, disposed along the walls and benches of the Crown Court. A more inconvenient and unsuitable place for such a display could scarcely have been chosen. In but few instances has it been possible to place all the drawings illustrating one design in a compact group along a single wall or bench, many drawings being separated by a considerable distance from the remainder of their set.

A few good men have responded to the invitation of the committee, but not in all cases with a happy result. As the school is dedicated to Good Queen Bess, we were surprised to find that so few had adopted the very effective architecture of her period, especially as the committee at one time proposed to include that style amongst the instructions to competitors. Of those who have employed Elizabethan architecture, only one or two seem to be 'at home' in it.

The cost of the new building is not to exceed 5,000*l.*, but some of the more elaborate plans have little chance of complying with this condition. A straggling plan necessitates a multiplicity of external walls, which mean money; and as the funds in hand are small, the more compact the grouping of the rooms, the better the chance of the committee's interests being advanced. Some of the competitors, possibly from not having visited the site and present school, have shown in their plan a chapel tacked on to the new building. After the scholars have moved into the new home that is to be provided, it is intended to restore the present school to its original use as a chapel, a renovation that could easily be effected at a moderate outlay.

We understand that the committee intend to call in the assistance of an architect to guide them in their decision; we have, therefore, every reason to hope that they will by that means be protected from fictitious estimates and costly plans, whilst those competitors who have adhered to the instructions will be fairly treated.

## THE STRIKES.

A STRIKE or lock-out of the Manchester bricklayers and labourers has been prophesied for this week. The masters insist upon payment by the hour instead of by the day or the week, and to this the men object. The latter require the oldest labourer to 'carry first,' and the masters insist that it shall not be the oldest, but the best. The men require that there shall be one labourer to one bricksetter, and that bricks shall not be wheeled in a barrow, but be carried in a hod; but the masters declare that they will not employ more labourers than there is occasion for; and that, where work is on a level and ladders are used, they can economise by using the barrow rather than the hod. Eight hundred labourers met on Wednesday, the 26th ult., when they unanimously agreed to insist on the 'man to man rule,' and to discard the wheelbarrow.

Late accounts state that there is every appearance of a continued strike among the masons. Both masters and operatives have issued circulars stating the terms upon which they will resume work, and these differ so materially that there is little hope of a speedy settlement. About 200 non-union masons continue at work, a number of them being employed in the construction of a new foundry near the Great Float, Birkenhead, and at the works at the Sefton and Stanley Parks. The masters are making efforts to get more non-unionists. The following figures have just been published by the secretary of their trade society. List of the towns still on strike, with the number of masons out thereat:—Birmingham, 30; Cheltenham, 3; Liverpool, 18; Manchester, Hulme, and Salford, 294; Oxford, 2; Sunderland, 8—total, 355. The following are the numbers locked out:—Bolton, 18; Coventry, 6; Liverpool, 334; Leeds, 105; Lymm, 4; Old Swan, 12; Wakefield, 9; Wolverhampton, 10—total, 525.

Halifax and Wigan have to be added to the list of towns in which strikes have been commenced by operatives connected with the building trade. In both towns the hour system, the adoption of which the master masons insist upon, is the principal question in dispute, and the operative masons, both in Halifax and Wigan, having refused to work by the hour, a lock-out has taken place in each town.

The *Manchester Examiner* reports that one dispute in the building trade has been settled by arbitration. The Wigan joiners claimed an advance in their wages of two shillings a week, and were able to show clearly that the rate of payment in that town was below the amount received in neighbouring places. The disputed point was left to the arbitration of Mr. Alderman Cross, as well as a question as to overtime, and another as to the limitation in the number of apprentices. The arbitrator's decision has just been given. He allows the men an advance equal to 1*s.* 9½*d.* per week, and abolishes the rule as to the limitation in the number of apprentices. The decision is binding, and by its acceptance a strike will be avoided.

We learn from Horncastle, in Lincolnshire, that the bricklayers of that town struck work some time ago for an advance of 2*s.* per week. The

masters had to comply with their demands, and this week the labourers have done the same, but the masters are holding out—as some of them are at work upon contract jobs which will not allow of the extra wages being paid, without serious loss.

## ILLUSTRATIONS.

WEST DOORWAY, CATHEDRAL OF SANTIAGO DE COMPOSTELLA.

IN THE ARCHITECT of May 8 there was given a general drawing of this portal, which forms the inner doorway of the western porch of Santiago Cathedral, in Galicia. A cast of the portal, in its entirety is now in the collection of the South Kensington Museum.

The porch, locally called the 'Portico de la Gloria,' is vaulted in three bays, corresponding with the respective widths of the three entrances; the north and south bays are nearly square, the centre a double square; all three being groined with quadripartite vaults. In the middle of the last century, when the whole of the western front of the cathedral was rebuilt, the external face of the porch was cut away to give place to the new outer doorways, only the shafts, taking the longitudinal and diagonal ribs of the vaulting, being preserved.

Through the courtesy of Mr. Street, and Mr. Murray the publisher, a view of the interior of the porch is given with this description. It is taken from Mr. Street's well-known book on the Mediæval Architecture of Spain. It may here be stated that the discovery, as it may be termed, of this monument by Mr. Street, first drew the attention of the authorities at South Kensington to the beauty of the work, and suggested the idea, since so well carried out, of acquiring a cast of the doorways for the benefit of the Museum.

We are able accurately to ascertain the name of the artist who conceived and executed this splendid work, as well as the date of its erection, thanks to an inscription engraved on the soffit of the lintel spanning the central doorway, and which runs as follows:—

'ANNO AB INCARNATIONE DNI. M<sup>o</sup> C<sup>o</sup> LXXXVIII<sup>o</sup> ERA I<sup>a</sup> CCXX<sup>a</sup> VI<sup>a</sup> DIE K-L APRILIS SUPERLIMINARIA PRINCIPALIU PORTALIU ECCLESIE BEATI JACOBI SUNT COLLOCATA PER MAGISTRUM MATHEUM QUI A FUNDAMENTIS IPSORUM PORTALIUM GESSIT MATHEUM.'

'In the 1188th year from the Incarnation of Our Lord, the 1226th of the Era of Spain, on the day of the Calends of April (April 1st) the lintel-stones of the main portals of the church of the Blessed James were laid by Master Matthew, who carried out the works on the said portals from the foundations.'

Noteworthy in this inscription is the redundancy of dates, a case of very frequent occurrence in inscriptions, charters, deeds, &c. executed in the Middle Ages. The second date given in this instance (1226) is the year of the era of Spain. The Spanish era, founded on the Julian Calendar, was created in the year 38 B.C., and was a consequence of the conquest of the country by the Romans. It was also adopted in Portugal, Africa, and in the southern provinces of France, and was not abolished in the western portion of Spain till the beginning of the fifteenth century. (Sir H. Nicolas, 'Chronology of History.')

The only other facts concerning the architect that have come down to us are, that in 1161 he built the bridge of Cesures, in Galicia, and that in 1168 he received a pension from Ferdinand II. in recognition of his services as master of the works to the Cathedral of Santiago (Cean-Bermudez, 'Arquitectos, &c.' vol. i. p. 33). The kneeling figure looking east, at the base of the central shaft, is, according to local tradition, the effigy of 'el maestro Mateo.'

The three bays of which the portal is composed are spanned, as will be seen in the elevational drawing, by semicircular arches, the smaller ones having two orders of mouldings, the great central one having three. The latter is filled from the springing by a tympanum, supported on a central shaft, and on corbels at the sides.

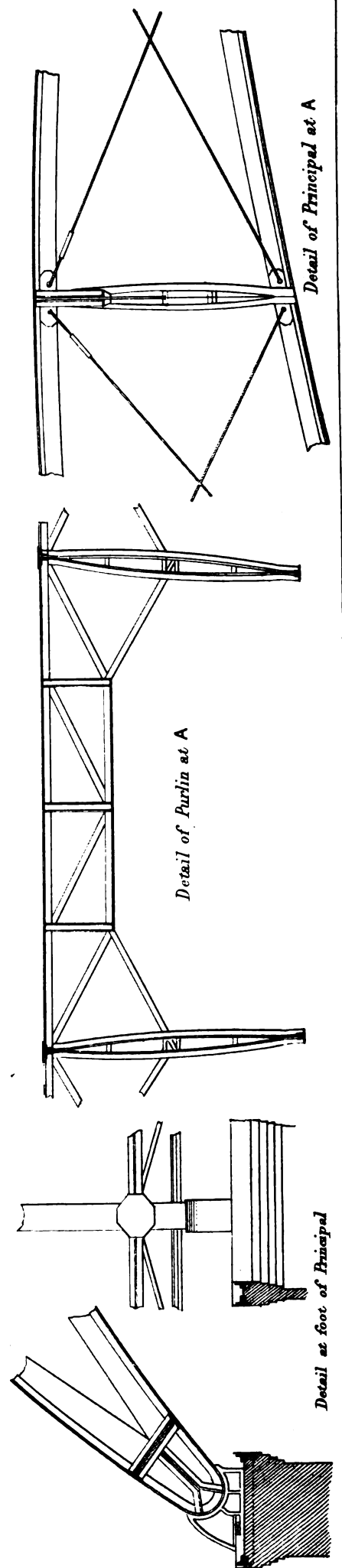
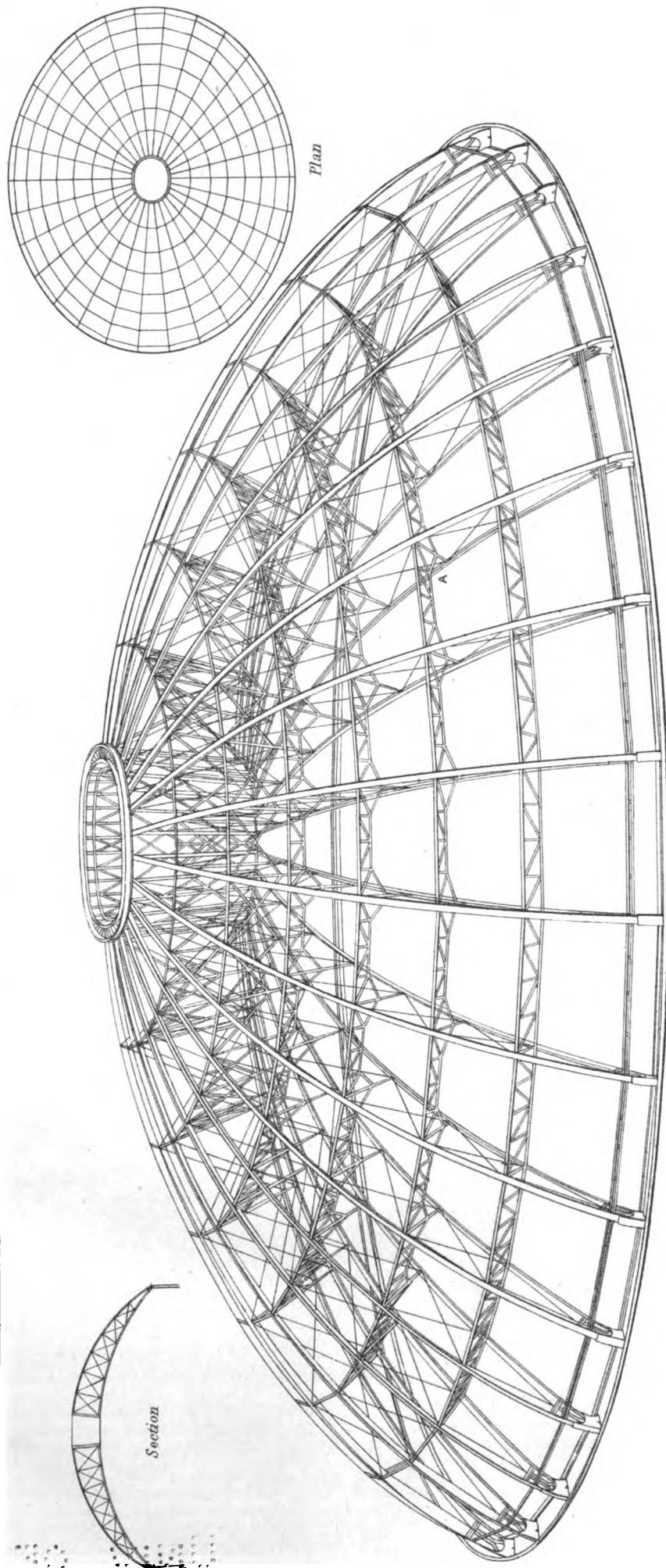
The whole of these arches are crowded with figure sculpture, forming one great scheme of iconography illustrative of the Last Judgment. In the tympanum is a colossal figure of Our Lord in glory, seated on a throne and showing His wounds. He is surrounded by the four Evangelists, all represented as young and beardless, supporting the emblematic Beasts on their knees and writing their Gospels, except in the case of St. Matthew, who is here shown with wings, thus combining in his own person the Emblem and the Evangelist. This central group forms the subject of the lithographic illustration given in the present number. It is to be remarked that the usual order in which the Evangelists are placed is here inverted, St. John and St. Luke being to the right hand, and St. Matthew and St. Mark to the left of Our Lord. On either side of the Evangelists are angels holding the instruments of the Passion; those to the north the pillar, the cross, and the crown of thorns; those to the south the spear and the nails (in this instance four), the ewer and scroll, the scourges, and the reed and sponge. Above these, in two lines, are crowds of little figures in adoration, some holding books and scrolls, to which they point. They probably represent the 144,000 mentioned in the Book of the Revelation. Many are crowned, others are receiving crowns from angels above. At the top of the tympanum, on either side of Our Lord, is an angel censuring.

The enclosing semi-circle is formed by the figures of the twenty-four elders, all seated and crowned, with stringed instruments of music in their hands; eight of the elders are also holding 'vials full of odours, which are the prayers of saints.' (Rev. v. 8.)

At the springing of the vaulting ribs are figures of angels disposed as follows: two on either side of the central door, having in their

UNIV. OF  
CALIFORNIA

Architect, June 5<sup>th</sup> 1869.



J. Fowler & Son, Arch.

Printed by W. & A. G. Longman, & Co., London, E.C.

ROOF OF THE ROYAL ALBERT HALL OF ARTS AND SCIENCES, SOUTH KENSINGTON.  
LIEUT. COL. SCOTT R.E., DIRECTOR OF WORKS.



CENTRAL GROUP  
IN TYMPANUM



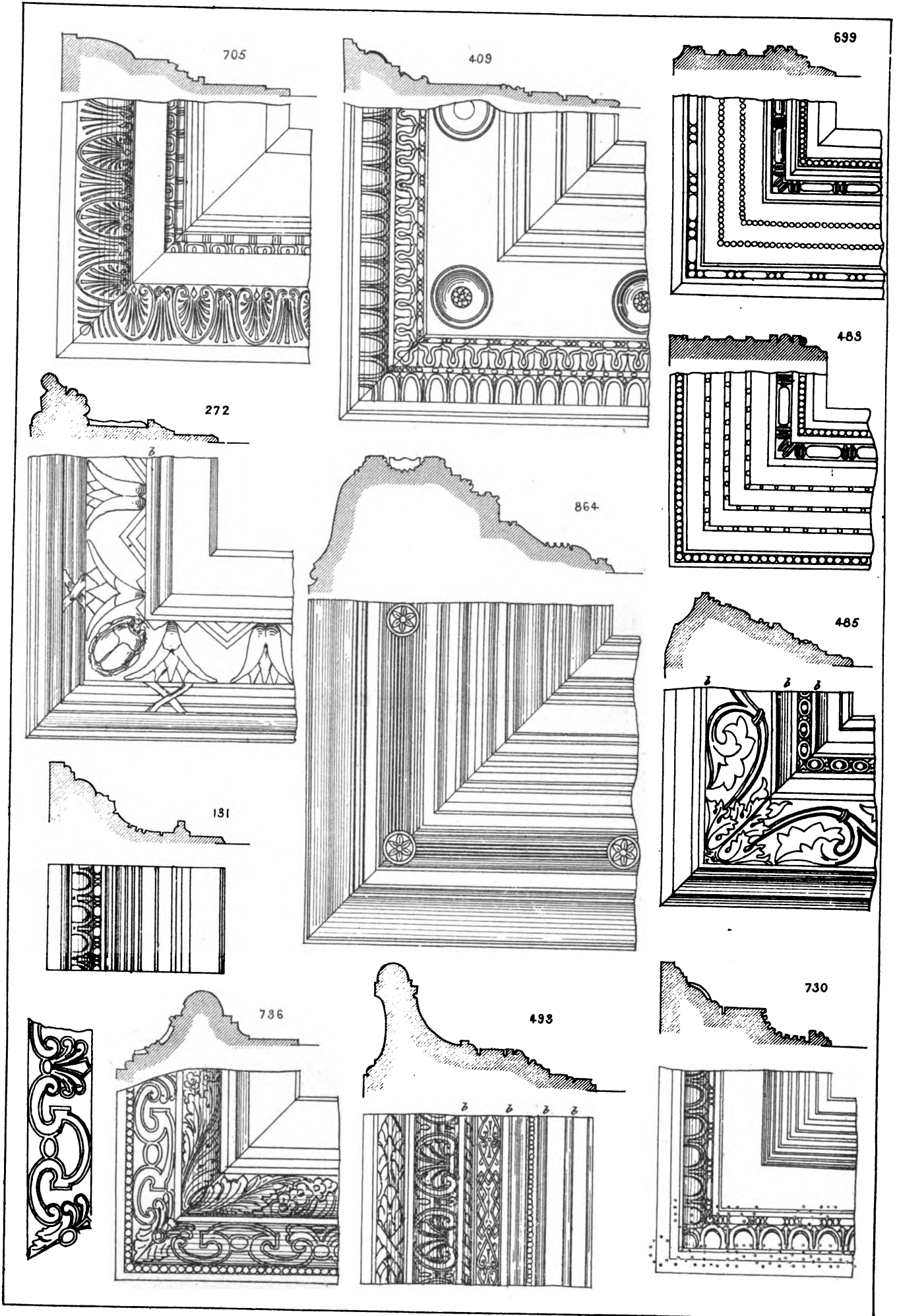
SANTIAGO CATHEDRAL - WEST DOORWAY.

DRAWN AND LITHOGRAPHED BY H.W. LONSDALE, FROM THE CAST AT THE SOUTH KENSINGTON MUSEUM.

NO. 1000  
1900



ROYAL ACADEMY FRAMES 1869 N<sup>o</sup> 2.  
SCALE  $\frac{1}{4}$  FULL SIZE.



LETTERS *b. b* indicate parts which are burnished

Printed by W.W. Spangha & Co. London, F.C.



no will  
submit



arms or at their sides little naked figures representing the souls of the blessed; opposite each of these, on the other side of the vault, a group consisting of a seraph in the middle with an angel on either side, all in adoration and holding scrolls; and, at each of the four corners of the porch, an angel blowing a trumpet. On the side of the porch shown in the drawing, the springing of the diagonal ribs of the two small bays is not decorated with angels, but is masked by the wings of those at foot of the longitudinal ribs.

The archivolt of the north side-door is composed of two orders of mouldings, both of which are richly decorated with sculpture. The outer rim contains a number of little figures seated and bearing labels, alternating with leaves; the inner also contains numerous small figures in a thicket of foliage, the central one of which appears to be in the attitude of benediction. The whole is probably intended to be a representation of Paradise.

The southern side-arch is also of two orders, both deeply hollowed and filled with carving, the subject of which is the Act of Judgment. At the crown of each rim is a head, and two hands with scrolls; the upper being the head of Our Lord with a cruciform nimbus, the lower that of an angel, probably St. Michael. On the left hand, both in

the hollows and in the label, are shown the souls of the damned tormented by demons and serpents; on the right, angels bearing the souls of the blessed; some of these latter are also seen in the label in attitudes of adoration.

The central shaft, supporting the tympanum, is composed of a cluster of six columns, and rests on the prostrate figure of a man embracing two monsters, into whose open jaws the Galician peasants have a custom of throwing a handful of sand before entering the church. The front column of the shaft is decorated with a figure of Santiago (St. James Major), in whose honour the church is dedicated. He is seated on a throne, the feet of which rest on lions, and holds in his right hand a scroll, in his left his usual attribute—the palmer's staff. In the original doorway he has a nimbus enriched with jewels, which is not given in the Kensington cast, and which Mr. Street, in his work on Spain, supposes to be an addition of a later date. The short column supporting the statue of the patron saint is historiated with the genealogy of Christ. In the capital is a representation of the Trinity; the Father supports the Son on His knee, the Holy Dove is seen in the abacus moulding above; while angels, two on either side, are offering incense. The main capital to



WEST DOORWAY, CATHEDRAL OF SANTIAGO. (FROM STREET).

the cluster of shafts is composed of subjects from the Temptation. The corbels that take the ends of the lintel are decorated with half-figures of angels with scrolls, the inscriptions on which, as in the west front of Chartres, being merely painted on and not engraved into the original stone, are naturally not reproduced in the cast. In this case, as well as in the rolls and books held by the prophets and apostles, these inscriptions are also for the most part either very indistinct, or only partially seen in the photographs on account of the perspective. This is much to be regretted, as it would be interesting to compare these inscriptions with those prescribed in Greek iconography, as set forth in Didron's 'Guide de la Peinture.' The eyes also of the figures are painted on, not cut into the stone; in fact, sufficient remains of colour have been found to show that all the statues were originally richly decorated in gold and colour.

The jambs that take the arches form a series of nooks filled with engaged shafts, all of which are carried up in two stages, the upper stage being enriched with statues supported on capitals, excepting the two shafts that take the longitudinal vaulting ribs; these are carried up plain without any interruption but that of an annulet moulding, which is continued all round the jamb, and ties in the

whole sheaf of columns. Three of the nook-shafts are richly decorated with spiral carving, and interlaced work with little men and animals chasing each other through the foliage; but in these, as well as in the capitals where figures and beasts are introduced, there does not appear to be any definite subject. The bases, ornamented in the spandrels with *griffes*, now in many cases nearly worn away, are elevated on a plinth carved into the likeness of lions, bears, dragons, and other animals, symbolical of the various vices.

The band of nearly life-sized figures, which encircles the upper portion of the jambs, consists, iconographically, of two groups: on the two northern piers and their responds on the opposite side of the porch are ranged the Prophets, who predicted the coming of Christ and the events of His life; on the southern piers the Apostles, who were witnesses of the fulfilment of the Scripture; the Old Testament thus being on the north and the New on the south side of the church, according to the almost universal practice during the Middle Ages. The apparent inconsistency in assigning the more honourable position, *i.e.* the right hand of Our Lord, to characters from the Old Testament, is thus explained by M. Didron:—'The right and left hands of the spectator entering the church determine respectively



the right and left sides of the building; except in the sanctuary and in subjects like Last Judgments in portals; here it is the Sovereign Judge who determines the right and left, and thus reverses the right and left of the spectator' (Ecclesiologist, vol. 18). The range of Apostles and Prophets seems therefore intended to form part of the general decorations of the church (doubtless originally further carried out in the painted glass, &c., on the same principle of placing the Gospel on the right and the Law on the left), the scenes carved in the arches above forming a subject complete in itself.

The series of the Apostles consists of eleven figures, including St. John the Baptist, and is disposed thus:—Commencing from the centre, and walking round the porch towards the right, we have first, St. Peter, in pontifical garments, his right hand raised in benediction, and having in his left three keys, expressing the dominion over heaven, earth, and hell; then St. Paul, with a book; St. James Major, with his pilgrim's staff and a scroll, *here* in his character as an apostle, and identical in features with the figure on the central shaft, which represents him as the Patron; St. John bearing a book; six apostles, four with books and two with rolls, whom it is difficult to identify, owing to the absence of attributes, and the illegibility of the inscriptions; and lastly, St. John the Baptist, carrying the Lamb, enclosed in a circular aureole. The prophets, again beginning at the centre, and proceeding towards the left, are:—Moses, with his rod and the tablets of the Law; Isaiah, Daniel, Jeremiah; six other prophets all with scrolls; and opposite St. John the Baptist, a female figure, crowned, and carrying a scroll, evidently intended for the Queen of Sheba in her character of one of the Sibyls, who, though themselves heathen, are said to have foretold the coming of Christ to the Gentiles. It will be remarked that the majority of the Apostles are shown with books in their hands, while the Prophets, with the exception of Moses, carry scrolls; this is owing to the circumstance that 'books, on account of their greater importance in size, and being also capable of containing more matter, were regarded as symbolic of the loftiest wisdom. The roll only (though there are many exceptions to the fact) was placed in the hands of the Old Testament Prophets, because they saw the truth but imperfectly and through the veil of metaphor, while the Apostles, to whom the truth was fully revealed, carry books.' (Didron, 'Hist. de Dieu,' Bohn's edit., p. 180.)

The absence of nimbi to all the apostles excepting St. Peter is accounted for by the want of the plain background on which the sculptors of that period were wont to carve the nimbus in low relief, it being correctly shown throughout the tympanum and in the south arch. The influence of Byzantine on Western art, which is so noticeable at Chartres (especially in the west doorway, erected in 1170, to which in many respects this portal bears great analogy), is exemplified in the present instance in a very marked manner by the honour paid to the personages of the Old Testament. A nimbus, perfectly similar to that borne by St. Peter, is given to Moses, and doubtless (as in the north porch of Chartres) the other prophets would have been distinguished in a like manner but for the material difficulty above mentioned. Then, again, all the prophets but two, who have sandals, are barefoot, a distinction accorded in Western art to none but God, the angels, and the apostles. St. Peter also, in his gesture of benediction, in raising only one finger instead of two, departs from the usual custom of the Latin Church.

The whole of the detail of this grand portal is of great beauty, particularly that of the capitals and the carving on the nookshafts. Above all, one is struck with the pure and noble expression of many of the heads, the most noteworthy being those of Our Lord, the Evangelists, and some of the angels. Little of the beauty of the original work appears to have been lost in the cast which has been taken by Mr. Brucciani. This gentleman was sent specially to Spain for that purpose, at a cost of 2,300*l.*, by the authorities of the South Kensington Museum, to whom a debt of gratitude is certainly due for thus bringing within the reach of all so fine a specimen of a noble period of art.

The main dimensions of the doorway were taken from drawings by Mr. Brucciani made on the spot, as the cast has not yet been properly put together at the Museum, owing to want of space. The details in the accompanying illustration, and of which it is proposed to give a few more in a future number, are drawn from the photographs published by the Arundel Society, and finished from the cast itself.

H. W. LONSDALE.

#### THE ROOF OF THE ROYAL ALBERT HALL.

WE give a view, with details and plans to a small scale, of the framing for the iron roof of this building, which was fully described in our last number. The roof is now being fixed, and the nature of its construction is well seen from the drawings, but want of space compels us to postpone a description of it.

#### PICTURE FRAMES AT THE ROYAL ACADEMY.

##### SECOND NOTICE.

CONTINUING our review of the frames of the Royal Academy Exhibition, those of Mr. Leighton come next under our notice. As we have before remarked, Mr. Leighton has always deemed it worth while to bestow the most careful attention and study on this feature; and the same refinement and knowledge of the best and most subtle forms of Greek art which are displayed in his pictures, enter also into the design of his frames. His first

in No. 377, the diploma picture, is a simple and plain frame demanding no comment. In No. 469, *Dædalus and Icarus*, the frame is divided into three divisions; the inner one is treated like the architrave of a cornice; thus giving those set backs which are so valuable as contributing to the apparent solidity of the frame. In order to accentuate the divisions of the three fascias, small grooves are sunk between them. In the marble temples of Greece, with the bright sun and clear atmosphere, the slightest projection would be sufficient to give a dark line of shade, and such grooves therefore would not be required to define the fascia of the architrave in a cornice; with a similarly moulded architrave, however, in a gilt frame, exposed only to a diffused light, they become very necessary, and it is strange that their value has not been more recognised in other frames.

The middle division of the frame is relieved by *patere*, round which a similar groove runs. The outer division, or border, has the ordinary egg and tongue, and the leaf ornament of the *Mecæthum* pilasters: the juncture at the angles, however, is not Greek, and inclines us to the belief that this beautiful border was executed at so much per foot. A Greek artist would have masked the corner and joint by a leaf.

None of Mr. Leighton's frames are burnished, and we think judiciously, as the 'surface mat' of the gilding harmonises better with his pictures.

In 705, '*Electra at the Tomb of Agamemnon*,' we have perhaps the most beautiful frame in the whole Exhibition; extremely simple and refined in its lines, it would be impossible to imagine any border which could agree better with the subject of the picture or with its treatment. In this case the ornament was probably painted after the frame was made; it is difficult, therefore, to understand why a better arrangement of the angle ornament has not been devised. This is one of those points, however, in which an amateur in architectural detail is sure to fail. In the picture, also, we notice a similar lack of knowledge. Mr. Leighton has been able to grasp the general effect of Greek work, and to represent pretty correctly the flutings, echinus, and abacus of a Doric column; but he has failed to represent or has forgotten the existence of the annulets of the necking, and, what is far more important, the necessary joint under the capital, which was always accentuated in Greek work. The effect of painted ornament on the gilded surface of the frame is very good, and might with advantage be more employed in other frames. Mr. Leighton's remaining frame (No. 864), though more elaborate in its mouldings, and showing even more study in its design, is nevertheless too heavy; the contour of the mouldings in section takes, instead of a concave, a convex form, which can rarely be pleasing, and the ogee curve outside the frame gives it additional bulk and heaviness. Still, the subtlety of design in the mouldings is beyond all praise; and were it not that the subject of the picture especially required a light frame, we should be inclined to place this one next to 705, as second in point of merit among the Academy frames.

Mr. Albert Moore's frames (483 and 649), though Greek in style, are very different in design from Mr. Leighton's; the frames of the latter are treated as if executed in ivory, marble, or its substitute plaster. Mr. Moore's are carved in oak, and the design is in accordance with the scope of the material. The mouldings are few, simple, and effective, and there is just as much ornament as is necessary to relieve them of monotony. No. 483 might have been a little smaller with advantage to the picture, and there is a slight confusion in the lines; this is, however, not the case in 649, in which every part of the ornament tells its tale, and the sparkling effect of the whole frame is delightful. Mr. Walker's frame (No. 485) is original, but lacks design in the contour of its mouldings, which in section form a straight line nearly; had there been a deeper concave moulding in the centre, one or two grooves to accentuate more the other divisions, and a plain 2-inch margin within, the frame would have gained considerably by such additions. Whilst we are in this room (VII.) we would call attention to perhaps the worst frame in the Exhibition. Mr. W. Linnell, in No. 461, has at length completed his fine picture of *Aurora in Romagna*. The Linnells' pictures, as a rule, do not appeal to our sympathies for their refinement; there is always a touch of vulgarity about them, more especially in their foregrounds and figures: but in this picture of Mr. W. Linnell's, the subject is grand, the figures solemn, characteristic, and, for a landscape painter, well drawn. We regret much, therefore, that he has not had the good sense to depart for once from the traditional frame of his family, and adopt one more in harmony with the subject of his picture. The frame is very large, and is covered with the most unnatural natural foliage we have ever seen; if ever an opportunity presented itself of displaying a little thought in the design of a frame, this picture would have offered a good field; and we are sorry to see that Mr. Linnell has not availed himself of it.

Mr. Armitage, in his picture of the *Sick Chameleon* (272), has a frame with Egyptian ornament; the contour of the mouldings is very good and effective, and the ornamental accessories are in keeping with the style employed. The sacred scarabæi are very appropriate, and fill the angles well, and the disposition of the lotus flowers is good. There is no one who would say, on looking at this picture, that the frame does not give additional interest to the subject. The costume of the figure is probably modern; but the ornament of the frame carries us back to the time when Egypt and her armies ruled the world, and when its beasts and reptiles were regarded as sacred in their symbolic representations of the mysterious attributes of the Deity. At the present day, instead of being cared for and tenderly nurtured, such a reptile would have been instantly killed on account of the superstitious feeling that it possessed an evil eye. Mr. Boughton's frame (No. 493) is apparently French in design, the inner mouldings recalling a foreign treatment. There is a want of repose in the ornament of the cavetto moulding, which detracts from the general effect; otherwise the picture is well enclosed in it, and isolated from all surrounding objects. In No. 736, Mr. Graves' frame resembles in its main form M. Portal's frame (No. 174), of which we gave a drawing last week. The ornament is very good in design, and is well modelled.

The Water-Colour Room is not conspicuous for its frames. They are all of them poor and weak, and display an utter want of design. In Nos. 628 and 549 are two frames with large and clumsy leaves round. Mr. Calderon



picture frame (No. 643) resembles Mr. Storey's No. 7, to which we called attention last week. The insertion of small sunk pateræ gives additional interest to the panel round. We notice that the gold margin here being under the glass does not count as part of the frame, which looks small consequently for the size of the picture. Mr. Clifford's picture, with its somewhat heavy colouring, required a good bold frame instead of a simple two-inch border without moulding or ornament. In Mr. Lehmann's picture (No. 862), a lady burning her love letters, an attempt has been made to bring the frame in accordance with the melancholy subject by filling up the interstices of the network border with black. As this has been carelessly done, and the ornament itself was defective in precision of modelling, the effect is extremely unsatisfactory. The contour also of the mouldings is very poor.

Our review terminates with Mr. Prinsep's frames, of which we give drawings in Nos. 131 and 730. They are apparently somewhat studied from those of Mr. Leighton, and have the same general effect. The egg and tongue ornament, however, is not Greek, and, therefore, does not accord so well with the mouldings. No. 730 is the best of the two, but the picture would have gained had the fascia in the middle been smaller, and had there been an additional internal margin.

In summing up the tendency of the remarks we have made, we find it exceedingly difficult to lay down any precise rules for guidance in the choice or design of frames, inasmuch as they must necessarily differ, not only in proportion to the size of the picture, but also according to its subject and treatment. Mr. Albert Moore's frame in No. 649, for instance, is not only in accordance with the subject of his picture, but suits admirably the flat treatment employed throughout in his tones of colour. A deeply recessed frame, or one covered with rococo ornament, would in this case have been singularly out of place. We think that the treatment of the inner mouldings of a frame generally is more important than the outer border. And we take the opportunity of again calling attention to the excellent effect produced in Mr. Tadema's or Mr. Leighton's frames by recessing back at two or three intervals, with small fascias between the margin of the picture; this treatment gives a solidity and constructional strength to the frame, and permits of the employment of any amount of decoration in the outer border. Of course a richly decorated series of mouldings does not suggest, although it may possess, strength in construction: if, therefore, there be no internal margin, not only does the picture suffer from the contiguity of the decorated surface, but a sense of insecurity in the holding together of the frame is felt. In Mr. Millais' frame, for instance, to his portrait of Miss Lehmann it is very possible that the rather coarse Italian ornament round is constructional; in other words, that it assists to hold the frame together: yet it has a contrary effect, and seems to require altogether a much stronger internal frame in order to carry this heavy ornament. In Mr. Storey's frame, No. 62, there is really no constructive part to the frame at all—the lavish ornament which covers the whole being an element of weakness, and not strength. In almost all frames a plain margin of at least two inches should surround the picture: whether this should be parallel with the plane of the picture or slightly inclined, as in Mr. Tadema's frames, is a matter of slight importance.

Another essential point to be borne in mind in the study of frames is the way in which the return to the wall is treated. In an exhibition this is likely to escape attention, because the close contiguity of the frames prevents the return being seen. Due regard, however, should be paid to their effect when isolated, and from this point of view we think that Mr. Portael's frame, No. 171, Mr. Graves's, No. 736, and Mr. Moore's are the most pleasing in form. Mr. Leighton's frames have straight sides, and, as their depth is not great, they may look well; but Mr. Tadema's frames must look like boxes against the wall, on account of their depth, and when seen sideways would be very objectionable, especially in a small room. The employment of pateræ or of a flat indented ornament in the panel round a frame, provided there be good design in such ornament, which is not always the case in this Exhibition, tends to enrich a frame without detracting from its ensemble. For certain pictures we think that the judicious employment of burnished ornament, as in Mr. Tadema's frames and the French ones generally, is well worth attention.

In conclusion, we would remark that we should have liked, had it been possible, to classify the frames in some order; but properly to illustrate such classifications, we should have been obliged to give a much larger series of examples; and, as our object was rather to draw attention to the best types than to write a full account of Academy frames, we have confined ourselves to the most remarkable in point of originality of design and harmony with the pictures enclosed in them. One point we wish specially to impress upon our readers is, that in a frame lies a not inconsiderable portion of the completeness of a picture, as all those who have had the opportunity of seeing canvases in artists' studios will easily recognise. If, therefore, any additional value can be given to a picture by the addition of a frame, it is surely worth while to give some consideration and thought to the latter, and not trust entirely to the caprices of the framemaker, who sees beauty only in elaboration of detail or perfection in finish; and, if all our painters would give some slight attention to this important subject, and, if necessary, call in the assistance of the architect, whose province it is, more especially, to occupy himself with mouldings and conventional ornament as in the designs for cornices, &c., we feel sure that a more satisfactory result would be arrived at. In that case our labours will not have been expended in vain in calling attention to the design and execution of picture frames.

The Municipal Council of Charleroi in Belgium has determined to petition the Minister of Public Works against continuing to work the coal mines under their town. It seems that the system of honey-combing the ground underneath is, at last, beginning to tell, some very ugly settlements having recently taken place at the barracks in the Haute Ville. As far back as 1839 the local engineers warned the council of the danger, but, like other corporate bodies, it was slow to move, until probably the mischief done is past repair.

SOCIETIES.

The Royal Institute of British Architects.

At the Special General Meeting on Monday last, Mr. J. P. Seddon was unanimously re-elected Honorary Secretary for Home Affairs. We regret to learn that for some reason which did not transpire, Professor Kerr withdrew his motion for a committee to inquire into the means of rendering the Institute more efficient, and that, consequently, no discussion took place on that subject. We sincerely trust that it will not be allowed to drop, and that if no committee be appointed, the Council will themselves take the matter into their serious consideration.

Architectural Publication Society.

The Annual General Meeting of the subscribers was held at No. 9 Conduit Street, on Monday afternoon, 31st ult.; William Tate, Esq., M.P., in the Chair.

The annual balance-sheet was presented, from which it appeared that the balance in hand available to pay the cost of production of the parts of illustrations and text then on the table, and for future issues, was 346*l.* 11*s.* 2*d.*

The following resolutions were agreed to:—

1. That it is desirable to secure the early completion of the Dictionary of Architecture.
2. To attain this end this Meeting authorises the Hon. Secretary to take such measures as may be necessary to obtain the immediate accession of a sufficient number of new subscribers, and pledges itself and the Society to actively aid in making the work as widely known as possible, and in procuring fresh members.
3. That in the event of success attending these exertions, the entire cost of the Dictionary is to be fixed for old and new subscribers at 15*l.* 1*s.*
4. The number of copies available being limited, this arrangement and the advantages attendant thereon shall apply:
  1. To those subscribers now on the lists who may before the close of this year pay up all subscriptions due or outstanding on December 31, 1868.
  2. To new subscribers who may pay down the fifteen guineas in one sum.
  3. To new members who elect to pay the fifteen guineas by instalments in the order of frequency of payment.

It was decided that this experiment be immediately made, and that the meeting adjourn for a month or six weeks to receive a report from the Hon. Secretary on the subject; also that Mr. Wyatt Papworth explain to the adjourned meeting how much time the completion of the work would probably take if sufficient funds are found.

Resolutions of thanks to the chairman and the various officers of the Society having been passed, the meeting adjourned.

NOTES ON NOVELTIES.

Antill's Stench Trap.

This ingenious apparatus, applicable to all descriptions of drains, claims to give effect to certain pneumatic and hydraulic principles. The difficulty which Mr. Antill professes to meet is that of affording a free flow to impurities, and, at the same time, guarding against the connecting-pipe being clogged, and the return of the impurities represented in foul gas or air charged with noxious matter. The interior of the base adjusted to the pipe contains two metallic curves in reverse and obverse positions, so arranged as to contain at all times a certain amount of water. When the flow is on, the water already in the trap moves on; but the arrangement is such that a residue must be left on the cessation of the stream, affording a check to noxious exhalations, which, if in the form of gas, discharge the impurities in the liquid retained in the stench trap; and this check is itself renewed each time it is called into use.

NEW BUILDINGS AND RESTORATIONS.

St. James's Church, Hereford, is cruciform in plan, and consists of nave, north and south aisles, transepts, chancel, sacristy, and south porch. The aisles are continued eastward of the transepts, and form an organ chamber on one side, and an additional space for seats on the other. The nave is 72 feet long internally, and is divided from the aisles and transepts by arcades of four arches on each side, those opening into the transepts being unusually wide. The width of the nave and aisles in the clear is 44 feet, and the width across the transepts is 64 feet. The nave, from the floor to the ridge, is 42 feet high; the chancel is 35 feet long by 20 feet wide, and 40 feet high to the ridge. There is a warming crypt under the sacristy, approached by an external stair, containing one of Gurney's patent underground stoves for warming and ventilating the church. The south porch is constructed as the substructure of the future tower and spire, and contains the first few steps of the corkscrew staircase to the ringing loft and belfry. The style adopted is Early Geometrical. The west front is pierced with three windows, one of three-light and two others of two-light each; the chancel by a three-light window at the east end, and by two two-light windows at the side; the transepts by four-light windows, and the sides of the aisles by seven two-light windows. The clerestory is pierced by eight sexfoiled circular windows. All the windows contain foliated tracery in the heads. The building has been constructed with Three Elms quarry stone, with box-ground Bath stone dressings, the interior throughout being ashlared random-ranged Bath stone, axed on the face and set in wide joints, and relieved with bands and voussoirs of blue stone. The roofs are framed with pitch pine, boarded and felted, and covered with Whitland Abbey slates. The timber and boarding are left their natural colour. The sittings are also of pitch pine, varnished over. The aisles and chancel are tiled, Godwin's ornamental encaustic tiles being used throughout the latter. A handsome encaustic tile reredos has been set up against the east wall

under the chancel window. The works just closed have been carried out by Mr. Gough, builder, of Bishop's Castle, under the superintendence of the architect. The church will accommodate 600 persons, but provision has been made for additional accommodation, should it be hereafter required, by the erection of galleries; and the whole of the sittings are free.

The Countess of Huntingdon's new Church, in Staffordshire, erected in 1800, owes its origin to the munificence of Mr. A. Cooper. The old church was one of the class of unsightly structures commonly erected in the early period of Nonconformist history. So complete, however, has been the transformation, both of exterior and interior, that the old building is scarcely recognisable. The works exteriorly comprised the erection of a new orchestra and vestry, the introduction of new windows, glazed with tinted glass, and an alteration of the arrangement of the window openings throughout, which have received stone arches and imposts, in lieu of the old brick arches removed, and plaster arches and imposts interiorly; and stone dressings have been suitably introduced in other parts of the building. A new portico has been erected with coupled pilasters and arches on three sides, surmounted by a stone cornice and balustrade; an inner vestibule is provided, laid with encaustic tiles. The roof—which, though containing plenty of sound material for a good roof, had been damaged by unskilful treatment in construction—has been restored and re-lated. The old horizontal ceiling has been removed; the roof timbers, now exposed, have been wrought or cased; and the appearance further improved by the introduction of carved braces and pendants. The internal alterations comprise entirely re-seating the body of the church, with open benches of good width. The woodwork throughout is stained and varnished, and the building warmed by the apparatus of Messrs. Haden and Son, of Trowbridge. The contractors are Messrs. Stonier Brothers, of Rochester, near Ashbourne; Mr. W. Sugden, of Leek, is the architect.

**New Wesleyan Chapel, Alsager (Staffs.).**—This neat and substantial building, erected from the plans of Mr. G. B. Ford, architect, Burslem, the foundation stone of which was laid in June last year by Mr. A. Shaw, was opened on the 1st inst. The building is in the Gothic style of architecture. Red pressed bricks, relieved by bands of black and white bricks, with stone dressings, have been used in the construction. There is a gallery over the entrance porch and vestibule. The orchestra, in which is placed a handsome new organ, is at the back of the pulpit, underneath which is the minister's vestry, and at the rear a commodious class-room. The roof of the chapel is ceiled half-way up in a vaulted form, and is so constructed as to prevent any reverberation of sound. The space between the ceiling and the roof will act as a ventilating chamber, into which the vitiated air will pass from the chapel by a simple and effective mode of revolving shutters, and underneath these shutters are panels with ornamental wood. The internal woodwork is of red deal and pitch pine, stained and varnished. The windows are glazed with cathedral tinted glass, in leaded quarry lights, with a margin of coloured glass round each light. A warming apparatus has been fixed by Mr. William Boulton, of Burslem. The floor of the chapel is calculated to seat upwards of 400 persons. The total cost of the building, including the land and organ, is expected to be at least 2,500*l.* The contract has been carried out by Mr. John Stringer, of Sandbach.

**The Industrial Schools at Leavesden.**—The last meeting of the St. Pancras Board of Guardians was specially to consider the minute of the School Committee, which recommended that application be made to the Poor Law Board for power to suspend the works in connection with the erection of the Industrial Schools at Leavesden, with a view of ultimately disposing of them. Mr. North, as chairman of the School Committee, was opposed to the erection of schools at such an outlandish place as Leavesden, where those who professed economy were erecting buildings for the accommodation of 700 children, when 500 was the *maximum* number they were likely to send there. The land had cost 4,000*l.*, the builder's contract was 37,600*l.*, and it was estimated about 13,000*l.* would be required for fittings, or considerably over 50,000*l.*, upon which they would have to pay interest. Medical men had proved that the massing children together engendered disease; and although they had, as he was told, paid the builder 9,500*l.*, he contended the first loss would be the least, and that the best thing they could do was to dispose of the buildings and site at Leavesden, and make use of the needless infirmary at Highgate for their accommodation. Mr. Parson seconded a motion in accordance with the minute, which was ultimately carried.

**Cheadle Hulme Congregational Chapel.**—The memorial stone of a new chapel, for the accommodation of the Congregationalists resident in Cheadle Hulme, Macclesfield, was laid on the 27th ult., in the presence of a numerous assembly of spectators, by Sir James Watts. The site of the building, given by Mr. Story, the mason work of which is nearly completed, is close to the Cheadle Hulme Station of the London and North-Western Railway. The chapel is in the Gothic style of architecture, and has a spacious schoolroom in communication with it. The contractor is Mr. G. Atkinson, of Stockport. Mr. Henry Littler, of Manchester and Cheadle Hulme, is the architect. The cost of the building will be probably about 3,000*l.*

**New Church at Lewisham.**—On the 8th ult. the memorial stone of a new church at Lewisham, to be dedicated to Saint Mark the Evangelist, was laid by the Right Hon. the Earl of Dartmouth. The church is to be of English architecture of the time of Edward II., divided into nave, north and south aisles, chancel, and organ chapel, with vestries for clergy and choir, and a narthex and tower, with ashlar spire, rising to a height of about 160 feet at the western front. The dimensions of the edifice are—nave and aisles, eighty feet by sixty feet; chancel, twenty-eight feet by thirty-nine feet. The walls are to be built of Kentish Rag, with Bath stone dressings. The seats to be open and stained, and the chancel stalls of oak. The church will seat 750 persons, and owing to the nature of the site (from its inclination eastward) schools may be formed under the chancel. The present contract (about 7,000*l.*) embraces a portion only of the building. The contractors are Messrs. Carter & Sons, of Holloway. The architect is Mr. W. C. Banks, of Gracechurch Street.

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

**Acoustic Experiments at South Kensington.**

Whether the mantle of that preacher who so charmed his audience that 'those who came to scoff remained to pray' has descended upon the shoulders of Mr. Cole may be a question. But that some such effect was produced on the numerous, but exactly proportional, audience that filled the Lecture Hall at the South Kensington Museum on Wednesday evening, with not one person too many, and not a single vacant seat, is unquestionable. Those who, note-book in hand, grave in face and feature, and bent on acoustic science, found themselves entering the Museum a little before 8 p.m. on this evening, had occasion to perceive, by the rustle of silken trains, and the gleam of dark braided hair, the presence of a distracting bevy of fair fellow-students. And before the evening closed with a noble performance of the national anthem, the investigators in question had arrived at the conclusion, that, if that evening's occupation had been the study of acoustics, it was by far the pleasantest department of the exact sciences with which they were acquainted.

It was the Lord President of the Council, according to Mr. Cole's modest disclaimer, to whom we were indebted for the practical idea that one way of trying the acoustic properties of a room was to sing in it. However that may be, so charming a surprise, on a birthday too, will be long remembered by those who had the good fortune to be present. Mr. Cummings sang with admirable delicacy and sweetness, and rose to tones which we can only compare to the *shout* of the nightingale at his fullest song. Miss Edith Wynne sang three touching ballads, so as to draw not only applause loud and long, not only *encores* well deserved and gracefully acknowledged, but the deeper tribute of tears. The softer notes of this lady's voice are to ordinary singing what whisper is to speech; but it is the whisper of Mrs. Siddons, audible throughout the house. Mr. Sullivan drew applause alike for his music, and his mode of conducting the brilliant improvised orchestra of nearly sixty voices.

The success of the experiment was perfect; a result due as much, we apprehend, to the complete filling of the room without overcrowding, and to its comparatively limited size, as to any more direct acoustic perfectness. Not a note of the solos was lost in any part of the theatre; and the effect of the chant-like commencement of the part-songs was magical.

We cannot omit to call attention to the admirable lighting of the room by four lines of burners, arranged in a square near the ceiling. Whether owing to the tint of the walls—a sort of dark olive—or to any other cause, the lustre was so like that of daylight, giving its proper tone to each shade of hair and of complexion, and to each detail of the graceful toilettes of the fair singers, that, looking at the orchestra, the sense that the light was artificial entirely disappeared, and more than once one wondered that the sun had not set.

**The Thames Embankment.**

The report of the select committee appointed to inquire into the roadway and viaduct proposed to be made on the Thames Embankment from Hungerford Bridge to Wellington Street, Strand, has been issued. The committee are of opinion that the Metropolitan Board of Works ought to be relieved from the formation of the intended roadway from the Embankment below Charing Cross Railway Bridge to Wellington Street, and that so much of the Act 25th and 26th Vict., c. 93, as applies to the formation of this roadway, should be repealed. The committee consider the suggestion to erect a Natural History Museum in this locality, and to combine with it terrace walks and open ornamental ground, is deserving of the favourable consideration of Parliament, as best meeting the requirements of all parts of the metropolis, both north and south; and that in the event of any such building being erected in this locality, due consideration should be shown for all private rights. The committee do not express any opinion on the probable cost of applying the sites in question to the erection of such a building. Mr. Walker, Superintendent of the Metropolitan Police, has stated in evidence that a carriage approach from Parliament Street, by Derby Street, to the Embankment roadway, is necessary to relieve the traffic at Bridge Street going from the Thames Embankment roadway to the Houses of Parliament and the west of London.

**The Lungs of London.**

The death of Sir Thomas Maryon Wilson is an event of importance. Not only the owners and occupiers of property in the neighbourhood of the estates of the late baronet, but those interested in the habitability and health of London, should direct prompt and earnest attention to the change which is thus introduced into the state of a long-vexed question. Of course no one can attempt to invalidate the rights of the owners of the estate on utilitarian grounds. At the same time it is of the greatest importance that these rights should be ascertained; so that, in case of this district being now given over to the builder, the minimum amount of residential damage may be inflicted on the neighbourhood.

**Discovery at Westminster Abbey.**

Among the many interesting discoveries which have from time to time been made by Mr. Scott, and those who under him have the charge of the Abbey, the most recent is by no means the least valuable. It is well known that the shrine of St. Edward the Confessor was taken down wholly, or at least to a great extent, at the Dissolution, and re-set up in Queen Mary's time. Many portions of the old work were restored in wood, and while it is in some respects doubtful what was the arrangement of certain parts, there can be no doubt that the existing restoration, if it can be so called, is incorrect. A fragment marble has recently turned up, and it was, we believe, Mr. Poole, the Abbey mason, who first recognised that it corresponds exactly to the portions still left of the original cornice. This fragment when fitted into place settles the question—one of those hitherto incapable of solution—of the position of the columns at the western end of

the shrine. It is not clear that the cornice did not break round the angle of the tomb as it does at present, and that the original twisted shafts are not now in the original position.

#### St. Pancras Workhouse.

A somewhat startling discovery in a sanitary point of view has been made in the St. Pancras workhouse, which may afford a useful hint to those concerned in the erection of such buildings. The room occupied by the late medical officer, and the infirmary wards adjoining, have been for some time pervaded by a noxious sewer smell, all attempts to trace the origin of which have hitherto failed. At length, in examining the basement of the building, an opening was found large enough to admit a man to pass from one end of the infirmary to the other, and this space was found to contain a quantity of foetid matter; in two days 2,266 gallons were baled out. The infirmary is ventilated by shafts in the walls which were intended to admit pure air, but which in fact conveyed the vitiated air and sewer gas from the accumulation in the basement of the building. The leakage is supposed to have arisen from the canal adjoining it being higher than the base of the infirmary, but it is thought by others probable that it arose from the burial ground adjoining the premises.

#### New Docks at Fleetwood.

On the 2nd inst. the first sod of the new docks was cut. They will cost about 50,000*l.*, and be 600 feet long, 400 feet wide, and 23 feet deep outside at high water during an ordinary spring tide. Mr. Cox, of London, is the engineer; and Mr. C. Chambers, of the same place, the contractor.

#### Lord Palmerston.

On the 2nd inst. a statue was inaugurated at Southampton, in honour of Lord Palmerston, by the Earl of Carnarvon, with a grand ceremonial, and a banquet in the evening.

#### The Great Imperial Prize.

The French Minister of Fine Arts has appointed the Commission to award the extraordinary quinquennial prize of 100,000 francs for a great work in painting, sculpture, or architecture. The following is the list of the members of the Commission:—

*Painters.*—MM. Couder, Robert-Fleury, Cabanel, Gérôme, members of the Institute; Amaury-Duval, Barrias, Baudry, Jalabert, Larivière, Leneveu.

*Sculptors.*—MM. Dumont, Guillaume, Barye, members of the Institute; Barre (Jean-Auguste), Cabot, Carpeaux, Crauck, Gumery, Thomas (Gabriel-Jules), De Triqueti.

*Architects.*—MM. Duban, Labrousse, Lefuel, members of the Institute; Ballu, Beswillwald, Clerget, Garnier, Questel, Reynaud (Léonce), Viollet-le-Duc.

The Institute, or rather, in this case, the Academy of Fine Arts, has renounced any part in the competition, and any member of the Commission becoming a candidate is required to resign.

It is not believed that the prize will be awarded on the present occasion; and the Emperor, or his Minister, seems to share the doubt; for in the case of no worthy work being discovered, the amount of the prize is to be presented to the funds of the United Association of Painters, Sculptors, and Architects.

#### Stained Glass.

A window of stained glass has just been erected in the Catholic Church at Raheny, Co. Dublin. It is from the studio of Messrs. Earley & Powells, Camden Street Works, Dublin.—Three windows of stained glass have been erected in the chancel of the Catholic Church, Butlersbridge, Co. Cavan. In the centre light is depicted the Crucifixion of our Lord, with the Blessed Virgin and the two Marys at the foot of the cross. The windows on either side contain full-length figures of St. John and St. Paul. The windows are the gift of Hugh Blessin, Esq., of New York, a former resident in the parish.

#### Mr. E. Deutsch.

This gentleman has returned to London from his Eastern journey, having deciphered the inscriptions on the 'great stones' of the Temple platform, and found them to be Phœnician masons' marks. Thus the original builders of that side of the Temple wall were of the age of Solomon, and probably the craftsmen of Hiram, King of Tyre. Mr. Deutsch has also recovered the lost letters of the Maccabean Hebrew alphabet.

#### Notes from Paris.

In a corner of the permanent Exhibition building in the Champs-Élysées there is, at this moment, a model intended to show how Paris may, at a trifling outlay of 80 million francs, be converted into a maritime port, by means of a canal 112 miles long. It is a suggestion emanating in the first instance from the fertile brain of a Paris banker, M. J. Ardoin, and without stopping to enquire whence he proposes to raise the necessary capital, or the utility of the canal when completed, we sketch the general outlines of the scheme. The canal is to begin at Dieppe, where the outlet would be protected by an immense breakwater. It is then to traverse the *Arques* valley, and, crossing the Seine and Oise rivers, to arrive at the capital by way of Neufchâtel, Beauvais, and St. Denis. At Paris the canal would cross the Great Northern Railway, and finally end in an enormous basin reaching from the suburb of St. Denis to that of La Chapelle, and between the St. Ouen station and the Seine: this basin to be the 'Port of Paris.' Amongst the minor works which this scheme comprises is a short canal between the 'port' and the Seine, with two enormous locks, the river being here 62 feet higher than the contemplated basin. Then the Villette Canal is to be continued under the Buttes Montmartre to the Seine, with wet and dry docks between it and the 'Maritime Canal,' the present goods shed of the Northern Railway being on a level with these docks. The 'Canal Maritime' would be at such a level as to permit the free passage of ships' masts under all bridges, with two exceptions, when the masts would have to be lowered. The model, which is made to a scale of half a millimètre to the mètre, is 295 feet long.

A new terminus is in course of construction at the Orleans Railway. It is 918 feet long by 166 feet wide. The roof is a flat segment, rising 40 feet

in the centre. The highest point is 92 feet, the wall plate 52½ feet from the level of platform. When finished, the roof will contain no less than 1,320 tons of cast and wrought-iron. The scaffolding employed in its erection contains 2,700 cubic feet of timber and 29 tons of iron.

#### Works shortly to be undertaken in France and Belgium.

The Saumur and Cholet line at Doué will cross the calcareous plateau where inexhaustible quarries of building stone and a number of lime-kilns are in active operation, and it will pass near Brossay, which is renowned for its hydraulic lime; it will also touch the coal mines of Châtelaion.

M. Philippart, President of the railways of the Hainaut collieries, has applied for the concession of that part of the line from Orleans to Rouen which traverses the department of the Eure, through St. André, Evreux, and Louviers, and also of the line from Acquigny to Dreux, by the valley of the Eure, with branch line from Pacy-sur-Eure to Vernon. The subventions for these lines amount to 5,734,500 francs in money, and a free grant of the land required for the line from Evreux to the limit of the department of the Seine Inférieure.

The town of Châtelleraut has voted the sum of 4,000*l.* for a line of railway from Argentan, passing by Châtelleraut and joining the Nantes and Tours line at Port Boulet; the Minister of Public Works has, however, insisted on a preliminary survey, which is estimated to cost 600*l.*, which sum is to be defrayed by the three departments interested, and the Châtelleraut Council immediately voted its proportion of the amount.

A society, with a capital of 400,000*l.*, has been formed in Paris, with the object of constructing a floating basin and docks at Gravelines, and a preliminary examination is now being made on the spot.

#### The Girdle Round the Earth.

The Atlantic Telegraph has conveyed the intelligence of the completion of the Pacific Railway. It is difficult for the untravelled Englishman to realise what this announcement means. The character of this stupendous work is one altogether unfamiliar to our experience. In magnitude it is the largest engineering work in the world, running for one thousand seven hundred miles through unsettled country, and across the very back-bone of the New World, and forming a portion of connected railway communication of some three thousand miles in length. Rough in execution, light in the weights of rails, and knocked out of hand with a galloping rapidity, the line rather resembles what we should call a contractor's temporary-road than a public or completed railway. For traffic such as pours over our own trunk lines it would be altogether unsafe and ineffective; but for the locality and the circumstances of the case, the Pacific Line possesses the first great requisite, practicability. First, it was possible; secondly, it is done.

If constructed at the average rate of English railways, the Pacific Line would have cost its shareholders upwards of eighty millions sterling. If we take the rough proportionate reckoning, that a dollar spent on railways in America is the equivalent of a pound spent on railways in England—which is not far from the mark if length of line be the only element regarded—we shall still have to face the enormous sum of eighty millions of dollars. It is probable that the cost has been considerably below this figure; but, if so, what an idea must we form, not only of the persistent energy, but of the admirable practical industry, of the Atlantic pioneers! One thousand seven hundred miles of light branch railway in our own country, bringing the more remote country districts into organic connection with the great locomotive system, would be cheaply purchased at 6,000*l.* per mile. They would form a property not only remunerative *per se*, but also augmenting in no slight degree the value of all other railway stock, and binding yet closer together every British interest.

## General.

The Fine Arts Copyright Act, to which we drew attention a short time since, is being taken into consideration by some of the leading Architectural Societies, with a view to obtaining a definite understanding as to architectural copyright.

Captain Rudston Bead has propounded a plan which is to provide improved dwellings for the working classes on a basis so profitable that a large surplus revenue is reckoned upon, available for a variety of purposes, including a sick fund, an educational fund, and a fund for the reduction of national taxation. At the same time it is considered that pauperism will be reduced within the narrowest possible limits. It is to be a State scheme, under the direct authority of the Government; the organisation to resemble that of the present poor law, with a central board and local authorities.

Builders' Benevolent Institution.—At the late general meeting of the subscribers to the Builders' Benevolent Institution, it was stated that since the foundation of the institution there had been 104 male and female pensioners on the funds, the men receiving 2*l.* and the women 20*s.* per annum. At the present time the number of pensioners of both sexes is 46. The money, invested in the Three per Cent. Consols, amounts to 11,706*l.* 9*s.* 8*d.* for the relief fund, and 2,951*l.* 12*s.* 7*d.* for the building fund.

Art Manufactures.—On the 27th ult., Mr. Layard, M.P., attended a meeting of the London Artisans' Club and Institute, when a paper 'On Art as Applied to Manufactures' was read by Mr. J. G. Grace. There were also present Lord Lyttelton, Sir John Bowring, and Mr. Hodgson Pratt. In the course of a brief address Mr. Layard said that to him a subject of great interest was the adornment and embellishment of public buildings. There was nothing, in his opinion, more calculated to raise taste in this country or to create a high intellectual and moral feeling than the internal adornment of public buildings. If it pleased the gentlemen in the House of Commons to allow him to retain the position he held under the Government, he hoped to be able to show the people of this country that there was something in internal decoration. This country he considered almost entirely ignorant of what internal decoration really was. Mr. Layard afterwards spoke of the effect which the culture of flowers in the public parks had upon the minds of the working classes.



**Wells Cathedral.**—On the 20th ult. a meeting in aid of the proposed restoration of the west front and Chapter House of this cathedral was held in the Chapter House. It was proposed, after discussion, to restore the canopies in certain instances, and in others to repair them. There were 4,700 feet of column in the west front, at 6s. per foot, so that it was a question of blue lias or marble. Lord Taunton moved that it was desirable to carry out the restoration of the west front according to the plan recommended. He remarked that it had been proposed to have coloured glass in the Chapter House, but he thought it better to have no coloured windows than to have paltry ones. Resolution carried. A committee was then nominated, and the meeting terminated with a vote of thanks to the President.

**New Town Hall at Bradford.**—A short time ago the Bradford Town Council adopted a site of 2,000 yards of ground (acquired in dealing with street improvements) in New Market Street, a very central point for the purpose of a Town Hall. The council has just issued printed instructions to architects as to the character of the building required on the site, and giving a schedule of particulars as to the extent of accommodation to be provided for the several departments of the corporation. The cost of the building is not to exceed 40,000l. The architect whose design is selected as the best will be entrusted with the execution of the work, receiving in payment a commission of 5 per cent. on the actual outlay. The architect whose design is the second best will be paid 200l., the third best 100l. The designs are to be delivered to the Corporation not later than September 1 next.

**Dumfries New Infirmary.**—A meeting of the building committee in connection with the new Infirmary buildings was held on the 22nd ult. at Dumfries, for the purpose of further considering the plan of Mr. Starford, architect, which was produced in an amended form, an estimate based upon it amounting to 8,650l. 9s. 8d. The proceedings of the committee will be laid before the governors at a special meeting on the 9th inst.; and should they be confirmed, the building will be commenced forthwith.

**Workhouse Waterworks.**—The Coventry guardians are considering a scheme for establishing waterworks for their private accommodation at an estimated cost of 500l., whereby they hope to reduce the cost 50l. per annum.

**Mr. Abner Wedgwood.**—This gentleman died a few days since at the early age of fifty-six. Mr. Wedgwood was a descendant of John Wedgwood, of Haracles, near Leek, from whom also descended Josiah Wedgwood, the eminent potter. The earlier years of Mr. Wedgwood's life were spent with the late Mr. John Ridgway at the Cauldon Place manufactory; subsequently he became connected with the Trent and Mersey Navigation Company. The latter part of his life was principally spent in superintending agricultural operations and improvements upon his various estates. He was buried at the parish church, Burslem, Staffordshire, on the 24th ult.

**Hanley (Staffs.) New Cattle Market.**—The success of this market is so great that the demand for pens for both beasts, sheep, and pigs, exceeds the accommodation provided. Accordingly, arrangements have this week been made for the erection of a sufficient number of additional pens to accommodate 80 cattle and 560 sheep.

**The Government Survey in Cheshire.**—A staff of officials connected with the new ordnance survey of this county have been located in Macclesfield since December. At present their operations are confined to the Hundred of Macclesfield, and to the coal fields of the district, which dip into Derbyshire and Yorkshire. Up to the close of the last month 12,500 imperial acres had been surveyed, chiefly in the north and west of Macclesfield, and in a few days the survey of the town will be commenced. The scale on which the country districts are being surveyed is twenty-five inches to the mile (the old scale is one inch to the mile), while the town will be mapped on the extended scale of ten feet to the mile.

**Shap Granite Works.**—On the 27th ult., at the Shap Granite Quarries, near Kendal, Westmoreland, a huge blast took place. With 75 lbs. of powder a solid block of granite, measuring 40 ft. by 30 ft. by 15 ft., and weighing 1,500 tons, was blown from the monster deposit of Wastdale Oreg.

**Sewage of Towns.**—A Towns' Drainage and Sewage Utilisation Company has been incorporated. The company propose to assist the local authorities of towns in disposing of their sewage, by acting as a medium between the sewer authorities and farmers disposed to apply sewage on lands they already occupy, or who may become tenants of land irrigated with sewage, after it has been properly laid out for the purpose.

**The Spanish Inquisition.**—Within a few hundred yards of the new Plaza de Dos Mayo, in Madrid, there is a locality called the Cruz del Quemadero. Through it a new road was lately opened, and lumps of charred wood were found, interspersed with ashes, evidently the remains of some huge fire. Iron rings were grubbed up; human bones, a cranium, a long tuft of hair, having belonged to some female. All these were more or less charred. Some of the iron was partially fused, and the texture of bone intermingled with sand was plainly discernible. A gag too turned up. In fact, this field of the Cruz del Quemadero was the place where the Inquisition disposed of some of its victims. Here were the ghastly proofs of the horrors of which this place had been the scene, suddenly brought to light after the lapse of two centuries. On May 12, 1669, 83 heretics, including 20 Hebrews, of whom five were women, were immolated on this very spot. The pile of wood was 80 ft. in length by 7 ft. in height. A great course witnessed the *auto da fé*, and the horrible ceremonial completed, the people buried the remains of the victims under cart-loads of earth. An entire bone of a human vertebral column, a portion of a tibia, a fragment of a shoulder-blade with a hole through it, and a bit of a rib, all bearing the marks of fire, were also turned up. The Quemadero is so frequented by people in search of relics, and the explorations of these strata have been so extensive, that the authorities have barred the frontage off, and prohibited access. It is their intention to cut out a square block, and there erect a monument.

**The Bermuda Dock.**—Mr. John B. Day has just published a large and well-executed chromo-lithograph of this extremely important and original engineering work.

**Maryport Harbour.**—The Board of Trade are reported to have approved of the dock proposed at Maryport, and the trustees are waiting to receive the assent of the Public Works Loan Commissioners. It is expected that the works can be completed within two years. The West Cumberland Coalowners' Association were petitioners against the scheme.

**A Stained Glass Window,** the gift of Dr. N. Rogers, and the work of Messrs. Clayton and Bell, has been placed in the south transept of Westminster Abbey, above the monument to Milton. It is in two parts, each canopied, and containing a figure: that on the left represents David, holding a pen and scroll, and looking upwards; the fellow light contains the figure of St. John writing the Apocalypse.

#### MEETINGS OF TECHNICAL AND LEARNED SOCIETIES.

**ROYAL ARCHAEOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.**—The next monthly meeting will take place on Friday, July 2, at 4 P.M.

**ROYAL INSTITUTION OF GREAT BRITAIN.**—Monday, June 7, 2 P.M. General monthly meeting. Saturday, June 12, Lecture by Mr. Deutsch on 'Semitic Culture.'

**ROYAL INSTITUTE OF BRITISH ARCHITECTS.**—Monday, June 7, 8 P.M., ordinary general meeting.

**ARCHITECTURAL ASSOCIATION.**—Friday, June 11. Nomination of officers. Also, a Paper by J. Tavenor Perry, Esq., A.R.I.B.A., on 'An Historical Account of the Artistic Treatment of Piers, Pillars, and Columns.'

#### APPOINTMENTS VACANT.

**INDIA.**—July.—Forty Appointments in the Engineer Establishment of the Public Works Department in India will shortly be open to public Competition. W. T. Thornton, Secretary, Public Works Department.

**KENDAL.**—Borough Treasurer to the Corporation of Kendal, Westmorland. Salary, 50l. per annum. Mr. Thomas Harrison, Town Clerk, Kendal.

**FESTH.**—As Assistant or Resident Engineer, to Superintend Works of Pipeage, Masonry, and Pumping Machinery. A knowledge of the German language desirable. Salary from 400l. to 600l. per annum. W. Lindley, Engineer-in-Chief, Festh.

#### COMPETITIONS OPEN.

**ARRAS, FRANCE.**—Architects are invited to send in designs for a Church to be erected at Arras. The building is to be 40 metres long, without the clock tower, and 18 metres wide, and it is to have three aisles, three entrances, to be approached by a flight of five steps, and to be surrounded entirely by railings 1½ metres high; sub-basement of Belgian stone. The plans are to include a general one of the entire building, a fully-detailed description, and a careful estimate, with such perspective views and details as the artist may think fit to add to the former. The style of the building is required to be 'Decorated Roman of the last period;' and the sum to be expended, including commission, is 80,000 francs (8,200l.). The authorities do not undertake to adopt the prize plans, in which case the author of the best and second best designs will receive 600 francs and 300 francs respectively. It is added, that the columns are to be of hard Belgian stone, and the rest of the building of Creil stone; the vaultings are to be real, and not in ceiling, or of wood with visible ties. The jury is composed of the Bishop of Arras, the Maire, a Canon, two members of the Municipal Council, an Engineer, the Secretary-General of the Museum, and the Vice-President of the Council of the Prefecture. The designs are to be sent by the end of July.

**BIRMINGHAM.**—June 10.—Wanted Plans for the proposed Erection of a Building on land adjoining the Workhouse, capable of accommodating 200 Epileptic Pauper Inmates, together with the Estimated Cost of such proposed Building. William Thompson, Clerk to the Guardians, Parish Offices.

**BELGIUM ACADEMY OF ARTS AND SCIENCES.**—For best enquiry (essay) and report on the period at which Architecture in the Low Countries became affected by Italian influence. Premium, 1,000 francs, about 40l.

**BRUSSELS, BELGIUM.**—A competition is announced for the production of the best Water Meter. The inventor of the instrument offering the greatest advantages is to receive a reward of 200l.; the second best, 120l.; and the third, 80l. The Meters are to be sent in to the Secrétaire de l'Administration Communale, Hôtel de Ville, Bruxelles, before 12 o'clock on October 31 in the present year.

**CLIFTON (Bristol).**—The Guthrie Scholarship. Values 50l. a year, and 20l. added. One or more scholarships of 60l. and one of 25l., at Midsummer. Apply to the Secretary.

**CONSTANTINE, ALGERIA.**—Three prizes, of the value of 3,000, 2,000, and 1,000 francs, are offered for the best designs for a theatre to be built at Constantine.

Programmes of conditions, accompanied by a sketch, may be obtained either at Constantine, at the office of the Société Générale Algérienne, No. 13 Rue Neuve-des-Capucines, Paris, at the Prefecture of Lyons, or the Mairies of Marseille, Bordeaux, or Orlans.

**DEVON.**—June 12.—Plans and Specifications for Repairs and Alterations to Chudleigh Parish Church, Devon. G. B. Ellicombe, Esq., Chairman of the Chudleigh Advowson, Trustees, Rocklands, Chudleigh, Devon.

**LEYDEN MUNICIPALITY** invites Designs and Models from Sculptors of all countries for a Statue of Boerhaave, in the costume of Professor of Leyden University. September 1.

**LINCOLN.**—June 14.—For Plans and Designs for a New Church. Mr. T. Heffernan, Secretary, Lincoln.

**LONDON.**—June 26.—London and County Land and Building Company (Limited).—Plans of the best and most profitable way in which to arrange in building sites their ground in Canonville Street, City. First premium, 75l.; second, 50l.; third, 25l. Mr. R. B. Looker, 14 Clement's Lane, E.C.

**NORTHAMPTONSHIRE.**—June 8.—Plans and Specifications for Rebuilding Whitfield Church, situated near Brackley, Northamptonshire. The Churchwardens of Whitfield.

**PHILADELPHIA, PENNSYLVANIA, U. S.**—September 1.—For Designs, Specifications, and Estimates for New Public Buildings. First premium, 400l.; second, 300l.; third, 200l.; fourth, 100l. For particulars, to H. C. Fugh, Secretary of Board of Commissioners, S.W., corner of Walnut and Fifth Street, Philadelphia.

**PLYMOUTH, DEVON.**—For Designs for New Guildhall, Law Courts, Public Office, &c. Premiums 100l., 75l., and 50l. July 14. Whiteford, Town Clerk, Plymouth.

**ROYAL ACADEMY OF ARTS.**—Burlington House. For the best Painting in Oil, or Model and Design in Painting, Sculpture, and Architecture, the Gold Medal and the Discourses of Presidents Reynolds, West, &c.; and for the best Copies of Drawings, &c., the Silver Medals, &c.

**SAINTE JEAN D'ANGELY, FRANCE.**—The authorities of St. Jean d'Angely have decided on completing the Church commenced in the town by the Benedictines, but of which the works were stopped in 1789. Estimate 200,000 francs (8,000l.), the architect's honorarium to be equal to 4 per cent. The competition is confined to architects of Charente and the four adjoining Departments.

**VIENNA, AUSTRIA.**—This Municipality require Designs, Plans, Estimates, &c., for the Erection of a New Town Hall. Open to all Europe. For Particulars, Austrian Consul-General, Paris.

**WESTBROMWICH.**—For Designs, &c., for a complete School Establishment for accommodating 400 children. Premiums: 1st and best Design, 50l.; 2nd, 30l.; 3rd, 20l. Mr. H. Ward, Lombard Street, Westbromwich (Plymouth, Royal Academy of Arts, St. Luke's).

**WOODSTOCK.**—For a Plan of the Burial Ground at Woodstock, to be divided into Grave Spaces. R. B. B. Hawkins, Clerk, Woodstock.

# The Architect.

## THE TREATMENT OF TERRA COTTA.

BY GILBERT REDGRAVE.



THE use of terra cotta as a building material has now become such an established fact, and so much has lately been said and written on the subject of the qualities and capabilities of terra cotta, that I could scarcely hope to adduce any fresh particulars or throw any new light on these points. My intention, therefore, is to say a few words upon the *treatment* of terra cotta;

that is, its disposition and arrangement, considered with reference to the structural necessities which the employment of it renders imperative.

It may, perhaps, be as well to begin by stating that there are two distinct views on this question, involving two entirely different modes of treatment, both of which are advocated by influential supporters, and have numerous excellent reasons in their favour. I will endeavour, as briefly and impartially as possible, to explain these views, and then point out which of the two modes of treatment I consider most suitable. For the sake of comparison I shall, in the following remarks, speak of those holding these different opinions as the *old* and the *new School*; and the two theories, if I may so call them, I shall designate the *natural* and the *artificial*. First, then, as to the old school, holding the artificial theory.

When, at the commencement of the present century, architects became ashamed of the brick walls, with holes in them, which had so long been the characteristics of the only style practised in this country, they began to look about them for some cheap and suitable dressing and adornment for their various works. Of course, stone was procurable, but the few available means of transport rendered it costly and confined its application within narrow limits. With the demand for something to take the place of stone came the supply, and we soon read of a number of manufacturers proposing to furnish the public with (so called) artificial stone.

It will not be necessary here to mention the makers by name or even to explain the composition of their substitutes for stone—all that I need say is, that terra cotta, as it is now called, was one of those artificial stones, and its great similarity to the material it aimed to represent was put forward as a main point in its favour. *Artificial* is, I must own, a very hateful word, and in case, by the name I have chosen, or rather which was originally chosen for it, as we have seen, I should be accused of doing injustice to the system pursued by the old school, I will substitute for it the term *imitative*. In this imitative treatment of terra cotta, dating, as I have shown, from the earliest period of its revival in this country, consists the principal peculiarity of the old school, assuming that it is possible, by extreme care and attention on the part of the manufacturer, to produce the effect of stone-work—the whole tendency of the old school is to a stone treatment of terra cotta. To arrive at this result, it becomes of importance that the tint chosen for the terra cotta of any particular building should be light in colour and uniform throughout; that the blocks should be large and imposing, that the ornament should be confined to bands and masses, that the plain surfaces should be perfectly true and regular; and, in short, that the material should be so disposed, that to the eye even of the practised observer it should appear stone.

The new school, consisting of the advocates of the natural treatment, can in reality boast of more antiquity, and can produce authorities of a far earlier date, than their brethren inclining to the imitative treatment. Although in this country the theory of natural treatment is of comparatively recent date, the architects of Italy seem, in the best period of Italian terra cotta, to have been almost unanimously in favour of this treatment; and when I speak of the school as new or modern, I do so merely in order to distinguish it from what has been, till lately, the received idea on this subject in England. The natural theory, as the name implies, assumes the clay to be a material requiring a treatment suitable to its nature and composition, and adapted to the processes of its manufacture—a treatment which

shall involve a distinct and characteristic style of ornament, a size of block convenient for the manufacturer and not liable to be confounded either with brick or stone; and, finally, one by means of which all the peculiarities of colour and form should be emphasized rather than concealed; in short, the direct opposite of the imitative theory.

Having, then, in this manner accomplished the first part of my work by explaining the two treatments, and pointing out the chief features of each, I will now indicate the arguments in favour of the natural treatment, which I trust to be able to show is the right one. Terra cotta in any quantity can only be produced from moulds, and these moulds when large are very heavy and difficult to manipulate. The natural treatment, therefore, leads us to select a manageable size for the blocks, and accepts the limit thus laid down as a necessity. There is the more reason for so doing from the fact that these small blocks dry much truer, burn harder, and are less liable to imperfection than large and massive pieces made to counterfeit stone. This ascertained size, say a cubic foot or thereabouts, is one which can in no way be confounded either with brick-work or masonry, and with blocks of this size the advocates of the natural treatment are contented. Their only other care is to select some form of construction and ornament which shall harmonise with the size of the blocks, and present a speciality for the material they are dealing with.

Terra cotta architecture must necessarily be studied *per se*, and the architect's aim (when employing terra cotta) must be to impress at once upon everyone the nature and peculiarities of the material he has been making use of. I find a great difficulty here in explaining in writing exactly what I mean: perhaps I may do so better by giving an example. Having to execute a long moulded and enriched string course, the enrichment to be a guilloche between an upper and lower base and of plain mouldings, the architect, adopting the imitative treatment, would make the blocks in lengths of from two to three feet; he would require the unfortunate manufacturer to keep the lines perfectly true; he would grumble at a change, however slight, in the tints of adjoining blocks; and he would probably have the vitreous surface of the terra cotta removed, in order to conceal any slight imperfection or inequality in the arrises and joints. The advocate of a natural treatment, on the other hand, would break up the string course into several heights, and would not exceed a foot or 16 inches in the lengths of his blocks; he would point with admiration to the charming variety and play of colour in the material, and would look upon the slight irregularity of the leading lines as imparting a certain picturesqueness, and as affording a relief to the monotonous perfection he would be justified in requiring had the work been executed in stone. Lastly, the slight differences in the enriched portions of his string course would approximate more to the inequality of manual work, and avoid the unchanging repetition which is found in too carefully made terra cotta.

The great argument, however, in favour of the natural treatment is that, having moulded the block from the artist's own model, it undergoes no touching, polishing, and scraping by the manufacturer's workmen. This is *THE* great evil of the imitation terra cotta. In order to get the beautiful surface and finish which is aimed at therein the actual touch of the artist is lost, and the delicacy and often the entire feeling of his work is obliterated. In the matter of cost it is self-evident that the natural treatment has again a very great advantage, for the manufacturer is here called upon to omit that stage in the production of the material which requires him to employ more skilled labour than any other part of the process. As an art question I think that there can scarcely be two opinions; unfortunately the architect who has been accustomed all his life to the truth and regularity of stonework, requires a long time before he can become converted to a picturesque treatment such as the natural one must, to a great extent, be; but when once he is able to feel that it is not absolutely necessary, because the lines are ruled straight on paper, that they should be equally so on the building, the further changes in his creed on the subject of colour and ornament are speedily accomplished. Of course, manufacturers, as a rule, discountenance entirely a system which degrades them, as I have heard it put, into little better than brickmakers; but I cannot admit that any arguments which have been adduced by them have done much more than persuade me that they were struggling for a false notion—a notion which, when it has been discarded and the true theory of terra cotta, *baked clay*, has been adopted in its stead, will throw into all the more prominence the fact that the natural treatment is the only one able to replace paint and stucco in London.

## THE SHRINE OF ST. SEBALDUS, NUREMBERG.

IN very apposite illustration of our recent Ramble among the bronze monuments of Westminster Abbey, we have to call attention to a new acquisition made by the South Kensington Museum.

In the North Court, near the beautiful reproduction of the pulpit of the Baptistery at Pisa, is to be seen a plaster model of the Shrine of St. Sebaldus, a bronze work now existing in the church dedicated under the invocation of that saint at Nuremberg. This wonderful production of Gothic fancy and German skill is ascribed to Peter Vischer and his sons, and dated between 1506 and 1519, being thus exactly coeval with the tomb of Margaret of Richmond, erected A.D. 1509, and with the monument to Henry the Seventh and his Queen Elizabeth of York, dated 1502-1509.

We must be content with but a brief reference to this elaborate work, which well deserves a full description. The actual condition of the Kensington model is inferior, in matter of finish and sharpness, to the objects of the same nature with which we are already familiar. If we look for details of execution, we shall be disappointed; but we have the materials for a general conception of the bold originality and lavish decoration of the shrine presented to us in the cast. The design of the work is that of a sarcophagus supporting a tabernacle, or enriched canopy, by means of graceful, slender shafts, or rather rods, the arrangement of which recalls that of the portable canopies that are borne over the Host in the processions of the Romish Church. Over both the tomb itself and this wrought *co-opertorium* is spread a host of saints, and martyrs, and lovely boy-angels—the grisly founders of the church bearing the implements of their martyrdom, one a saw, and one a sword, and the like—and the cherubs sounding every form of instrument of music. The boldness of the fancy, and the untiring elaboration of detail in which the members of this symbolic army are niched and perched upon, under, and around the shrine, are, as far as we can remember, unrivalled. It is as if the founder had fallen asleep when he had completed the structural or architectural work in which were laid the relics of Sebald, and then, either in his dreams, or in the actual goblin life that was at that time believed still to haunt the mountains and forests of Germany, a train of gnomes and elves had poured in to inspect his work, to haunt and occupy the tomb, or to perform, in elfin fashion, the obsequies of the occupant. Since the stone and wooden effigies, instinct with sudden life, came down from every niche, and pedestal, and altar throughout Rome, to perform the midnight funeral of Pope Formoso (whose body his successor in the papal chair had ignominiously cast into the Tiber), statue and symbol have rarely been so numerously collected in honour of a tomb. But the Roman procession has left its trace only in legend and in poetry. The Gothic gnomes, converted fairies, Christianised cupids, or whatever may be their appropriate titles, have been turned to stone, or rather to metal, by the wand of the artist, and remain mute, but yet eloquent, witnesses of the luxuriant wildness of the Teutonic fancy. The thirty-two saints who guarded the grille of Henry the Seventh must have looked poor and tame in comparison to the Nuremberg host.

The occasion is not inappropriate for putting the question to our friends at South Kensington, 'Why is the cast of King Henry the Seventh, taken from his tomb, allowed to remain mutilated?' Not only has it no hands, but it so distinctly gives the idea of having been taken from a statue the hands of which had disappeared, that it cost the writer another visit to the Abbey in order to make sure that no error had crept into his description of the perfect state of the Royal effigies. Not only are the hands uninjured in the bronze, but their exquisite workmanship forms one of the most striking details of the entire monument. We are sure that it is only necessary to call the attention of the authorities of the Museum to the mode in which

these ungentle hands  
Have lopped and hewed, and made the body bare  
Of the two branches

in order to have the effigy restored to the placid dignity of its sepulchral slumber.

**Doncaster Parish Church.**—A meeting of the committee for restoring the parapet and pinnacles of the parish church was held at the Vicarage on the 2nd inst. At the last meeting an estimate was submitted by Mr. Teale, the architect, of the probable cost of taking down the present pinnacles and replacing them with others of smaller dimensions, which estimate amounted to the sum of 500*l.* Mr. E. Denison, Q.C., offered to contribute one-half the cost of such alteration, on condition that it was carried out on a plan of which he approved. It was also shown that the pinnacles were in a very dangerous state. The result is the starting of a subscription to meet the necessary outlay.

## OUR RAMBLER

AT RUNCORN.

THE course of his wanderings having led your Rambler to Liverpool, he determined to visit the latest addition to the already numerous family of gigantic bridges which span nearly all the principal watercourses of this country; so taking train at Lime Street, where a large hotel in course of construction from the designs of Mr. A. Waterhouse, and the new roof over the recently enlarged station, attracted his attention, works which are well worthy of being described, he travelled to Ditton, at which place commences the new line of which the bridge forms a part.

On alighting from the train, one of the best views of the bridge and of the viaducts at either end of it is at once obtained. The general effect is striking, and at the same time pleasing to the eye. It does not often happen that a bridge and its approaches are seen at a glance, as is the case at Runcorn. Here the railway runs parallel with the river for a considerable distance, and then sweeps round with an easy curve to the right, gradually rising till it reaches the edge of the river, which it crosses at right angles, leaving a clear headway of 75 feet for passing vessels; then curving slightly to the left, it vanishes into the high ground at the back of the town of Runcorn. Thus by standing between the railway and the river on the Lancashire shore, a complete view can be obtained of the works.

After leaving the old line, there is a very heavy embankment, which is succeeded by a viaduct, built on the curve, of very good proportions, and consisting of forty-nine arches, each of 40 feet span, which are, however, interrupted by a small embankment on the top of a hill. We then come to six arches, each of 60 feet span, which are in the waterway of the river. The first portion of the viaduct is entirely faced with Staffordshire blue bricks, which, however much to be commended for durability and soundness, have an exceedingly gloomy effect when used in such large quantities as in the present case; and it is to be regretted that some attempt was not made to enliven the mass by the introduction of a material of a lighter colour; a stone stringcourse at the rail level would have marked the horizontal line of the structure and relieved the monotony of the hue, whereas the slightly projecting course of blue bricks which exists can scarcely be seen. The appearance improves as the river is approached, the piers of the 60-foot arches being of Bramley Fall stone, the superstructure above the springing of the arches being faced with light yellow bricks and coped with stone.

The parapet walls are battlemented, and over the last span they project over the face of the work, and are supported on stone corbels, which are also carried round the abutments and piers of the principal spans. These latter are faced entirely with Bramley Fall stone, and on the abutments are castellated towers of the same material, which are connected by a pointed arch spanning the railway, and forming a very imposing entrance to the bridge.

The whole of the stonework is well executed, and conveys the idea of great strength and solidity; but exception must be taken to some of the mouldings, which are poor in design and too small for the magnitude of the structure.

Will engineers ever condescend to consult architects on matters of ornamental detail? The latter have long since discovered the advantage of obtaining the assistance of the former when they are compelled to employ ironwork in the construction of their buildings, and corresponding advantages would ensue if engineers would avail themselves more frequently of the taste and skill of architects in matters lying more especially in their department.

The girders of the bridge are constructed on the double-lattice principle, with parallel top and bottom flanges. There are three main openings, each having a clear span of 306 ft.; the depth of the girders is 27 ft. The lattice bars are placed at an angle of 45 degrees, and are bolted together at their intersection by 1-inch bolts. They are prevented from buckling by a zigzag trellis-work placed between the outside and inside webs. The top and bottom tables are composed of boxes built up of solid plates and angle irons, to which the lattice bars are attached. The distance between the two girders, of which each span is composed, is 25 ft., affording space for two lines of rails. The floor of the bridge is composed of cross girders about 10 ft. apart and 2 ft. 2½ in. deep at the centre; between them are placed four longitudinal girders—one under each rail; the space between these girders is covered with curved wrought iron plates.

The general effect of the girders is extremely light, the spaces between the lattice bars, which are about 3 feet square, being sufficient to allow plenty of light to pierce the mass, in spite of there being four systems of lattice work, one behind the other. The girders are painted a light neutral tint, which adds to the effect.

A footpath is carried on cantilevers on one side of the bridge, which is approached from the Lancashire side by an inclined path, and on



the Cheshire side by steps cleverly contrived under one of the arches. At this end of the bridge there are three 60-foot dry arches, and thirty 40-foot arches of similar construction to those already described. The total weight of wrought iron used in the work is nearly 5,000 tons, and 300 tons of cast iron. The whole of the plates, angle irons, bars, &c., were planed at the joints, and the rivet holes were all drilled; and so accurately were the drawings prepared and the work executed, that only five or six plates required any alteration to make them fit accurately into their places.

It is unfortunate that the appearance of the structure should have been spoiled by the introduction of a *sham* which might have been easily avoided. We allude to the cast-iron plates which cover the junction of the girders on the piers. These are intended to represent castellated towers of masonry, bearing large shields ornamented with the coats of arms of London, Liverpool, the Railway Company, &c., and are grooved and painted to match the real stonework. No doubt metal was employed because there is not sufficient space on the piers to build towers of masonry, but why attempt to deceive the eye, when an appropriate screen of iron might have been designed which would have been honest and real? The mode of constructing the coffer-dams was novel and ingenious. A scaffold was first erected on the site of the dam, by means of screw piles of wrought-iron, 4 inches in diameter, with cast-iron screws; these were driven through the bed of the river, which is composed of sand and gravel varying from 18 feet to 30 feet thick, into the rock. Cast-iron caps were fixed on the top of the piles to receive the timber uprights of which the scaffold was composed. Cast-iron boxes or caissons, 5'-10" by 5'-0" and 3'-0" deep, were then bolted together, so as to form a hollow column, and lowered into the bed of the river. When they would no longer sink by being weighted, divers were employed, who, working inside, removed the sand from underneath, and eventually bedded them in the rock. Subsequently an air-tight cover was placed on the top of each caisson, and the water excluded by air being pumped into them at sufficient pressure, which enabled the men to work in their ordinary dress. This method is very similar to that described in the ARCHITECT of March 20.

As soon as one caisson had reached the rock, others were sunk on either side of it, and this operation continued till the whole space to be occupied by the pier was enclosed. The lower portion of the caissons was filled with concrete, and the vertical joints between them made water-tight by wooden piles being driven into hollows left for this purpose in the castings, the surplus space being filled with clay puddle. The greatest depth of the foundation is 55 feet below high water. The plan adopted for these coffer-dams answered its purpose admirably, no difficulty being experienced in keeping them free from water. On one occasion they were subjected to a severe trial, owing to the wind having caused the tide to rise to an unusual height, and the water stood within 10 in. of the top of the dam; but this did not cause any interruption of the work, the masons working on in security. The girders were constructed *in situ*; the rapid flow of the tide through the contracted waterway at this point prevented the adoption of the plan, so successfully employed elsewhere, of floating the girders between the piers and lifting them into their places. Nearly the whole of the scaffolding used to support them rested on screw piles of the same construction as those used for the staging of the coffer-dams, and the mass of timber required to carry the great weight of iron must have presented a very complicated appearance.

The remaining portions of the line do not present any special features. It rejoins the main line near Aston, and is about six miles long. The principal object attained by its construction is the decrease in the distance between Liverpool and London, which is reduced to the extent of nine miles; and also some relief to the overcrowded Liverpool and Manchester line; in addition to which it provides a long wanted railway communication with the important town of Runcorn, where a neat and comfortable station has been erected. Whether these advantages will repay the enormous outlay time will show. A suspension bridge was projected to cross the Mersey at the same spot as long ago as 1814, of which Telford was the engineer, but the scheme was abandoned. The central span was to have been of 1,000 feet, and would have greatly exceeded that of the Menai Bridge. Numerous projects have been started for crossing the river at this place, and Mr. William Baker, the engineer to the London and North-Western Railway Company, who designed the bridge we have described, has been fortunate in obtaining so good an opportunity of displaying his ability. The contractors for the whole line were Messrs. Brassey & Ogilvie, the ironwork being undertaken by Messrs. Cochrane, Grove, and Co., of Dudley. The contract sum was 369,591*l.*—but that amount has been considerably exceeded. The line was opened for goods traffic early in the present year, and passenger trains commenced to run over it on the 1st of April.

The works were started in 1863; and considering their magnitude, the time occupied in construction was not excessive.

**Saint Bernard's (Bridgnorth).**—This old hospitiun, or wayfaring house, situate on the verge of the Common of Morfe, has sustained great damage by the late thunderstorm. On May 28, at least 100 tons of the rock behind the house fell with a great noise. A cave, in which were stowed some old carved oak and curiosities, suddenly collapsed, and became one huge mass of boulder stone, smashing outhouses and everything in the way. The loss and damage will exceed 200*l.*

## ENGLAND IN 1669:

## A RETROSPECTIVE REVIEW OF THE TRAVELS OF COSMO III.

## PART II.

Four years before Cosmo visited London more than a hundred thousand of its inhabitants perished by the plague; three years before, thirteen thousand two hundred houses and a hundred and thirty-six churches had been burnt down; and two years before, England had to endure the disgrace of the Dutch fleet riding in the Thames. And although the people had recovered to some extent from the effects of these calamities, yet the gaps made by the fire were in 1669 too evident. So that a more unfavourable time could hardly be chosen to become acquainted with London, and any one who knew continental cities could not help being disappointed at its appearance. Nearly all the public buildings must have been considered as mean: there was not one statue in all the streets, and there were no churches or palaces, like those to be seen in cities that bore no comparison with it in wealth or reputation. It is not then surprising to find it stated in this book, that with the exceptions of the Tower, the Saloon at Whitehall, Westminster Hall, and Lord Clarendon's New House, 'all the edifices were inconsiderable.' The ordinary houses are described as being in general of a common description, not very high, and built of wood and ill-baked bricks. Unlike Paris, there was seldom more than one family in each house. As an edict had been published enjoining that wood was to be used as little as possible, only the framing, doors, posts, &c., were then being made of it. More than five thousand houses had been rebuilt since the fire, in style approximating towards that introduced into Italy, and quite different from what was the ancient fashion here. The streets, too, were being widened and straightened, paved, and channels made at the sides. Buildings were increasing in number every day, to the profit of those who owned ground at a distance from the river, along which no more buildings were allowed to be erected, so as to make the city broader, it being then too long and too narrow; and the Italians were shrewd enough to see that, under such circumstances, Earl St. Alban's (in whose house they lodged), who owned the entire square or place in which his house was (the site of Jermyn Street and its neighbourhood), would soon have it covered with houses. Although we see that London 'continues to grow as fast as a young town of logwood by a water privilege in Michigan,' it is hard to realise the differences in area between the London of to-day and two hundred years ago. How strange it reads that Islington was a collection of houses in the country, that Moorfields 'was a place of two large inclosed squares; this leads to a second, and that again to a third, which are surrounded by abundance of mulberry trees, and add much to the agreeableness of the space of ground occupied by this grand place, which is appropriated to the sale of horses,' and to find the view from the back windows of St. James's Palace described as 'most beautiful and diversified, the eyes wandering over groves, meadows, the canal, Westminster and its suburbs, altogether forming a very lovely prospect!' But it is time we should turn from London in general to the principal buildings it had in 1669, and hear what the Italians thought of them. We will first take Whitehall, where, as Macaulay says, the king kept open house every day, and all day long, and where half the jobbing and half the flirting of the metropolis was carried on. This they describe as being nothing more than an assemblage of several houses, badly built at different times and for different purposes, consisting of lodges, galleries, halls, and chambers, there being about two thousand of the latter. The only thing in it they thought worthy of a palace was the Banqueting Room, 'lately erected according to the rules of architecture, and adorned with pilasters and other decorations.' There could not be much difficulty at that time in determining the site of the scaffold, for they say that on one of the window stools 'are still to be seen drops of blood, which fell there in the execution of that dreadful enormity, so deeply imprinted that they cannot be obliterated from the spot, though they have been frequently washed in the hope of doing so.' Nor do they forget to state how Cromwell, through fear, went secretly every night, first into one and then into another of the numerous chambers, without even his domestics knowing his movements. Of St. James's Palace they thought but little: 'the building is ancient and mean, owing to the rudeness of the materials of which it is composed, and from the irregularity of its structure it has no external appearance of magnificence. It was then occupied by the Duke of York, in whose apartments were seen models of men of war, executed from the Duke's designs; for in 1669, as in 1869, it was a doubtful problem what was the best form for vessels, and both Charles and James were amateur naval architects; Charles in fact being so enthusiastic, that he was willing, if we may believe Burnet, to give even his enemies the benefit of his ability. The chapel was then set apart for the Roman Catholic services for the queen. St. James's Park is described as being surrounded by a wall, and having a long, straight, and spacious walk, intended for the game of the mall, with large elms growing on each side of it. Close by is a canal, the work of the Protector Cromwell, of nearly the same length as the walk, on which are several species of aquatic birds brought up and rendered domestic. The rest of the park is left uncultivated, and forms a wood for the retreat of deer and other quadrupeds. Old Somerset House, at that time set apart for the queen-mother, they thought 'a noble habitation.' In the court-yard was a long pole with a crown on top, set up when Charles was restored. Behind the palace was a garden extending to the river, with walks and elm groves for a shade to those who amused themselves with looking at the boats continually passing and re-passing on the water. Hyde Park was such another place as it is to-day—'many carriages with ladies and gentlemen assembling there of an evening.' They are careful to note that 'its beauty was greatly diminished by Cromwell, who, in order to render the vicinity of London more open, cut down the elms, which were planted in rows.' It was the custom that all persons, when they first met the King and Queen, or Duke and Duchess of York (who often went there), to salute them, but not afterwards. It was the rule, too, that laqueys and footmen were not permitted to enter the Park, but had to remain waiting outside the gates. The only house belonging to the nobility that is described is Lord Clarendon's famous house (which stood on the site of Albemarle Street), probably because it had so much of the Italian style

about it. The people, they say, have given it the name of Dunkirk House, for they consider my Lord Clarendon the cause of Dunkirk having been sold to France, and by this appellation would insinuate that the money gained in the negotiations had been employed in building this palace. It is in an advantageous position, which increases its magnificence, being in front of a wide street leading down to St. James's Palace, which is directly opposite it. Its form is square, the outside embellished with stone ornaments according to the rules of architecture, and is extremely light and cheerful, the interior being commodious and sumptuous. The garden is surrounded by walls, which support flourishing espaliers formed of various fruit trees, which render the view very agreeable, although the garden has no other ornament than compartments of earth filled with low and beautiful parterres and spacious walks. The next place we come to is Covent Garden, and this is what it was like in 1669: 'Two sides are occupied by houses, one by the façade of a church in a good style of architecture, and the other by the palace of the Earl of Bedford, the trees of which project over the walls, they not being raised much above the ground; and in the middle of the square is erected a pillar on which are several sun-dials, which serve for emblems, enlivened by various mottoes, one of which, alluding to the hours, says, "Perent et imputantur." Near Covent Garden (somewhere about the site of the present Adelphi Theatre) there existed in the Strand, in those days, a Burlington Arcade sort of place, called the New Exchange. Although it had been only sixty years built in 1669, the Italians describe it as having lost its colour from age, and become quite blackish. It contains two long and double galleries, one above the other, in which are distributed, in several rows, great numbers of very rich shops of drapers and mercers, filled with goods of every kind, and with manufactures of the most beautiful description. They are, for the most part, under the care of well-dressed women, who are busily employed in work, although many are served by young men called apprentices.' As we accompany them down the 'great street called the Strand,' we next meet with old Temple Bar, which then 'served as a residence for some collegians, who study the ancient Norman language, in which are written the laws of the kingdom relating to the administration of justice; there are many masters appointed to instruct them and qualify them for pleaders.' In the chapel of the Temple they saw, on the pavement, many figures in basso-relievo, representing several knights in armour, with the badges of the order.

After leaving the Temple, we follow the Prince and his suite to the black ruined stone heap that the fire converted old St. Paul's into. At the time they visited the ruins, a great part of Inigo Jones's portico was left, and as it might be expected, from being in the Italian style, they thought highly of it, 'and its stones worked with great perfection and symmetry according to the rules of the Corinthian order.' Of what was left of the rest of the church they say, 'one sees only a huge heap of stones cemented together by the lead with which the church was covered; this, when melted, fell amongst the ruins, which have entirely covered the relics of antiquity that were there formerly, and demolished many splendid monuments, both of Catholic bishops and other distinguished men.\* The difficulties with which, as Carlyle says, brave Sir Christopher had to contend, arising from foolish unarchitectural bishops, red tape officials, and idle Nell Gwyn defenders of the faith, seem foreshadowed in the observation, 'that the king, in order that the memory of this temple may not be lost, has resolved to restore it, not indeed to place it again in its primitive and magnificent condition, which could not be accomplished but at vast expense, but to render it fit for the worship of the Anglican sect, and sufficiently capacious to contain the people.'

Two hundred years ago it was the fashion to dabble a little in science. Charles had not long founded the Royal Society, and instead of wild dreams of politics, wilder dreams of science occupied the thoughts of many people. Through the influence of John Evelyn, Gresham College (with a collection of books belonging to Lord Howard, of which he didn't know the use) was made over to the Society, and as we are in the City with the Prince we may take the opportunity of visiting in his company the 'King's Privy Council for Philosophy and his Great Council for the three Estates of Mathematics, Mechanics, and Physics,' as Graunt styled the Society. It would appear that the Prince did not visit it on a Thursday, the day on which the Society met, after dinner, as there is no account of the proceedings. We get a glimpse, however, of their museum, at that time in charge of 'Doctor Robert Hook, a man of genius and of much esteem in experimental matters,' in which, amongst other strange things, were 'an ostrich whose young were always born alive, an herb which grew in the stomach of a thrush, the skin of a Moor tanned with the beard and hair white; but more worthy of observation than all the rest is a clock whose movements are derived from the vicinity of a loadstone, and it is so adjusted as to discover the distances of countries at sea by the longitude; towards this the planets or satellites of Jupiter are of great service.' At the head of the scientific men of that day stood the Hon. Robert Boyle, who, as Herschel says, seemed animated by an enthusiasm of ardour which hurried him from subject to subject, and from experiment to experiment, with a sort of undistinguishing appetite. He was visited by Cosmo, and his character must have made a deep impression on Magalotti, the chronicler of this traveller's history. 'If in his person,' he says, 'the true belief had been united with correctness of a moral life, nothing would have remained to be desired,' and it is said he endeavoured to remove the one imperfection by trying to convert him. Boyle was after making his improvements in the air-pump, and great things were expected to be done with its assistance. The Prince was shown 'many beautiful experiments to discover the effect of the rarefaction and compression of air upon bodies, by observing what took place with animals when exposed to it, and hence may be learned the cause of rheumatism, catarrhs and other contagious disorders produced by air, and of various natural indispositions.' The air-pump has done good service to science, but somehow with all its help the rheumatism and catarrhs unfortunately continue amongst us. The Prince saw an instrument that indicated and registered the changes in the weather 'by means of a watch, a thermometer, a mariner's compass, and a small sail like that of a windmill,' another in-

\* It is curious how closely the Italians' description agrees with the entry in Evelyn's Diary for September 7, 1669.

strument that might be useful nowadays in technical education, 'as by its aid a person who has never learned, may draw any object whatever; a globe of the moon, of peculiar construction, and several other things worthy of attention,' with all of which he gratified his curiosity in the most agreeable manner. There was another visit he made in connection with science which deserves to be recorded, and that was to the Marquis of Worcester's engine at Vauxhall for raising water, which is thus described: 'It raises water more than forty geometrical feet by the power of one man only, and in a very short space of time will draw up four vessels of water through a tube or channel not more than a span in width, on which account it is considered to be of greater service to the public than the other machine near Somerset House.' It is curious that no notice is taken of the principle of the machine, its appearance or size, nor is it possible to infer from this description whether any use was made of it for the public, but there's little doubt it was our first steam engine.\* The other machine near Somerset House, which conveyed the river water to a great part of the metropolis, is described as being raised upon a wooden tower, and put in motion by two horses, which were continually going round.

(To be continued.)

## THE LAW AND SCIENCE OF ANCIENT LIGHTS.

By HONORABLE COX, M.A., BARRISTER-AT-LAW.

### PART I.

#### Legal Principles.

IN suits and actions respecting ancient lights, a material question usually arises as to the extent of the injury experienced or apprehended. The plaintiff has for many years enjoyed the access of light to his windows, and they are obscured, or about to be obscured, by the erection of contiguous buildings. How is the obscuration to be measured? The published investigations of this subject are very imperfect, and some of them show a ludicrous ignorance of well-established principles of optics. The evidence of the persons who, by legal courtesy, are called 'experts' is often absolutely worthless; and in various papers read before learned societies respecting this subject, the methods of calculating obscuration are, I do not hesitate to say, so utterly erroneous that they fail to give even approximately accurate results.

The question, besides its practical importance, is one of great interest both to the lawyer and the mathematician. It unfortunately happens that an exact solution cannot be obtained without mathematics; and hence an objection may be urged with reference to the process about to be explained, that it is too scientific and abstruse. The law, it may be argued, will not take cognisance of the niceties of mathematics, but will deal out justice by broader and simpler rules. The answer to this argument is, that accuracy is a primary condition of justice, and that unless the rules of optics are applied with precision, at least in establishing the general theory of the subject, the grossest injustice may sometimes be inadvertently committed. Besides, when the general theory has been settled, the application of it is extremely simple, and requires nothing more than a rudimentary knowledge of arithmetic and surveying.

Judges continually lay the greatest stress upon the degree of obscuration. For instance, in the case of *Martin v. Headon* (2 Law Rep. Eq. 425), before Vice-Chancellor Kindersley, that very eminent Equity judge observes, with reference to the particular case before him:—'The quantum of sky-area which the new elevation shuts out is about thirteen degrees measured horizontally, and eight or nine degrees measured vertically. That is in itself a very small portion of the total sky-area visible to a person looking out of a vertical window where there is no obstruction; which area is of course 180 degrees measured horizontally, and 90 degrees measured vertically. . . . But, at the time when the defendant commenced his new building, a very large portion of the sky-area was already shut out of the plaintiff's workshop window by pre-existing buildings, and only a very limited portion of sky-area remained available for that window. And the question is, not what proportion of the total sky-area does the defendant's new erection shut out from the plaintiff's window, but what proportion does it shut out of that proportion of the sky-area which was not already shut out by existing buildings.'

This passage is quoted because it shows very clearly the general character of the problem to be solved. I shall endeavour to show hereafter that the principle of the calculation here given is incomplete, and that in many cases the obscuration is to be measured, not by the degrees or angular measurement here indicated, but by a proper linear or superficial measurement. This judgment, however, is in other respects very valuable and instructive. It shows that the subject, unlike most other branches of law, is essentially quantitative. To the same effect may be cited *Webb v. Hunt* (14 W. R. 726, and 'Weekly Notes' of 1866, p. 166), where it was held that a deprivation of nearly one-half the light enjoyed by the plaintiff's windows justified the interference of the Court.

#### SECTION I.—The Right derived from long enjoyment.

For the sake of clearness it will be necessary to explain some of the more important features of the law of ancient lights. In the first place the right is dependent on long enjoyment. The modern rule in this respect is contained in the following section of the Prescription Act (2 and 3 Will. IV. c. 71 § 3.)

'And be it further enacted that when the access and use of light to and for any dwelling house, workshop, or other building shall have been actually enjoyed therewith for the full period of twenty years without interruption, the right thereto shall be deemed absolute and indefeasible, any local usage or custom to the contrary notwithstanding; unless it shall appear that the same was enjoyed by some consent or agreement expressly made or given for that purpose by deed or writing.'

The right is therefore statutory, and is based upon uninterrupted enjoyment for a period of 20 years. Upon this point it will be useful to quote

\* Why do all writers on the steam engine that mention this visit give the date of it as 1666 instead of 1669?

Lord Westbury's judgment in the House of Lords in the case of *Tapling v. Jones* (11 H. L. Cases, 290), which was argued most elaborately. Lord Westbury says, 'The right to what is called an ancient light now depends upon positive enactment. It is matter *juris positivi*, and does not require, and therefore ought not to be rested upon, any presumption of grant, or any fiction of a license having been obtained from an adjoining proprietor. . . . After an enjoyment of an access of light for 20 years without interruption the right is declared by the statute to be absolute and indefeasible; and it would seem therefore that it cannot be lost or defeated by a subsequent temporary intermission of enjoyment not amounting to abandonment. Moreover, the absolute and indefeasible right which is the creation of the statute is not subjected to any condition or qualification; nor is it made liable to be affected or prejudiced by any attempt to extend the access or use of light beyond that which having been enjoyed uninterruptedly during the required period is declared to be not liable to be defeated.' Lord Westbury goes on to criticize, with his usual acuteness, the expression 'the right to obstruct a new light,' which he regards as fallacious. The right is that of a man to use his own land, though his so using it may obstruct the light received through the window of an adjacent house.

When it is said that the right depends upon 20 years' uninterrupted enjoyment, it must be understood that the word 'enjoyed' in the statute does not necessarily imply that the building for which this right is claimed must be occupied, or even fit for occupation, during the whole of the 20 years. This point was raised (January, 1869), in the recent case of *Courtauld v. Legh* in the Court of Exchequer (4 Law Rep. Common Law, p. 126). There the plaintiff's house was completed as to its external and internal walls, roofs, floors, and windows, more than 20 years ago, but the fittings, papering, and painting were not completed, and the house was not inhabited or rendered habitable until about 15 years before the date of the action. Yet the Court of Exchequer held that the statutory right to light and air was complete. The house and windows were 'enjoyed,' not by occupation, but by ownership.

It follows, from the principles already laid down, that the owner of ancient lights cannot, on the one hand, destroy his privilege as against his neighbour, nor, on the other hand, extend that privilege by enlarging his windows. The neighbour has a right to obstruct his new windows, or new portions of windows, but, on the other hand, he must not do so in such a way as to obscure the old lights. Such is the effect of the curious and instructive case of *Tapling v. Jones* above cited. The plaintiff had made extensive alterations of his house, and lowered the first and second storeys and the windows in them; but the new windows occupied part of the site of the old apertures. The defendant, after these alterations were made by the plaintiff, erected a lofty warehouse, which obstructed the whole of the plaintiff's lights. The plaintiff thereupon caused them to be restored to their former state as to size and position, and called on the defendant to restore the former enjoyment of light and air. The case occasioned a great diversity of opinion in the Courts below, but when it came before the House of Lords, there was a unanimous opinion in favour of the plaintiff. Lord Westbury asked whether a man having an absolute and indefeasible right to a certain access of light could defeat it by opening new windows, and answered the question in the negative. The opening of new windows was not in a legal sense an injury to the neighbour. He might obstruct the new portions; but not so as to darken the old lights. He considered that the defendant's wall, so far as it obstructed the ancient apertures, was an illegal act from the beginning. Lord Cranworth to the same effect said:—'He has a right to build, and if thereby he obstructs the new lights he is not committing a wrong. But what ground is there for contending that because his building so as to obstruct a new light would afford no ground of complaint, therefore, if he cannot so build without committing a trespass, he may commit a trespass? I can discover no principle to warrant any such inference.'

It will be observed that this important decision of the Supreme Court of Appeal in 1865 enormously increases in practice the privilege of free access for light, and in crowded cities like London greatly restricts the power of erecting new and lofty structures overshadowing a neighbour's land. It was forcibly argued at the bar by Sir Roundell Palmer, that if the defendant might obstruct the new lights only, and not the old with them, the effect would be that a person who has an ancient window may acquire a right to any number of additional windows by so contriving their position as to place them completely under the protection of the ancient window. Undoubtedly this consequence must often follow in practice from the decision in *Tapling v. Jones*. One side of a building may be a great dead wall, with the exception of a single aperture. The owner may open out as many more as he pleases, and they will all enjoy the privilege of the first, if his neighbour cannot obstruct the new without obstructing the old.

#### SPOTON II.—Rural and Urban Occupiers.

Another controversy of equal importance refers to the relative rights of rural and urban occupiers. In the case of *Clarke v. Clarke* (1 Law Rep. Ch. Ap. 16), Lord Chancellor Cranworth is supposed to have held that the right to access of light was not so extensive in towns as in the country. His Lordship said:—'Persons who live in towns, and more especially in large cities, cannot expect to enjoy continually the same unobstructed volumes of light and air as fall to the lot of those who live in the country. The steady spread of buildings in and round large towns gradually but surely obstructs some of the light and air which the houses in the interior of the place formerly enjoyed. And, in estimating the damage, if any, occasioned to the plaintiff, we must not omit the consideration that the place in which he complains of obstruction to light and air is a large and populous city.' This dictum led to rather alarming consequences. It might be inferred that occupiers in towns were to submit to a greater degree of injury than dwellers in the country; and two of the cases which followed seem to have been based on that principle (*Durrell v. Pritchard*, 1 Law Rep. Ch. Ap. 244; *Robson v. Whittingham*, *Ibid.*, p. 442). In both those cases Lord Justice Turner expressed his assent to the principle laid down by Lord Cranworth in *Clarke v. Clarke*, and added, 'I think that this class of cases had been carried too far before the decision in *Clarke v. Clarke* was pronounced.'

Obviously these decisions of the Appellate Courts affected the very founda-

tion of the law of ancient lights. The litigation almost universally arises with respect to houses in towns; and if the proposition is established that the occupiers of such houses are to submit to encroachments which would not be tolerated in the country, it is not difficult to see that by degrees all the light which could be obstructed by neighbouring structures might be taken away with impunity. It seems, however, clear that either Lord Cranworth was misunderstood, or that he changed his opinions; for in a later case of *Yates v. Jack* (1 Law Rep. Ch. Ap. p. 295), decided in March, 1866, he fully recognised the rights of urban occupiers to the unimpaired enjoyment of their ancient lights. The case seems to show that such an occupier is entitled to substantial preservation of all his light—not merely of so much as suffices for the trade in which he happens to be engaged—but of all that may be required for any future purpose. This latter proposition, however, is apparently in conflict with Lord Westbury's decision in *Jaackson v. the Duke of Newcastle* (33 Law J., Ch. 698), and must be received with the qualifications and limitations stated by Vice-Chancellor Wood (now Lord Hatherley) in the case *Dent v. Auction Mart Co.*, to be mentioned presently. Lord Cranworth's words are—'The right conferred or recognised by the statute 2 & 3 Wm. IV. c. 71, is an absolute indefeasible right to the enjoyment of the light without reference to the purposes for which it has been used. Therefore, even if the evidence satisfied me—which it does not—that for the purpose of their present business a strong light is not necessary, and that the plaintiffs will still have sufficient light remaining, I should not think the defendant had established his defence, unless he had shown that for whatever purpose the plaintiff might wish to employ the light, there would be no material interference with it.'

Only four days later (March 28, 1866) Vice-Chancellor Wood gave his judgment in the case of *Dent v. Auction Mart Co.* (2 Law Rep. Eq. 238), and observed that the decision of Lord Cranworth, last mentioned, removed the difficulty occasioned by his observations in *Clarke v. Clarke*, and proceeded:—'I cannot suppose the Lord Chancellor or the Lord Justice to mean that in reality there is any substantial difference between the right which a plaintiff has to seek the protection of this Court when he lives in a town and that which he would have if he resided in the country.' In the case of *Martin v. Headon* (2 Law Rep. Eq. 425), Vice-Chancellor Kindersley followed this decision of Vice-Chancellor Wood, and added that, 'with respect to the right of the owner of ancient lights to be protected against any obstruction to the access of light and air to his windows, there is no distinction between houses in towns and houses in the country.'

(To be continued.)

#### THE STRIKES IN THE BUILDING TRADE.

IN Yorkshire and Lancashire the masters have just issued an appeal to all operative masons not belonging to the Union, offering them work as old hands with especial advantages. The appeal, which is signed by twenty-eight of the principal building firms in Leeds, Sheffield, Manchester, Wigan, Bradford, Wolverhampton, and Coventry, states that every effort which has been made by Lord Lichfield, Lord Elcho, Mr. Hughes, M.P., Mr. Mundella, M.P., Mr. S. Morley, M.P., and other gentlemen connected with the building trade, has been of no avail, and they now have come to the determination to offer the following terms: to all masons employed by the undersigned in Manchester 7½d. per hour, 54½ hours to constitute a week of 33s.; Bolton, 7½d. per hour, 54½ hours per week, 38s.; Leeds, 7½d. per hour, 50 hours per week, 30s. 3d.; Coventry, 6½d. per hour, 57 hours per week, 30s.; Sheffield, 7d. per hour, 56½ hours per week, 32s. 6d.; Wolverhampton, 6½d. per hour, 56½ hours per week, 32s.; Bradford, 7½d. per hour, 50½ hours per week, 30s. 6d. The masters also propose to pay the railway fares of men, at the end of a fortnight, from whence they came; or if at the end of the month the terms of employment are not satisfactory, the master will pay the mason's railway fare back, and also protect the new hands from all annoyance and molestation.

#### WENDOVER PARISH CHURCH.

THE parish church of St. Mary has during the past year been undergoing a thorough restoration, both internal and external, and on the 1st inst. the edifice was re-opened by the Bishop of Oxford. The church is of the Gothic style of architecture, with square embattled tower, nave, with north and south aisles, and chancel. The interior of the edifice presents a marked contrast to its condition before the restoration. On the south side the old tracery in the windows has been cut out, and refitted with new tracery as in the original edifice. The plaster covering the external walls has been removed, and the surface newly faced in flint, with Bath dressings. The old brick buttresses have been destroyed, and new flint-faced and stone-dressed ones erected in their place. Most of the buttresses around the building are entirely new. The singular brick buttresses at the tower have also been re-faced with stone and flint. The clerestory walls have been brought down to a level with the nave arches. The different roofs are entirely new, except those of the side aisles, which are re-leaded. The nave roof has been raised to its former pitch and new tiled, the chancel and chancel aisles being also tiled. The old porches have been taken away, and new ones erected in their place. The windows have been re-glazed with cathedral glass. The interior has also been thoroughly renovated. The floor is paved with Lugwardine tiling, ornamented in the chancel. An oak credence table placed in the chancel is deserving of notice. The altar rail is of brass, with ornamental scroll-work. The communion table is of handsome make in oak, and is covered by a splendid altar-cloth. There are, too, some very handsome oak stalls in this portion of the edifice. The seats are open, and of oak throughout the building. There is a new font of Caen stone, the work of Mr. W. Thompson, of Aylesbury, from a design by the architect. The oak stalls are by Mr. Cooper, of Aylesbury. The roof inside is of open deal.

The cost of the whole work amounts to about 4,000l., the greater portion of which has been supplied by Colonel Smith and other members of the family. The architect is G. E. Street, Esq., A.R.A., diocesan architect; the contractor, Mr. G. Cooper, of Aylesbury; and the stonework is by Mr. W. Thompson, of the same place.



## NEW BLACKFRIARS BRIDGE.

AS far as regards the ironwork and the piers, the new bridge may be said to be complete. The ironwork has had two coats of paint; the last to be given is one of a rich bronze green. The outer iron spandrils of the arches are covered at the intersections of the lattice work with large ornamental bosses, much after the pattern of the well-known heraldic rose. These decorations are to be richly gilt, and the colour contrasts which will be afforded by the gilding, the bronze green, the red polished granite, and the white carved stonework, will make this bridge, as seen from the river, one of the most beautiful works of its kind. All the granite columns have been fixed, and polished to the smoothness of an agate. Each column stands on a richly-carved pedestal of white Portland stone, and is surmounted by a most massive capital carved in birds, flowers, and sea and river weeds. Four of these capitals have been finished. The other four are well in hand. Above these capitals will be placed the carved recesses, in each of which branched lamps will be placed as beacons to warn the passing river traffic by night where the sharp-edged piers are. A double row of lights like this will certainly be necessary on a bridge where the footways are 15 feet broad and the roadway nearly 50 feet. About two-fifths of the whole bridge have already been paved with buckle-plates. The abutments on the Surrey side are finished. These are noble monuments of stone work. They rise with the solidity of the old Egyptian temples, and with a massiveness that is really grand. They are each surmounted with bold, splendidly-carved cornices, and when seen at low water, rising to a height of nearly 60 feet from the shore, have a most imposing effect. Nearly all the ornamental parapet-work has been delivered at the bridge, but only a few short lengths have been placed in position. It is a very ornate specimen of Venetian Gothic in its most florid style, and does great credit to the founders. From the inside of the bridge this parapet will appear rather low, being only 3 feet 6 inches in height. From the river, however, it will look bold and sufficiently lofty, as it will stand on the summit of a rich cornice. The new bridge will cost altogether about 320,000*l.*, or at the rate of about 4*l.* the superficial foot. At this rate it will be one of the cheapest permanent bridges yet built in London.—*The Ironmonger*, May 31.

## LIVERPOOL MANURE WHARVES, SANDHILLS.

THESE extensive and convenient premises, in course of erection during the last twelve months, have been completed, and will be at once delivered to the Corporation by the contractor, Mr. Wells, of Birkett Street. The building, wharves, and other works have been constructed from designs by Mr. Newlands, the borough engineer, and are very suitable for their purpose. The building itself, which fronts Commercial Road, is 535 feet in length, the main elevation being ornamental in appearance. In the centre are the stable-lofts and other apartments, the stables being in wings on each side. At the north and south ends respectively are the general superintendent's and stable-keeper's houses. The yard and wharves to the canal boundary are about 180 yards in length by about 50 yards in depth, and occupy an area of between two and three acres. The stables, commodiously arranged and substantially finished, are six in number, and contain accommodation for sixty-five horses. In connection with the main building there are also a large storehouse, smithy, wheelwrights' shop, and veterinary hospital, and, immediately adjacent, is an engine-house with chimney 60 feet high, together with a cookhouse for cooking the horses' food by steam. The yard and the stables extend about 35 yards towards the canal on a high level. Beyond this again are the wharves, extending to the edge of the canal, which at this point has been widened to the extent of six yards. The wharves immediately on the edge of the canal are 15 yards in depth, running in length 150 yards, uniform with the canal as widened. A strong pier-wall has been erected at the canal, with two projecting piers at each end, extending to the ordinary east boundary of the canal, and forming a basin to the wharves. Over this basin six iron tips, each 42 feet in length, have been erected, and from these tips the manure will be discharged from the carts into the boats. Provision is also made for the manure being discharged into railway waggons as well as into the canal boats, and to effect this a railway connected with the Lancashire and Yorkshire line runs along the wharf, immediately under a high level boundary wall, from which the manure can be discharged direct from the carts into the trucks. Facilities are therefore afforded for the quick despatch of the manure both by railway and canal. There is also another similar line running parallel with it over the wharves, and connected with the Yorkshire and Lancashire Railway, this last branch having been specially stipulated for by the Earl of Derby for the accommodation of his tenantry and property in that locality. On the opening of the new establishment at Sandhills the Phillips Street wharves will, in all probability, be closed.

## PRE-HISTORIC REMAINS.

THE Rev. Canon Greenwell, of Durham, has concluded a survey of the ancient roads, camps, cairns, Druids' circles, and pit dwellings of Northumberland. Two cairns were examined at Burgh Hill, parish of Rothbury, on the south side of the Coquet, and just to the north of the fine British camp at Lordenshaws, on high ground, at the east end of the Simonside range. The whole district abounds in remains of pre-historic times. Not far to the west of the Lordenshaws camp is another interesting one at Tosson, to the north of which four cists, containing unburnt contracted bodies, were found, with two urns, two large jet buttons, an iron spear-head, a bronze buckle, and a club made from a red deer's antler. One of the human skulls has been engraved by Drs. Davis and Thurnam. Afterwards, in a hollow between two large stones, and about midway between the two camps named, and upon the slope of Simonside, two bronze, leaf-shaped swords, with three rings, and the pommels of the sword handles, were found, and are now in the museum of the Duke of Northumberland at Alnwick Castle. On the north side of the Coquet, and about three miles

from where the above-mentioned relics were deposited, another bronze sword was found, with two rings. This is in possession of Sir William Armstrong, at Craggside. Large stone cairns crown the ridges of the hills. The first cairn was 32 feet diameter, and 5 feet high. In the centre was a cist made of four slabs of stone, set on edge, and covered by a single slab 5 feet by 4 feet and 7 inches thick. The bottom was the natural surface of the ground. The cist was quite empty, the body buried there having gone entirely to decay. This is almost always the case in ancient burials, where, as in a cairn of stones, the air has free admission. No relics had been interred with the body. The second cairn was a few yards to the west of the first, 26 feet diameter, and 4 feet high. At the centre was a cist formed of four slabs set on edge, with a cover 3 feet by 2 feet 3 inches, with a second and smaller one laid on the top of it. The body had been laid in the cist, and then covered with light sand, but, as in the preceding opening, not the least trace of it was found. Among the sand were pieces of charcoal and sherds of British pottery. Within the camp at Lordenshaws were two (if not three) 'hut circles'—the foundations of the humble habitations in which these early people lived. One of these was examined by clearing out the soil which had accumulated within it. It was not quite circular, having a 19 feet N. and S. diameter, and a 17 feet E. and W. The surrounding wall was 3 feet thick, and 14 inches high, and in some places was very regularly laid in courses of carefully selected stones. The entrance had been on the S.E. side, but from the walling being somewhat destroyed the exact width could not be made out. On the south and east sides the hut had been flagged. None of the floor stones showed signs of fire, but there were several showing fire action found above the floor. A row of floor stones extended round the circle, and at the north-east side one had been used as a grindstone, and was worn quite smooth. One flagstone had a hole bored through it. No charcoal, potsherds, bones, or flints were found, nor anything which showed sign of habitation except the burnt stones and the two floor-stones named. One relic, supposed to be a whetstone, was, however, found. Two places of sepulture were examined on the north side of the Coquet upon Cartington Fell. One was a flat bowl-shaped cairn, of large size, in the centre of which was a cist. Near the cist was a deposit of burnt bones, the remains of a body which had been burnt on the spot, and covered with charcoal and a flat stone. About 100 yards north of this cairn was a circle of large stones, eight of which were standing and one laid down. The inner diameter of the circle was 14 feet. These stones were partly enclosed within a cairn, 28 feet diameter and 3½ feet high, and it is probable that at one time the inner space of the circle had been filled with stones since removed for walling purposes, and that the circle was within a cairn. At the centre was a hole which contained the bones of a burnt body.

## ILLUSTRATIONS.

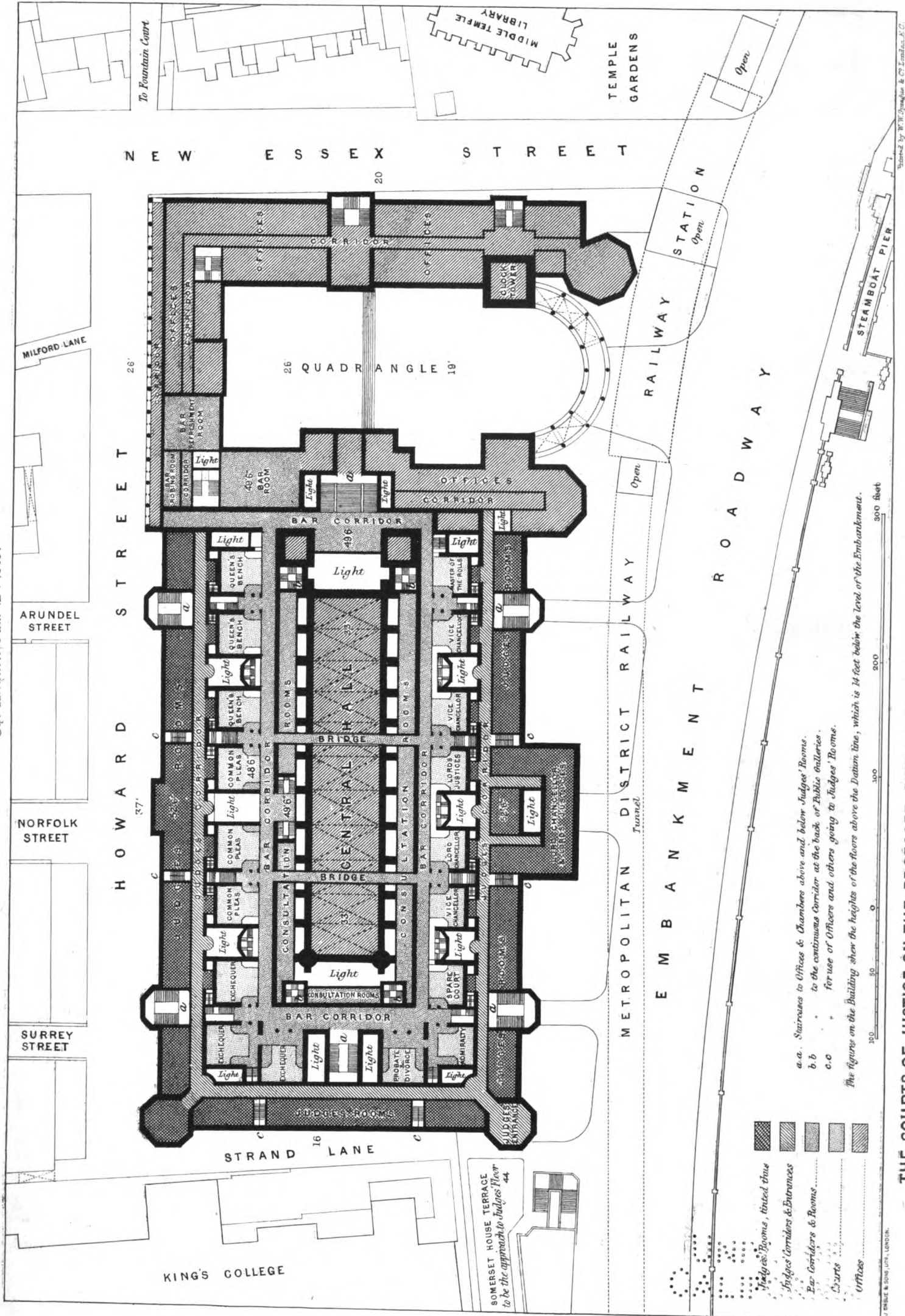
## THE BERLIN CATHEDRAL COMPETITION.

IN a recent issue (No. 20) we presented to our readers a collection of the twelve principal plans which attracted attention during the Exhibition of Designs for a new Protestant Cathedral for the capital of Prussia, and we alluded briefly to the history of what, up to this moment at least, is barely more than a *good intention*. We say barely, because, as our readers are aware, a beginning was at one time actually made with the Campo Santo, the works of which were, however, stopped in the year of Continental trouble, 1848. In the present issue we return to this subject, in order to give a page of some of the elevations, and so to complete our information concerning a competition which, considering the scale and character of the proposed edifice, may not unjustly be called one of the most important since the Reformation. In doing so, we think a few words on each design may not be unwelcome.

No. 1. *Stüler*.—On comparing this elevation with Plan 3, it will be found not to agree. This is because the late M. Stüler submitted two designs, and the plan exhibits the first of these. In 1855 he submitted another, only retaining the Campo Santo and centre projecting portico, and it is this second design of which we give the front elevation. A reference to Plan 3 will show an interior space of 223 feet by 210 feet divided into a nave 80 feet wide by 140 feet high, with a series of round arches rising to a height of 55 feet, and containing galleries. The nave is flanked by four aisles and the ceilings throughout are flat, only broken by iron girders under the principals. Behind the portico of seven openings rose the gable of nave 159 feet high, having on either side two enormous towers 352 feet high.

The Campo Santo is a court 183 feet square, surrounded by cloisters, the inner walls of which are to contain Cornelius' frescos, and on the eastern side are arranged the Royal Mausoleum and the vestries. Colonnades connect the building with the Palace on the right and the Museum on the left; this idea has been retained by most of the present competitors (see plans 2, 3, 4, 6, 8, 9, 10). The interior decoration is in mosaics, frescos, marble, bronze, and gold; the exterior of brick, with terra cotta ornamentation to string courses and openings. The *second* design differs considerably from the first, the chief feature being the dome, 135 feet diameter, which rises to a total height of 320 feet to foot of lantern. The façade immediately over the portico shows that the four aisles have given place to two only, but the way in which the three bays rise above the seven arcades is not quite happy. The treatment of the dome is in Italianised Romanesque—the angle towers, however, with their storeyed arcades, are purely Italian.

No. 2. *Orth*. Plan No. 9. The general arrangement of this design is a space 160 feet square for festival services, having on its western side the church, 160 feet by 50 feet. The whole is surrounded by arcades 20 feet wide, running round three sides, whilst the fourth contains the chancel with apsidal end, and two chapels for christenings and weddings. Eight very slight columns, placed so as to form four large and four small sides, carry a dome 100 feet diameter. The portico, in front of which is a terrace with altar for very great open air occasions, is connected by arcing, with two octagonal towers 190 feet high, whilst the dome is 240 feet high. The style is modern-German Romanesque, with purely classic details in pilasters and architraves.



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FIG. 1.

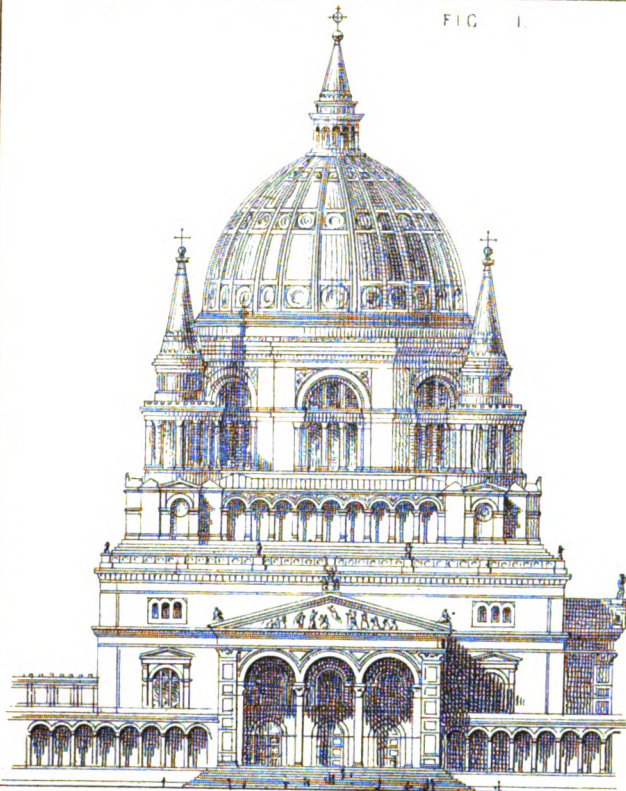
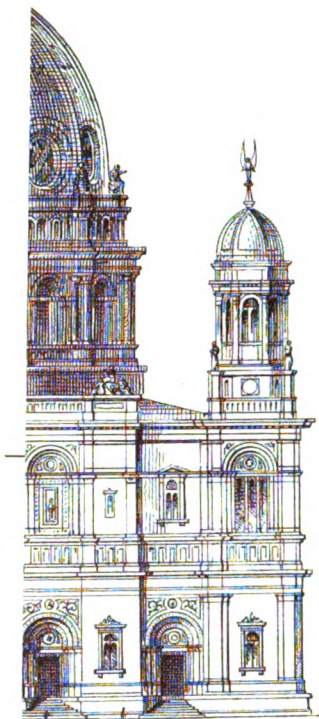


FIG. 4.

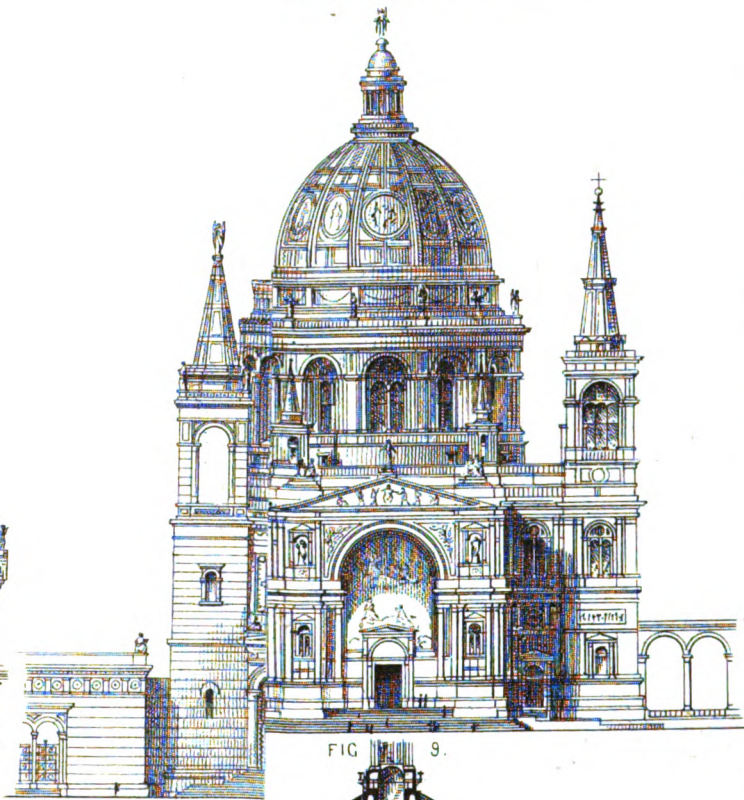


FIG. 9.

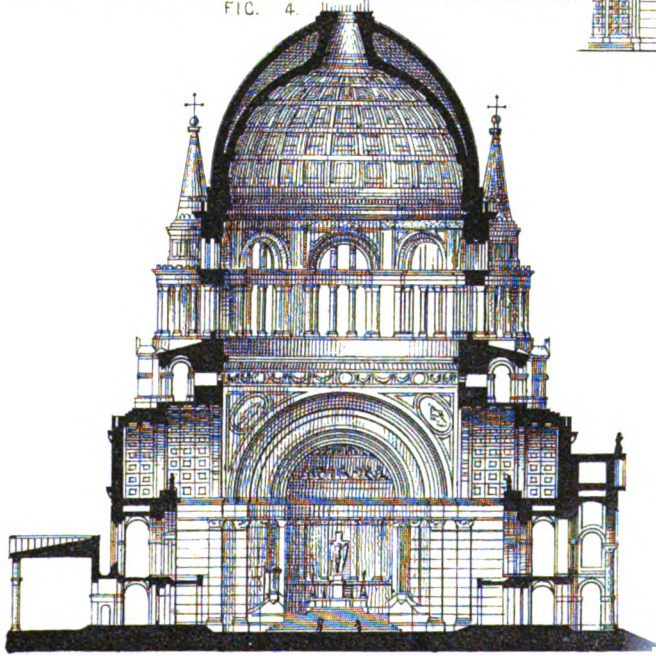
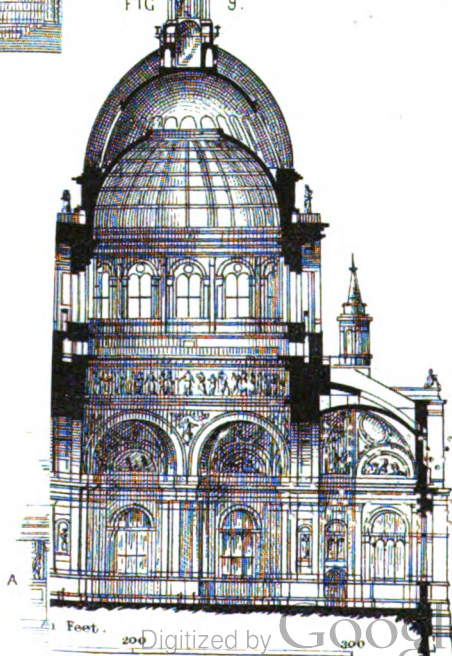


FIG. 5.



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No. 3. *Ende and Boeckmann*. Plan No. 1.—Here, too, there is an arrangement for festival and ordinary occasions, and the altar is placed midway so as to serve both purposes. The easternmost part resembles a huge chancel with its aisles on either side, in which are slightly raised galleries indicated on plan. A dome 120 feet diameter rises from a square central space, the cut-off corners being large enough to form chapels for ceremonies of a partly private character, and the north and south arches supporting the dome lead to shallow transepts, whilst the west arch opens upon the pronaos or vestibule, the latter, however, still forming an integral portion of the church. The west front is 140 feet high, flanked by towers 240 feet high, which in their upper storeys are octagonal, surmounted by small domes. The great central dome is 345 feet to foot of lantern, and reminds us of St. Peter's at Rome, especially in the treatment of the two pilastered storeys immediately under the springing of the curve.

No. 4 and 5. *Adler*. Plan No. 10.—Four massive piers, only broken up by narrow staircases leading to the galleries, support, at a height of 150 feet, an octagonal structure 60 feet high, above which rises a dome (circular on plan) to an altitude of 300 feet from the ground to foot of lantern. Three of the four arches, 100 feet high, contain galleries in two storeys, one 20 feet from the ground, the other at the level of the springing of the arch, but further back, and over the two storeys of corridors which, on the ground-floor, almost surround the entire church (see section). On the fourth or east side is the chancel ending in an apse, which is circular within, but octagonal without. Three arched bays, surmounted by a flat pediment, form the portico. The octagonal drum under the dome, with its cornice at a little more than middle height, reminds one of Santa Maria del Fiore at Florence, but there the resemblance ends, for whilst in the latter instance the upper half of the drum is pierced by circular windows, and carries an octagonal dome, Mr. Adler's design shows semi-circular openings spanning the width of a group of three lights in the lower half and supports a circular-ribbed dome. The details are Renaissance, and the material is taken as stone throughout, a circumstance not without pecuniary drawbacks in a district naturally so peculiarly destitute of that commodity.

No. 6. *Gropius and Schmieden*. Plan No. 12.—The plan of this design would please Mr. Spurgeon; it is essentially a "congregational" arrangement. A central space, 130 feet square, with the corners cut off and formed into niches, is bounded on three sides by high semi-circular arches, with galleries in the shallow transepts. The staircases to these galleries are arranged in the corners which reduce the external contour into a simple square. The fourth side is occupied by the chancel and vestries. The octagonal centre rises to a height of 130 feet, upon which is placed a circular arcaded drum 90 feet high; on this rests the dome, which is 310 feet high, with an exterior diameter of 150 and an internal one of 130 feet. The top of the dome is formed by an iron ring nearly 70 feet in diameter, which admits of the introduction of a huge top light, and upon this rests the lantern, ending in a spire. A portico of seven openings by two deep is surmounted by a flat pitched pediment, and is flanked by two square towers about 225 feet high, the cornices and string courses of the main building returning round the same. The material is brick throughout, with occasional use of terra-cotta.

No. 7. *Eggert*. Plan No. 11.—This design is in plan not unlike the last; by a series of ambulatories and projecting porticoes on the south and west, some valuable space seems uselessly sacrificed, but for the greater advantages gained in the treatment of the exterior. A dome, 112 feet diameter, reduced to 100 feet higher up, occupies the centre, resting upon four wide and four narrow arches, and rising to a height of, 260 feet to foot of lantern. As in most of the other designs, galleries are arranged in either shallow transept; the western opening contains the choir and organ, placed high, so as not to intercept the effect of the dome on entering. The vertical portion of the central space under the dome is 177 feet wide, and at a height of 126 feet terminates in a rice cornice; from this springs the dome, the thrust of which is taken by the massive piers forming the four angles of the square substructure. The elevation presents a singularly varied and imposing exterior. The front of the short nave or pronaos is formed by a bold arch flanked by short towers in which the arch form is repeated in a modified degree, and the great rose window under the arch is crowned by a flat gable in which we recognise some of the characteristics of Rhenish Byzantine. Behind this *spreads*, not *rises*, the main building, flanked by two towers at the angles, 150 feet high, and beyond this rises the dome. A row of 20 windows are divided by slightly projecting pilasters, then comes a low tier of arcading, whence the dome rises out of a series of semicircular openings, with a gable and a 'victory' over each. The style is Byzantine although not without a feeling of Italian Renaissance, particularly in the towers.

No. 8. *Klingenberg*. Plan 6.—This is an Italianised Germanised 14th century Gothic design, owing to which fact it was honourably mentioned on account of the merits of the plan rather than of the elevation. Upon 12 unnecessarily massive piers rests a dome 126 feet diameter; the sides of the polygon are 60 feet high and only 33 feet long, notwithstanding the great diameter of the space obtained, and the arches in these sides are 22 feet in the clear, opening on to a sort of polygonal aisle, 20 feet wide, running round the central space, but interrupted in the east by the chancel, and in the west by a nave 65 feet by 40 feet, and intended for ordinary services. Over the encircling aisle galleries are arranged, 30 feet from the floor of the church, which seems somewhat too high for practical use; it has the effect, however, of *getting them out of the way*. The west front of the nave is 75 feet high, the chief feature being a pointed enriched and recessed arch flanked by two octagonal towers. On the right and left is a 'Gothic' arcade, behind which rises the main structure of the church, led up to by a series of 'ridge and valley' roofs over the aisles and small chapels. Twelve enormous windows, nearly 80 feet high, are divided by flying buttresses partially filled in; then follows a low storey with three arches over each window, and thence springs the circular dome, crowned by a lantern, the top of which is 370 feet from the ground. The exterior dome itself is 275 feet high, and there is a second internal one only 250 feet high. The materials for this design are brick and stone.

Nos. 9 & 10. *Heyden and Kyllmann*. Plan No. 2. This design seems

to show more than any other, more even than that by Mr. Orth (plan 9), a somewhat satisfactory solution of the 'two churches' theory, and in giving greater prominence to the space for ordinary services than Mr. Orth was able to do, these gentlemen have hit upon the hexagonal arrangement for the festival portion, utilising the surrounding chapels for that purpose. The sides of the central hexagon, which carries the dome, are 55 feet wide; from a sub-base spring a series of clustered columns, over which, at a height of 50 feet, runs an entablature round the whole church. The arches are surmounted by a high frieze ornamented with a continuous fresco-painting. A gallery runs round the central space above this, as at Boulogne, and then twelve well-proportioned windows, divided by pilasters, form the drum of a flattened dome 100 feet diameter and 220 feet high from the floor of the church. The space intended for ordinary service consists of a space 70 feet square and 100 feet high, covered by a very flat dome, with two smaller squares on each side also covered with domes, and communicating with the larger hexagonal chapels. There are no galleries, except one for the organ at the west end, and curtains shut off the larger space on ordinary occasions. The portico consists rather of an enormous *porte cochère*, with a triumphal arch as high as the Arc de l'Étoile at Paris. Beneath it is placed an equestrian statue of the King. On either side rise two towers together, with their spires 240 feet high, between which is the dome, 280 feet to foot of lantern. The twelve-sided drum at its base is deeply recessed, giving great richness to this part of the structure, and is surmounted by a cornice and balustrade broken up by pedestals and statues. The circular windows in the dome give light to the top open ring of the inner dome. The design collectively and in its details is Italian Renaissance, and would harmonize, more than any of the other designs, with the Castle on the one hand and the Museum on the other.

No. 11. *Spießberg*. Plan No. 4.—Four angle piers, broken up by small circular recesses, carry a flat dome 115 feet diameter and 250 feet high. As in some of the other designs, three of the main arches open on to flat transepts. Beyond the fourth arch is the chancel which forms the base of a tower originally designed 500 feet high, but afterwards lowered to 400 feet, as shown. The west front is composed of a large arch 90 feet high by 50 feet broad, filled in with an independent arrangement of doors and windows, and the whole crowned with a flat gable. The four angle towers do not detach themselves from the main building until 130 feet high, when they end with octagonal sides and pointed domes. Between them is the flat dome, resting on a twelve-sided drum, having strongly marked pilasters at the angles, and pierced by a series of rose windows. Beyond rises the tower over the chancel, octagonal on plan, and with a pointed dome. The design, which in parts is almost Saracenic, is supposed to be in brick, with a liberal use of terra-cotta.

We have thus concluded a brief description of this very interesting set of competitive designs. The elevations—which, for want of space, we have not been able to include in the present double sheet of engravings—are those of Messrs. Schinckel, Stier, and Von Quast—plans 7, 5, and 8. We have added at Figs. 12 and 13 the outlines of some of the chief buildings which at present more or less surround the site, in order to give an idea of the relative heights of these buildings, compared with those of the designs which we have just described.

A, Fig. 12, is part of Schinckel's Royal Museum, in strictly Greek (Ionic) style, the first stone of which was laid in 1824. The side at right angles to the site for the cathedral is 276 feet long, and is externally but one storey in height. Kiss's celebrated 'Amazon and Tiger,' as well as his other great work of 'The Man and Lion,' are on either side of the broad flight of steps leading to the interior. The tower (b) shown in outline behind the Museum belongs to a church situated at some distance to the east of the church on the Gensdarmen Markt; its height is 225 feet, and it is a copy of those on the Piazza del Popolo at Rome. The building in outline c is the present cathedral alluded to in our article of May 15. It now occupies the site of the proposed cathedral, and would, of course, come down, but a comparison between its minute proportions and those of the would-be successors is interesting.

The building d, Fig. 13, shows a portion of the Royal Palace, which occupies one of the sides of the Lustgarten, at right angles to the site of the Cathedral and facing the Museum. The building, which is Rocco Renaissance in style, has a frontage of 626 feet, and contains in its main parts four storeys 102 feet in height. Part of it was begun as far back as 1538, but was altered and finished between the years 1699 and 1710. The designs are by the elder Schlüter, who began the building; but, he falling into disgrace at Court, it was continued by Eosander and Von Göthe, and finished by Böhme. The dome, e, in outline behind it, is part of this Palace, and is 220 feet high. The great tower, f, to its left, is some distance from the site, and belongs to the new Hôtel de Ville, now in course of erection. A model of this building was in the Paris Exhibition two years ago. Mr. Wäsemann is the architect, and the building is estimated at four million thalers (600,000l.).

The particulars of a new competition are shortly expected; they will probably exclude the Gothic style as unsuited to the city of Berlin, and the attempt to arrange two separate spaces for ordinary and grand occasions will be abandoned as impracticable. The plans and elevations we have reproduced from the *Deutsche Bauzeitung*, a small but well-written Berlin journal devoted to architecture.

#### THE NEW LAW COURTS.

WE give, this week, the ground plan of Mr. Street's design for the New Law Courts as proposed by him for the Thames Embankment Site, and a block plan showing the building with the adjoining streets, &c., to illustrate its position and approaches.

After the account of this design which we gave in our last number it will suffice if we extract, in explanation of the illustrations now furnished, a passage from Mr. Street's Report which he has addressed to the First Commissioner of Works. He remarks:—

'The shape of the ground is so completely different from that which I had to deal with, in making the previous plans, that I have had to



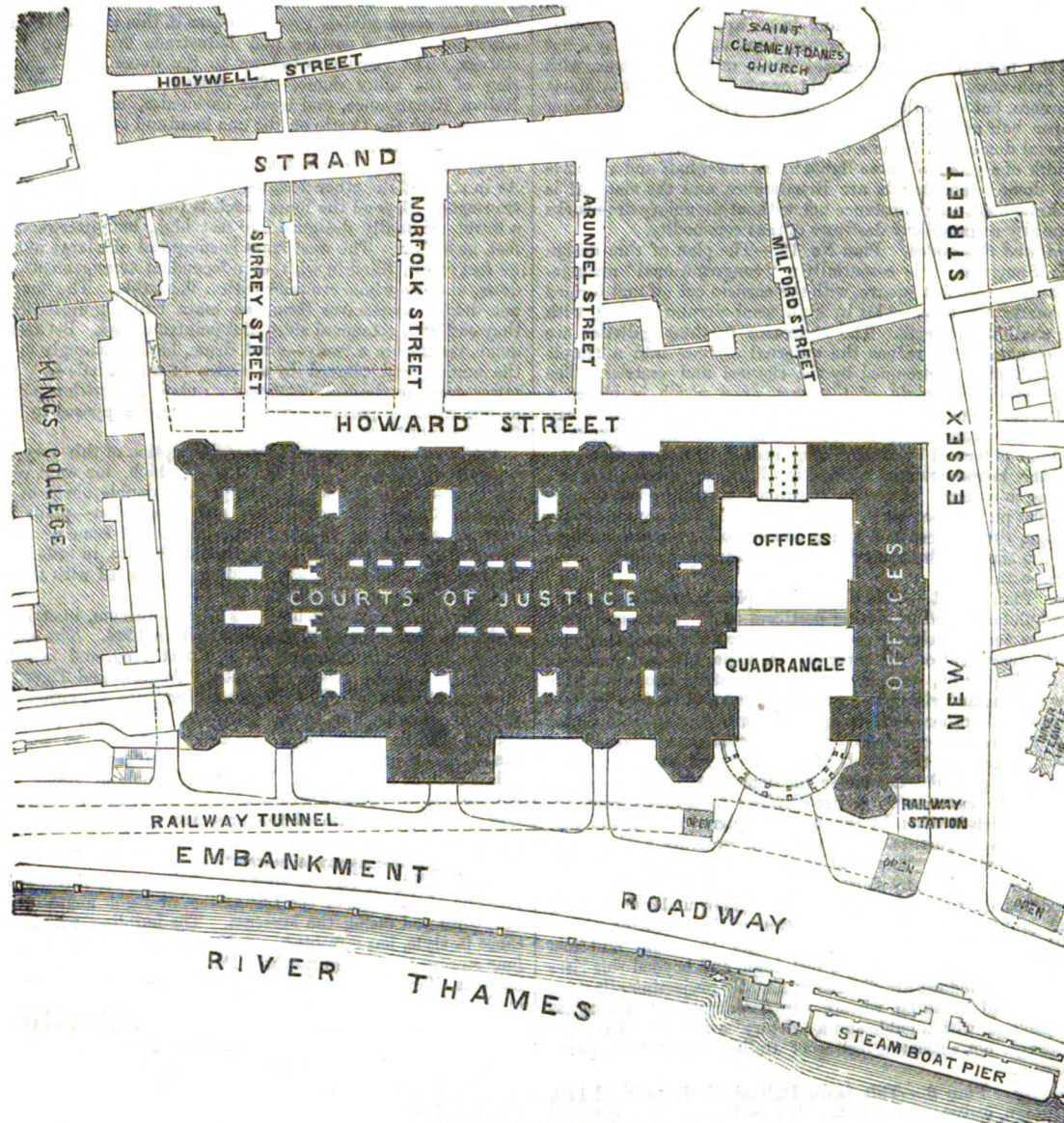
re-arrange my whole scheme. My principle was, from the first, to separate the Courts from the Offices by internal streets and quadrangles; and, in the plan approved by the Courts of Justice Commission, this principle was carried out as completely as possible. If it can in any way be accomplished, I am persuaded that this is the arrangement which will secure the greatest simplicity and ease in the use of the building, and cause the least confusion; and though I think it will be impossible to secure it completely on the Embankment site, I have still kept the same principle in view, and have adhered to it as closely as I could.

The broad feature of my plan now is, that I put the Courts, Central Hall, and all the Rooms for Juries, Witnesses, and the Public, to the western side of the site, and the great group of Offices round a Quadrangle to the east of it. But, as the upper and lower portions of the buildings which surround the Central Hall and Courts would not be required for their use, I propose to provide some of the Offices—as, e.g., the Vice-Chancellors' Chambers—above and below the Judges' Rooms. They are so planned as to staircases and mode of access as, I believe, to minimize any confusion which might otherwise arise

from their neighbourhood to the Courts, and their position will no doubt be felt by the Judges to be better than it would have been in my former plan.

The arrangement of the Courts and Rooms connected with them is substantially the same as it was in the plan approved by the Commission. In that plan I was always pinched for space between the Strand and Carey Street, and I was compelled therefore to make the small internal areas for lighting the rooms below the Courts themselves smaller than I would have wished. I am able, in the new plan, to give a few more feet to each of these areas, and so to make a great improvement by putting the Jury Rooms immediately under the Courts, whilst I also improve the Jury Staircases and provide Lobbies at the back of the Bench to all the Courts, as well as improve the light to a number of rooms and corridors.

I propose to give the public an entrance to the Central Hall in Howard Street, opposite Norfolk Street, and other entrances at its eastern and western ends. In this way every facility will be given for access to the Courts which surround this Hall, whilst it will not form a natural line of thoroughfare for people who have no business



THE NEW LAW COURTS.

to transact in it. The public coming from the Railway, the Steamboats, or the Embankment, will all enter by the Eastern Quadrangle. But, to prevent the annoyance which would be caused if this were used as a public carriage thoroughfare, I propose to make its pavement at two levels, divided by a terrace or flight of steps across the centre. Carriages then will be able to enter the Quadrangle either from the north or from the south, but will have to return by the way they came.

A good deal has been said as to the access for the Judges; and as it has been held to be important that they should not have a great height to mount to their rooms, I propose to avail myself of the roadway already existing on Somerset House Terrace for their benefit. They will probably always come to the Courts from the Embankment roadway, and I assume that some carriage access will be contrived from thence to the western side of Waterloo Bridge, so that they will be able to drive or walk to an entrance only some ten or twelve steps below the level of their own rooms. Here they will have, as in my previous plans, a continuous corridor, entirely without

disturbance by the professional or general public, whose staircases will not open into it. I can also provide a Judges' entrance in Howard Street, or on the Embankment, if it is thought desirable to have either of them.

The Bar Rooms will, I think, be best placed to the north-east of the Central Hall, where they will be most easy of access from both the Temple and Lincoln's Inn.

The Royal Commission on the New Law Courts held a meeting on the 4th inst., which was attended by Mr. Lowe and Mr. Layard, and it was unanimously agreed that a committee should be appointed to examine minutely all the questions of measurement and cost.

#### THE MUNICIPAL OFFICES, LIVERPOOL.

In the view of this building, given May 29, we inadvertently mentioned Mr. Robson alone as the architect. We are asked by Mr. Robson to state that the original plan and design was by Mr. John Weightman, now an Alderman of the Corporation of Liverpool.



## REVIEWS.

THE YEAR BOOK OF FACTS IN SCIENCE AND ART. By John Timbs. Lockwood & Co., 1869.

Mr. Timbs' annual work has made its periodical appearance for a long series of years. But though in this sense old, it is always new in matter. The present volume is illustrated with a portrait, and prefaced with a brief but interesting biographical sketch, of Mr. Joseph Whitworth, F.R.S., to whom mechanical science is already so much indebted, and who has so munificently provided for its advancement in the future. The main portion of the work is as usual compiled (with due acknowledgments) from the scientific journals or daily papers of the preceding year. It makes no pretence to be more than a methodical scrap-book, fixing the transient image of the ephemeral press, and thus affording a review of the most important discoveries and improvements of the year, so far as they have come generally under the notice of the reading public. The subject matter is grouped under the several heads of Mechanical and Useful Arts, Natural Philosophy, Electrical Science, Chemical Science, Natural History (subdivided into Zoology and Botany), Geology and Mineralogy, Astronomy and Meteorology. An Obituary is likewise given. A general index adds to the completeness of the whole. The work is in reality a common-place book; but when this is said, it must be recollected that the common-places of our day frequently contain much more of marvel than the fairy tales or stories of enchantment of olden time. Most will find something, some many things, instructive, or at least interesting, in its pages—things, it may be, which the daily drive of occupation has forced them to skip in the half-read magazine or journal.

MATERIALS FOR A HISTORY OF OIL PAINTING. By Sir C. L. Eastlake, P.R.A. London: Longmans, Green & Co.

The second volume of Sir Charles Eastlake's 'Materials for a History of Oil Painting' concludes, though unfortunately it does not complete, the researches which Sir Charles instituted into the various processes and modes employed by the old masters in the production of their works, and unfortunately also it leaves off at what to artists would have been one of the most interesting portions of the work; that is, an investigation into the materials and modes of painting of the Venetian school. Nor is there also any detailed account of the practice of the Spanish painters. As it is, however, we have in these volumes a very fair history of the development of oil painting, and a sufficiently comprehensive description of the different articles employed, with their effects in time, to form a groundwork for what might be termed a science of art materials. The work is necessarily of a somewhat technical character, and consequently more interesting to the artist or amateur than to the general public.

The volume before us opens with an account of the Hospital of S. Maria Nuova, founded in 1285 by Folco Portinari, the father of Dante's Beatrice, and for the chapel of which he commissioned Cimabue to paint a Madonna. A century and a half later, another Portinari added to the decorations of this chapel several works, among which were two, by Memling and Van der Goes, apparently the first oil paintings exhibited in Florence. From this time, the time of Antonello da Messina, the practice of painting in oil was more and more generally adopted by the artists of Italy. Considerable distrust was at first expressed of the new style, and indeed for a long period, long after all doubt of the permanency of oil painting had been set at rest, we find artists working partly in tempera and partly in oil, and this either for the sake of some fancied additional security, or for certain qualities and excellences found to result from the combination; the latter reason being the most probable, at least if we may judge from the effect of certain modern pictures executed in this way, and which have appeared at recent Royal Academy Exhibitions.

Before proceeding with his inquiries into Italian art, our author recapitulates his account of the practice of the Flemish painters. They, it appears, painted almost entirely 'alle prima,' and consequently used varnishes with their colours without any subsequent application. These varnishes are all described, and we learn that the one in most repute, and which in its results has proved most successful, is that made from amber, 'vernice d'ambra,' and this Sir Charles informs us may now be made with great excellence. We remember the late Sir David Wilkie prepared some for his own use, and he applied it to one or two of his pictures: whether it was badly made, or whether the materials previously employed did not agree with it, we know not—the result eventually proved anything but satisfactory.

The advantages of oil painting over tempera, namely, increased roundness and depth, fusion of tints, and richness of colour, could not fail to impress the painters of Italy, and we find that the three great pupils of Verocchio—L. di Credi, Pietro Perugino, and Leonardo da Vinci—eagerly adopted the new mode, and carried it to a great length. The last was the most daring innovator of the three, painting, as he did, solidly in a purplish negative tone on a ground tinged with yellow to counteract the subsequent work, but without always finishing (and notably in the 'Mona Lisa') with such warmer colour. The latter circumstance may be partly owing to the artist's dislike to disturb the delicate modelling of his preparation, or it may be the result of the cold inky tones of the same, eating through the delicate glazings and 'sfumato' tints of the final painting. This practice of modelling in negative or 'dead' colour was one employed by many subsequent painters. Correggio, we are informed, prepared his flesh in this way, though in his draperies and back-grounds he was mere disposed to paint at once; and our own Sir Joshua treated several of his portraits in the same manner.

Want of space prevents us from describing the manner of Raphael, Fra Bartolommeo, and the other artists referred to by the author; and we pass to the concluding and most interesting chapter—on the methods of the Venetians. And here the reader cannot fail to perceive how well calculated were those methods to produce that rich and delicate colour which has given in this respect the palm to this school. The subject having been sketched in, with such alterations as the composition may have demanded, the whole was painted solidly and boldly, after which the much-prized

'sfumato' appearance was obtained by scumbling light over the picture and with a view to the final glazings: thus Titian would go over his skies with a yellowish or cream colour, somewhat like the practice of the modern French. To correct any excess of softness in this stage, a more 'colpoggiato' or touched effect was produced by crisping the lights, and the work was then ready for the final diaphanous painting, which resulted in that combination of depth, richness, and subtle grey, that forms the characteristic charm of the works of this school.

In considering the practical advantages to be derived from these researches into the modes of painting, and materials employed by the old masters, we find that as regards the former, the exigencies of modern art require in many cases a different course to be pursued. As the ancients confined themselves chiefly to the representation of Scriptural or classical subjects, in which realism was neither attempted nor deemed desirable, they were enabled so far to conventionalise their compositions or their forms as to leave themselves at liberty to paint their pictures in various stages. Now-a-days, the necessity for a faithful rendering of the subject, for a conscientious delineation of the appearances of nature, combined with the increased eclecticism of modern art, prevent us from always pursuing the same course. If, however, we are prevented in this respect from availing ourselves largely of the experiences of our predecessors, there is no such objection to our study of the materials which they employed. How great is the necessity for some such study it is almost needless to state. An examination of the works of deceased British artists is sufficient to prove the importance of the point. We find them either cracked, faded, or smoky and black, evidencing that ignorance of their materials which the artists themselves deplored. And at the present time matters are not much improved. If we ask half a dozen different men what ground they paint on, what medium or colours they employ, we find that no two work alike, and hold the very vaguest notions of the chemical action of the articles they use. In considering the remedy for this deplorable ignorance, the first thing which occurs to us—and we think the suggestion worthy of grave consideration—is, that the Royal Academy should appoint some competent chemist to investigate the nature and action of the various materials employed in art, and to record his experiences for the benefit of artists. Such is the progress of modern science that one might predetermine in many cases the eventual effects of time, and these labours of Sir Charles Eastlake would form an invaluable clue to the study of the past. Nor would we have the materials for oil painting to form the only subject for study. Mural decoration is growing so largely into favour, and so little is known as to the best methods of executing it, that they would also form a proper subject for investigation. We have seen the miserable results of fresco as applied in the House of Lords; and if we may trust the opinion of a friend, a pupil of Kaulbach, it is doubtful whether the water-glass method employed by Mr. Herbert is calculated to achieve any great degree of permanence. Judging from the remains in our old ecclesiastical buildings, distemper appears most suited to stand the English climate; but much light might be thrown on the whole subject by proper scientific enquiry, for it must not be supposed that because this country is comparatively cold and damp, it is necessarily injurious to works of art. Rembrandt, as Sir Charles points out, employed certain vehicles and varnishes, which in the dry heat of Italy would have cracked and blistered, but which secured for his pictures perfect durability in the chillier and more humid atmosphere of the north, and we have no doubt that in this country similar compensations might be obtained. Something or other ought to be done. It is lamentable to think of the works of a Landseer or Millais injuring or perishing like those of Reynolds and Wilkie; and although much knowledge and experience might be attained by the individual artist, nothing like thorough and comprehensive information on the subject can be obtained otherwise than by a scientific and properly directed course of study.

To the latter part of the present volume the editor has appended a series of essays, or rather sketches of essays, on art, compiled by Sir Charles at different times. These, so far as they are theoretical, read very much like most essays on art; but they are combined with many excellent hints on practical matters, likely to be of considerable service to artists.

In conclusion we may state that this work is of great value to all who are interested in the subject, and we trust it may induce the authorities either at Burlington House or South Kensington to institute some such course as that above indicated, and enable us to take advantage of the information which the late President has given us in his 'Materials for a History of Oil Painting.'

## PARLIAMENTARY PROCEEDINGS.

## Military Labour.

In the Commons, on the 4th instant, Mr. HANBURY-TRACY asked the Secretary of State for War whether the necessary work required in the external painting and whitewashing of the Royal Artillery and East Infantry Barracks at Aldershot, for the performance of which tenders had been invited by public advertisement, could not be undertaken by military labour, under the direction of the commanding Royal Engineer of the district; and what would be the saving effected, including advertising, if soldiers were employed to do the work, paying them by the piece according to the existing regulations.

Captain VIVIAN said, it had been found difficult to employ military labour in this particular work, because, in order that the work might be done efficiently, it must be done continuously, and Aldershot was a camp of instruction, to which the troops were brought for short periods of time. The experiment was tried in 1866, and though several workmen were brought in to assist military labour, work which usually took three months occupied five months, and the estimate considerably exceeded the ordinary amount.

## The Courts of Justice.

Mr. BENTINCK asked the First Commissioner of Works whether the sketch of the new design for the 'Courts of Justice Building,' now in the Library, and bearing the name of Mr. Street, had been approved by Her Majesty's Government for erection on the Thames Embankment; whether he adhered to his recommendation, made in that House on May 10 last,

that the style of the new building should be the 'Gothic employed by the Italians in the early part of the fifteenth century,' and whether he was of opinion that the new design fulfilled that condition; whether the three towers connected with the new design were intended for the preservation of documents or to serve any useful purpose besides that of ventilation, and what was their probable cost; and whether he would exhibit in the Library the elevation of the 'river front' and 'park front' of the Westminster Palace, designed by Inigo Jones, and engraved in the works of Inigo Jones, published by Lord Burlington and Kent.

Mr. LAYARD said that when his hon. friend asked him if he approved of the sketch of the new design referred to for the Courts of Justice building he would say that it was never his fortune to see a more beautiful and artistic piece of work; but he would remind his hon. friend that the elevation was a mere sketch. If the House should approve of the erection of the Law Courts on the Embankment, he should think it his duty to have a model placed in the Library, or some other part of the House to which members might have access, and so be able to form an opinion. As to the second part of the question, he begged to say that he did not recommend that the style of the new building should be the 'Gothic employed by the Italians in the fifteenth century.' What he did say was that he thought Gothic was the most appropriate style for the English Law Courts. He did not advocate Ecclesiastical Gothic, but said that the Italians had made use of Gothic for a similar purpose in the fifteenth century, and that such a building might be erected without having recourse to Ecclesiastical Gothic. As regarded the three towers, this was a mere sketch, and therefore he could not answer the question of his hon. friend. With respect to the fourth part of the question, the river front of Inigo Jones had been exhibited for some days in the Library, where it might be seen by his hon. friend.

#### Clerks of Works.

Mr. M. CHAMBERS gave notice, on the 7th inst., that on going into Committee upon the Army Estimates, he would call attention to the anomalous position of the clerks of works and clerks of the Royal Engineer Department, and to the denial of pensions to their widows, and that he would move a resolution declaring these clerks entitled to the same rights and privileges as other non-combatant members of the military service.

#### The London Sewage.

On the 8th inst. Colonel FRENCH asked Her Majesty's Government what was the result of the inquiry as to the formation of a bar across the Thames, below Barking, from the sewage of London.

Mr. BRUCE replied that Mr. Rawlinson, the well-known civil engineer, had been instructed to inquire into the subject. He had made a preliminary inquiry, and had given notice of a public inquiry, which was to be held on the 21st inst. That investigation would be prosecuted with all due diligence, and the report, when made, would be laid upon the table of the House.

### LEGAL.

#### Court of Queen's Bench.—June 2.

(Sittings in Banco, before the LORD CHIEF JUSTICE and Justices MELLOR, LUSH, and HAYES.)

#### HINCHCLIFFE AND ANOTHER v. THE QUEEN.

This case came before the Court on a writ of error. The plaintiffs in error were tried at the last assizes for Yorkshire, at Leeds, before Mr. Justice Lush, for conspiracy for molesting workmen and others at Sheffield. The indictment contained twenty-four counts. They were found guilty and sentenced to fourteen months' imprisonment. It was contended that the conviction was bad, on the ground that the verdict was returned on the indictment generally, whereas the eleventh count, which charged them with endeavouring to coerce James Howell to become a member of the Master Builders' Association, disclosed no offence, and that upon that count the verdict ought to have been entered for the defendants. Conviction affirmed.

#### Vice-Chancellors' Courts.—June 7.

(Before Vice-Chancellor Sir R. MALINS.)

#### RIDGWAY v. GRAVES.

This suit arose in consequence of the fire by which Her Majesty's Theatre was destroyed in December, 1867, on which occasion the defendant's gallery of pictures was destroyed. He had proceeded to rebuild such gallery, and the plaintiff, who is one of a firm of army agents in Waterloo Place, and whose premises were not injured by the fire, complained of a diminution of his light, that the height of the wall was almost double, and the opinions of various scientific men were taken in favour of that view. On the other hand, witnesses on behalf of the defendant deposed to an opposite view, both parties themselves giving evidence.

The VICE-CHANCELLOR said:—The whole matter was in anticipation of injury, and it greatly depended upon the height to which the wall of the new Opera House was carried, the old one being, as was agreed, of the height of 75 feet. It was a question which could be judged of by the actual facts, and the wall complained of, built by the defendant, being raised scarcely 2 feet, and the gutter, according to the present mode of proceeding, under the Commissioners of Works, being non-projecting, he (the Vice-Chancellor) was satisfied that the plaintiff had as much light substantially as he had before. Of all the ten or twelve clerks employed by the plaintiff none had made affidavits. The bill ought never to have been filed, and it must be dismissed with costs.

#### Court of Exchequer.—June 7.

(Sittings in Banco, before the LORD CHIEF BARON, Mr. BARON BRAMWELL, Mr. BARON CHANNELL, and Mr. BARON CLEASBY.)

#### DAVIS v. TAYLOR.

This was a demurrer to a declaration. The issue to be determined in the cause is a very important one, as similar questions must be constantly occurring. The defendant is an architect, and the plaintiff is a builder who

had performed some work under a contract to be paid for upon the certificate of the defendant that the work had been properly done. The declaration in substance alleged that the defendant, without reasonable and probable cause, withheld his certificate when he knew the work had been properly done; that, to injure the plaintiff, he maliciously and fraudulently withheld the certificate, and the plaintiff could not obtain payment from the person for whom the work had been performed. The declaration was demurred to on the ground that there was no contract between the plaintiff and defendant, and no circumstances out of which could be implied a duty towards the plaintiff in respect of a breach of which the plaintiff could sue. The declaration set out an agreement between the plaintiff and the building owner, in which it appeared that the buildings were to be erected to the satisfaction of the defendant, an architect, and payment was to be made by the building owner upon the defendant certifying that the work had been properly done.

Mr. MILWARD contended that there was no contract between the plaintiff and defendant, and no duty imposed on the latter. An architect in such a position was as an arbitrator, against whom no action would lie.

Mr. HOLKER urged that the action would lie, because the defendant, having taken upon himself the position of architect, an office similar under the circumstances to an arbitrator, was liable to an action for breach of duty if he acted dishonestly; and also that, if there were no duty, yet the defendant having been guilty of a malicious act causing damage to the plaintiff, an action would lie against him at common law.

At the conclusion of the arguments, the Court took time to consider judgment.



#### TOMBS IN WESTMINSTER ABBEY.

SIR,—There is, fortunately, no reason to fear that the features of the effigies of 'the Virgin Queen' and those of 'her more lovely and unfortunate cousin' are likely to be tampered with by the cleansers of the brazen effigies. Maximilian Colte, the sculptor, worked in alabaster, and, with the exception of minor details, there is no gilding about the figures, and absolutely no bronze to be interfered with. I venture to call your attention to this fact, because the notice of the Countess of Richmond's tomb in your impression of May 29 not only implies that the effigies of Elizabeth and Mary are of bronze and gilt, but tacitly consigns two more royal tombs into the hands of the restorers. I need hardly say, Sir, that considering what is in prospect for the early monuments, we cannot take too much care of those of a later period which are left unrestored.

I am, Sir, obediently yours,

ALBERT HARTSHORNE.

June 4.

### NEW BUILDINGS AND RESTORATIONS.

**Great Northern Railway Church at Peterborough.**—On the 28th ult. the Bishop of Peterborough consecrated this church, which has been built for the locomotive establishment of the Great Northern Railway Company at New England, about a mile north of the Peterborough Station. Mr. Teale, of Doncaster, is the architect. The church is 104 ft. long and 48 ft. wide, and has a low central tower, but no transepts, a pyramidal roof covered with the stone slates of the country, and a semi-circular apse.

**The Foundation Stone of the memorial church of St. John the Evangelist, at Lineal-cum-Colemere, near Ellesmere, was laid on June 2.** The church was designed by Mr. Street, architect, London, and the plans are to be carried out by Messrs. Powell and Son, of Brees, the contractors. It will cost upwards of 2,000*l.*, and is the gift of Lady Marian Alford, in memory of John, late Earl Brownlow. In anticipation of its completion it may thus be described:—Built of Cefn freestone, in the Early Gothic style of architecture, to seat 236 persons. Its form a simple parallelogram, consisting of nave, chancel, and chancel aisle, with open timbered roof, and carved ribs. The bell turret, between the nave and chancel, rising at the division in the roof between the chancel and nave, and to have two bells. In the body of the church five two-light windows with tracery heads, and a three-light lancet-headed window comprised under one arch in the west gable. The chancel terminating in a gable window of five lights in tracery; its roof being boarded internally, and divided into panels by moulds and ribs.

**Gloucester Cathedral.**—A great work is being carried forward in Gloucester Cathedral. The restoration of the choir has already been executed; the stone tracery of the two easternmost windows on the north side has been taken out and renewed, and the re-glazing commenced; the three remaining windows have to be restored. The exterior work in the south transept is completed. The chapels dedicated to St. Andrew and St. Paul are restored; and some progress has been made in the restoration of the chapel of St. Philip, which is to form the memorial to the late Sir C. W. Codrington, M.P. The entire work will cost 40,000*l.*

**Wilmslow New Schools.**—On the 1st instant, the new Sunday, day- and infant schools, just completed, at Wilmslow, near Macclesfield, in connection with the parish church, were formally opened. Built of grey brick, they are relieved by slight touches of red, in arches, bands, string-courses, &c. The framework of the windows is of stone; the roofs are of slate, in two colours, arranged in patterns. The tracery of the windows has ornamental glazing, which has been done by Messrs. Edmundson & Co. The new schools will accommodate 350 scholars, and combine separate rooms for girls, boys, and infants, together with a master's dwelling-house. The fittings include the latest improvements, the seats and desks being so constructed as to be used either as benches for concerts, tables for tea-meetings,



or forms and desks for the work of the day school. The site comprises 2700 square yards, and has enabled the committee to provide two excellent and spacious recreation grounds. The architects are Messrs. M. & H. Taylor, Manchester; and the builders, Messrs. J. Robinson & Son, Hyde.

**Malvern New Club-house.**—Early in the year a movement was commenced for the establishment of a club-house at Malvern. Subscriptions were rapidly obtained, and, when the amount promised reached 2,000*l.*, a site was obtained, and a commencement of the work made. Plans and specifications having been furnished by Messrs. Haddon, architects, and approved by the committee, tenders were received for the building, and that of Mr. William Porter, Malvern Wells, at 1,500*l.*, was accepted. The building was at once begun, and is now in the course of rapid completion. The Roys Lodge are also making an effort for the erection of a masonic hall in Malvern, which is likely to prove successful.

**The Severn Waterworks.**—On the 7th inst. the Mayoress of Tewkesbury laid the foundation stone of the new waterworks for that town, in the presence of the Committee of the Cheltenham Waterworks Company. After the ceremony a luncheon was provided by the committee at the Town Hall.

**Abergavenny Butter Market.**—Effort is being made to render the temporary butter and poultry market, now held in the cattle market, as convenient as possible. The work of demolishing the old market-place, &c., in Cross Street, is rapidly progressing; but at present there is no effect to be noticed other than that the 'opening' which has been made brings the Great Scyrrid very prominently into view, and thus adds another object of interest to the street passenger.

**Chipping Sodbury Church.**—This old church, dedicated to St. John the Baptist, having undergone a thorough restoration, was re-opened on June 5. The outside has been cleared of the coat of rough cast, so as to expose the local stone of the walls as originally intended. The square embattled tower is, owing to its height, a conspicuous object for a long distance. The openings of the bell stage have been filled in with tracery instead of the old rough stone louvres, and the beauty of the tower is thus improved. Inside, the wall between the tower arch piers has been removed, so as to throw open to view the west window, the tracery of which has been renewed. The south porch has been entirely rebuilt, and the niches in front have been supplied with canopies which cover figures of John the Baptist, Virgin and Child, and John the Evangelist. A new vestry has been erected on the north side, and underneath it has been placed a warming apparatus. During the progress of the work the remains of an old pulpit were found in one of the bays on the north side of the church, nearly opposite the south porch: this has been restored, and is quite unique. The walls have been cleansed from the coats of lime and coloured washes with which they were formerly disfigured. The old high pews have been removed, and open benches, of neat design and with carved panels, substituted; the number of sittings has been increased by 130. The chancel screens, as well as the stalls for the clergy and choir, are of oak, richly carved. The reredos is of alabaster, with side panels of Caen stone. The east window is by Clayton & Bell, and is a very successful work of art. The cost of the restoration has been 4,000*l.* Mr. G. C. Street, of London, was the architect; and Messrs. Wall & Hook, of Brimscombe, were the contractors. The old organ, not being large enough, has been removed, and a more suitable instrument, by Vowels, of Bristol, erected in its place.

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

### An Anniversary.

Such of our readers as delight to commemorate anniversaries, tercentenaries, and the like—and the spirit, though easily turned into ridicule or abused for jobbery, is in itself commendable—may care to be reminded that exactly a hundred years have elapsed since Josiah Wedgwood opened his celebrated works at Etruria. On June 13, 1769, we are told that the master-potter himself threw several vases to inaugurate an undertaking destined to produce so great an influence on the Ceramic art of England. Happily, too, the discoveries of Wedgwood have not shared the fate which curiously enough has overtaken many of the improvements in this art. Robbia, Paliassy, Henri Deux ware have, as is well known, germinated, flourished, and decayed, almost within the lifetimes of their inventors. Our great English potter has been more fortunate, whose labours have been, and still are, well and wisely seconded by his descendants. A certain class of connoisseurs, indeed, who thrive upon accurate knowledge as to particular specimens of art, and care more to trace the intricacies of the sale-room than to watch the beneficent influences of genius, have pushed the laudable reverence for 'old Wedgwood' to the conclusion that 'new' Wedgwood ware cannot be good. To them modern art, particularly if of their own country, is trash and rubbish; nor would they willingly believe what ocular evidence nevertheless will easily confirm, that medallions and ornaments now issue from the works of Messrs. Wedgwood as pure in design, as sharp in execution, as any with which the joint labours of Josiah Wedgwood and John Flaxman ever enriched the last century. We have in our mind's eye at this moment an exquisite female figure, executed in pale grey and white jasper, lately shown to us, a very recent production of Messrs. Wedgwood. It is by such work as this, rather than by statues and monuments, that centenaries are best celebrated, and to such undertakings we may heartily offer the old classic greeting of *Stet fortuna domus*.

### Soirée and Dinner of the Institute.

The Annual Soirée of the Royal Institute of British Architects will be held, in all probability, on the evening of Thursday, July 1. It is also proposed that the members should dine together at the Crystal Palace on the previous Saturday (June 26). These occasions are always looked forward to. The Institute soirée is well known, both in the profession and

beyond it, as an uncommonly agreeable social and artistic reception; and the dinners (which have not uniformly been held) have always, when they have taken place, been found enjoyable by those who have attended them. It is especially to be hoped that many of the country members and others who do not very frequently attend meetings of the Institute will make an effort to be present on one or both of these occasions.

### Her Majesty's Theatre.

The pit of Her Majesty's Theatre, or rather the stalls—for it is proposed to occupy the whole of that part of the building as stalls—have recently been enlarged at the expense of the stage, the front of which has been cut off to an extent equal to the width of an additional row of stalls. This is a further and a considerable misfortune added to the many which have befallen this once-celebrated place of public resort through the fire which destroyed it in 1867. One of the secrets of the acoustic success of the old building was the shallowness of the stage and the way in which its front was brought forward, so that a singer at the footlights was fairly among the audience. This advantage is now entirely lost, and a proportionate loss of effect may be confidently anticipated, if ever the house comes to be sung in again.

### The Monuments in Westminster Abbey.

We are informed on the best authority that it is, and has been for very many years, customary to cleanse and wash the monuments in the nave of Westminster Abbey every two years, and that they are dusted constantly. The Royal monuments are also dusted every two months. In dusting some at least of these monuments a brisk current of air is raised by an apparatus like the bellows of a smith's forge, which passing through a flexible tube, can be directed on to any part of the object, and so remove the dust without any rubbing or even touching the old work.

### Indian Notes.

**Engineering.**—Arrangements are being made for the immediate prosecution of the Soane Canal project by the excavation of the Western Main Canal, of which twenty-eight miles are laid out ready, and the construction of the Eastern Main Canal, with the Arrah and Patna branches, and works incidental to these undertakings. The estimated cost at the outset is set down at 580,000*l.*

A material change is apparently coming over the Indus Delta, in consequence of the silting up of the Keedewarree, or Suttah, mouth, which has now become so shallow that natives can wade across from one bank to the other. The main channel of the river has been diverted to the Hujamnee mouth, which is both widening and deepening.

The works of the Madras Irrigation Company have so far progressed that the canal is in a condition to receive the waters of the Toombudra, when filled by the monsoon, and is navigable for a distance of 62 miles. The canal water has now reached the Culpa, with a depth of 9 feet under the Mittacoudal Bridge.

The Government of Madras have appointed a commission to inquire into the minor irrigation works of that presidency.

The repair of the Madras Pier has been sanctioned at an estimated cost of 28,742*l.* Mr. Black, the superintendent, finding it impossible to remove the works of the old pier from the gap, proposes to screw down, on both sides of the breach, three rows of piles, well fixed together at the top by wrought iron girders, carrying a platform of a width sufficient to form two lines of rails, the centre portion being left uncovered for the present.

Mr. Fryer, Assistant-Superintendent Geological Survey of India, has been specially deputed by Government to examine the Chanda coal-fields. Should it be found that the coal answers the expectations formed of it, it is in contemplation to open a branch railway or tramway from the most approved of the mines to the nearest place on the main line.

An Engineering College is about to be established at Hyderabad in connection with the Nizam's Government, for the purpose of training native and Eurasian youths for employment as zillah and assistant engineers within His Highness's dominions.

A land line of telegraph is being constructed as an alternative to the cable between Gwadur and Cape Jask, which, it is hoped, will tend to the permanent security of the Indo-European communications.

At Malligaum, Government have sanctioned the sinking of four of Norton's tube wells in the bed of the river, running within 400 yards of the cantonment.

A mission of American gentlemen has arrived in India, with instructions from the United States Government to report on the Irrigation Works of India, and on the different systems of cultivation in India, China, and the East. The mission consists of the Honourable C. D. Poston and Colonel Grant. They have had an interview with Lord Mayo, and the Provincial Governments have been instructed to further their objects.

### Bordeaux.

The Tower of St. Michel at Bordeaux has been completely rebuilt, as originally constructed. It took nine years of uninterrupted labour, and is 367½ feet high, being the highest single tower and spire in Europe. The cost is said to have exceeded 20,000*l.* The architect entrusted with the work was M. Abadie, a gentleman of considerable repute in France, who has lately very successfully restored the Cathedral of Angoulême Perigueux of Bordeaux. M. Abadie was also architect of the new Hôtel de Ville at Angoulême.

### Cologne.

Almost on the same day on which the Roman pavement was found in London, a similar one was discovered here, also whilst excavating for a new sewer. The breadth is only nine feet; the length is not yet known, as the pavement extends beneath a neighbouring street. It is only six feet below the present street level, and the design, in red, black, and yellow stone mosaic, terminates at the excavated end in a semicircle, arranged in a fan shape with broad interlaced bands. The magnificent south porch of Cologne Cathedral is now entirely finished and free of all scaffolding and hoarding. There are no less than 107 statues in the niches (38 of which are of life

size), besides eight compositions in bas-relief. They are all the works of one sculptor, Professor Christian Mohr.

Cologne is without a theatre of any kind. The summer theatre was lately burnt down, and the town authorities have refused permission to erect a temporary edifice in place of the Stadttheater, also consumed by fire some short while since.

#### Madame Alma Tadema.

This lady died at Brussels on May 28, at the early age of 32. The deceased lady was the wife of Mr. L. A. Tadema, from whose studio we have two classic and, in conception, very original pictures at the Royal Academy this year, namely, the 'Amateur Romain' and the 'Danse Pyrrhique.'

## General.

A Colossal Statue of the Queen for Montreal has just been cast at the foundry of Messrs. Holbrook & Co., Chelsea.

Orders have been sent to Toulon for the Imperial yacht destined to convey the Empress to Alexandria for the opening of the Suez Canal to be in readiness by September 27.

Nottingham is to have a new park, Clifton by name. The following are its quoted recommendations:—1. That it would greatly benefit the town. 2. Ditto the Clifton estate. 3. That it would be a lasting memorial to Sir Robert. If a statue is to be erected, behold the fitting site!

Rev. Alexander Dyce has bequeathed to the South Kensington Museum his dramatic library, with its unique editions of Shakespeare, and all his pictures, miniatures, antique rings, and other works of art, upon the condition that a suitable room is built to receive them.

New York erects 2,600 buildings this year. There are 80,000 lots covered now and 60,000 left. Therefore within twenty-five years every inch of Manhattan Island will be covered with brick and mortar.

A Large Room has been discovered at Herculaneum which must have served for a kitchen. In it was a wooden clothes-press, entirely carbonised; also 14 vases, a candelabrum, and a lamp, all in bronze; several vessels in glass and terra-cotta; a small marble statue of a faun, and two broken tables, one in marble and the other in slate. These excavations are carried on by means of the grant of 1,200*l.* by King Victor Emmanuel, made for that object.

At Wolfaden, in Switzerland, the workmen engaged in pulling down an old half-timber house of the fifteenth century discovered a large earthenware jar secreted under the flooring of the ground storey. Upon examination it was found to be full of silver-gilt coins of the thirteenth, fourteenth, and fifteenth centuries, some bearing the effigy of the Abbess of Fraumünster of Zurich, others that of the Abbot of St. Gall, and others the arms of Bâle, Schaffhausen, Zurich, Berne, and Laufenberg. These coins were doubtless hid during the war which raged throughout Switzerland more or less during the fifteenth century.

**Bucknell Church.**—The enlargement and restoration of St. Michael's parish church, Bucknell, in the Salop Archdeaconry of the diocese of Hereford, are being proceeded with by the builder, Mr. Gough, of Bishop's Castle, under the superintendence and according to the plans and specifications of T. Nicolson, Esq., F.S.B.A., the Diocesan architect. It is intended to add a north aisle, an organ chamber, a sacristy, and a warm-air crypt; to re-build the tower and porch, and to put new windows throughout the church—the present ones being mostly modern insertions. An arcade of four arches will throw the new aisle open to the nave. The roof-timbering will be brought into view, and be newly boarded, felted, laced, and covered with Whitland Abbey slates; the external and internal masonry repaired; the body of the church re-seated in pitch pine; the chancel suitably stilled with new piscina, sedilia, and credence; the bells re-tuned and re-hung. The total cost will be about 1,600*l.*

**The Proposed Bridge across the Mersey.**—At a meeting of the Committee of Works of the Mersey Docks and Harbour Board, held on June 4, Messrs. Low and Thomas, the projectors of the proposed Liverpool and Birkenhead Railway, were present by invitation. The principal features of the scheme discussed by the Board were the two piers proposed to be placed in the river, and the height of the bridge above high-water mark. One member of the committee considered that the height of 140 ft. above high-water mark was insufficient, and others were of opinion that objections would be raised to the piers in the river. Messrs. Low and Thomas were referred to the conservators of the river, and if no objection was raised by them, the Committee of Works thought that the Mersey Docks and Harbour Board would not raise any difficulties.

For some years the western tower of Ely Cathedral has been considered unsafe. Recently some internal scaffolding to the south-west turret of the tower has been fixed, by order of the present Dean, Dr. Goodwin, who has consulted Mr. G. G. Scott as to the firmness of the walls. Oak beams and iron bracing are also to be added to prevent the bulging of the walls, or the fall of any part of the upper portions of the tower.

The Hull Western Dock will be inaugurated on the 28th inst. The area of the dock is 23 a. 0 r. 1 p., and it increases the aggregate dock area of Hull to 84 a. 0 r. 16 p. A banquet will be given on the occasion by the Dock Company at Kingston-upon-Hull in one of the dock warehouses. The King's Lynn Dock Company will inaugurate its dock on July 7.

**The Bermuda Dock.**—The huge iron Bermuda Dock, constructed by Messrs. Campbell, Johnston & Co., will leave England on or about the 20th instant, convoyed by a squadron of our most powerful men-of-war. She will be towed down Channel by the 'Terrible,' probably assisted by some smaller steam vessels.

**Art Schools' National Competition.**—The following gentlemen have acted as the examiners of the works sent up in competition from the schools of art throughout the United Kingdom:—Sir Francis Grant, P.R.A.; Sir M. Digby Wyatt; Messrs. J. C. Horsley, R.A.; F. Pickersgill, R.A.; R. Westmacott, R.A.; and E. J. Poynter, A.R.A.; assisted by Mr. Redgrave, R.A., and Mr. Bowler. Upwards of 64,000 works have been examined in this competition.

The Government has bought the immense building known as the Victoria Ale Stores at North Woolwich for 40,000*l.* A deposit of 3,000*l.* was paid some months since, and said to have been forfeited, but it is believed that the necessity of removing the clothing stores from Pimlico, and of obtaining waterside premises suitable for shipment, has led to the present purchase. The building and its appurtenances are to be at once handed over to the charge of the police from the Royal Arsenal.

## QUESTION.

### New Road-Laying.

SIR,—I should like to know the process of laying down roadways, &c., as is being done by the Swiss Company in Threadneedle Street. It appears very durable, but will, I think, be very slippery after a short time.

June 4.

A SUBSCRIBER.

## MEETINGS OF TECHNICAL AND LEARNED SOCIETIES.

**THE ARCHITECTURAL ASSOCIATION.**—Friday, June 25.—Half-past 7 P.M.: Election of officers. 'The Art Treatment of Iron,' paper by Mr. Lucy W. Ridge, V.P., A.R.I.B.A.  
**ROYAL ARCHAEOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.**—The next monthly meeting will take place on Friday, July 2, at 4 P.M.

## APPOINTMENTS VACANT.

**INDIA.**—July.—Forty Appointments in the Engineer Establishment of the Public Works Department in India will shortly be open to public competition. W. T. Thornton, Secretary, Public Works Department.

**KENDAL.**—Borough Treasurer to the Corporation of Kendal, Westmorland. Salary, 50*l.* per annum. Mr. Thomas Harrison, Town Clerk, Kendal.

**LONDON.**—June 17.—Engineer and Clerk of the Works to Middlesex House of Correction, Coldbath Fields. Salary 300*l.* a year, going upward to 250*l.* Mr. John S. Shaife, Clerk to Visiting Justices, House of Correction, Coldbath Fields.

**PESTH.**—As Assistant or Resident Engineer, to Superintend Works of Pipeage, Masonry, and Pumping Machinery. A knowledge of the German language desirable. Salary from 400*l.* to 600*l.* per annum. W. Lindley, Engineer-in-Chief, Pesth.

**WHITECHAPEL.**—June 15.—Whitechapel Union.—Assistant Engineer at the Workhouse. Wages 2*5s.* per week. William Vallance, Clerk. Clerk's Office, Whitechapel Workhouse, June 1, 1869.

## COMPETITIONS OPEN.

**ARRAS, FRANCE.**—Architects are invited to send in designs for a Church to be erected at Arras. The building is to be 40 metres long, without the clock tower, and 18 metres wide, and it is to have three aisles, three entrances, to be approached by a flight of five steps, and to be surrounded entirely by railings 1½ metre high; sub-basement of Belgian stone. The plans are to include a general one of the entire building, a fully-detailed description, and a careful estimate, with such perspective views and details as the artist may think fit to add to the former. The style of the building is required to be 'Decorated Roman of the last period,' and the sum to be expended, including commission, is 80,000 francs (3,200*l.*). The authorities do not undertake to adopt the prize plans, in which case the author of the best and second-best designs will receive 600 francs and 300 francs respectively. It is added, that the columns are to be of hard Belgian stone, and the rest of the building of Creil stone; the vaultings are to be of real, and not in ceiling, or of wood with visible ties. The jury is composed of the Bishop of Arras, the Maire, a Canon, two members of the Municipal Council, an Engineer, the Secretary-General of the Museum, and the Vice-President of the Council of the Prefecture. The designs are to be sent by the end of July.

**BELGIUM ACADEMY OF ARTS AND SCIENCES.**—For best enquiry (essay) and report on the period at which Architecture in the Low Countries became affected by Italian influence. Premium, 1,000 francs, about 40*l.*

**BRADFORD.**—September 1.—Competitive Designs for the new Bradford Town Hall. To the Architect whose design is selected, 5 per cent. commission and the execution of the work; 2nd best, 200*l.* premium; 3rd, 100*l.* Mr. W. T. McGowen, Town Clerk, Corporation Offices, Bradford.

**BRUSSELS, BELGIUM.**—A competition is announced for the production of the best Water Meter. The inventor of the instrument offering the greatest advantages is to receive a reward of 200*l.*; the second best, 120*l.*; and the third, 80*l.* The Meters are to be sent in to the Secrétaire de l'Administration Communale, Hôtel de Ville, Bruxelles, before 12 o'clock on October 31 in the present year.

**CONSTANTINE, ALGERIA.**—Three prizes, of the value of 3,000, 2,000, and 1,000 francs, are offered for the best designs for a theatre to be built at Constantine.

Programmes of conditions, accompanied by a sketch, may be obtained either at Constantine, at the office of the Société Générale Algérienne, No. 13 Rue Neuve-des-Capucines, Paris, at the Prefecture of Lyons, or the Mairies of Marseilles, Bordeaux, or Oran.

**DEVON.**—June 12.—Plans and Specifications for Repairs and Alterations to Chudleigh Parish Church, Devon. G. B. Ellicombe, Esq., Chairman of the Chudleigh Adhvowen Trustees, Rocklands, Chudleigh, Devon.

**LEYDEN MUNICIPALITY** invites Designs and Models from Sculptors of all countries for a Statue of Boerhaave, in the costume of Professor of Leyden University. September 1.

**LINCOLN.**—June 14.—For Plans and Designs for a New Church. Mr. T. Heffernan, Secretary, Lincoln.

**LONDON.**—June 26.—London and County Land and Building Company (Limited).—Plans of the best and most profitable way in which to arrange in building sites their ground in Cannonville Street, City. First premium, 75*l.*; second, 50*l.*; third, 25*l.* Mr. R. B. Looker, 14 Clement's Lane, E.C.

**PHILADELPHIA, PENNSYLVANIA, U. S.**—September 1.—For Designs, Specifications, and Estimates for New Public Buildings. First premium, 400*l.*; second, 300*l.*; third, 200*l.*; fourth, 100*l.* For particulars, to H. C. Pugh, Secretary of Board of Commissioners, S.W., corner of Walnut and Fifth Streets, Philadelphia.

**PLYMOUTH, DEVON.**—For Designs for New Guildhall, Law Courts, Public Offices, &c. Premiums 100*l.*, 75*l.*, and 50*l.* July 14. Whitford, Town Clerk, Plymouth.

**ROYAL ACADEMY OF ARTS.**—Burlington House. For the best Painting in Oil, or Model and Design in Painting, Sculpture, and Architecture, the Gold Medal and the Discomess of Presidents Reynolds, West, &c.; and for the best Copies of Drawings, &c., the Silver Medals, &c.

**SAINTE JEAN D'ANGELY, FRANCE.**—The authorities of St. Jean d'Angely have decided on completing the Church commenced in the town by the Benedictines, but of which the works were stopped in 1789. Estimate 200,000 francs (8,000*l.*), the architect's honorarium to be equal to 4 per cent. The competition is confined to architects of Charente and the four adjoining Departments.

**VINNA, AUSTRIA.**—This Municipality require Designs, Plans, Estimates, &c., for the Erection of a New Town Hall. Open to all Europe. For Particulars, Austrian Consul-General, Paris.

**WESTBROMWICH.**—For Designs, &c., for a complete School Establishment for accommodating 400 children. Premiums: 1st and best Design, 50*l.*; 2nd, 30*l.*; 3rd, 20*l.* Mr. H. Ward, Lombard Street, Westbromwich.

# The Architect.

## THE COMING SCHOOL OF ART.



NEW things,' says our shrewdest, perhaps our wisest English writer, 'are like strangers, more admired and less favoured,'\* and nowhere is this truth more illustrated than in the circle of the Fine Arts. We have, for example, within our own day seen the works of a new school of painters eagerly sought after, wondered at, admired; but oppressed by the unsparring and unfriendly criticism of the same judges who would yet look leniently upon works which had few other merits than the negative one that they had not left the beaten track. In the days of our fathers the position of Gothic architecture was a not dissimilar one, and at the present moment the works of a certain group of painters are beginning to be looked for by the public with that critical curiosity which breathes more of wonder than favour, and seems to herald the dawn of a new school. What will Architecture gain or lose from the change? This is to us an all-important enquiry; but first let us have a word or two about Change in itself.

It is mostly, if not always, a healthy sign when a decidedly new treatment crops up. How much there must have been in the great days of architectural progress to provoke the dislike of members of old schools! We can fancy a master mason, who had been trained on the Confessor's buildings at Westminster, living to testify his supreme disgust at the florid and ornate enrichment of what we commonly know as Norman. Let a little time pass, and we can fancy one of the old school 'of the period' lamenting over the spread throughout England of the pointed arch as an ingenious but unwelcome innovation. A little later there must have been those who looked with distrust upon tracery as the beginning of decadence in the art of building; and so we might go on imagining the reception which awaited each step in that sequence of innovations which almost in our own day has been run through backwards; for, beginning at Pugin and florid Perpendicular, we have gone rapidly up the stream of time till the advanced guard of our progress have at least reached Early French Romanesque.

We believe it is no secret that a great step in the art of painting is considered, at least by some eminent living French artists, to lie within their reach. The naturalistic treatment of historic and sacred subjects has become a favourite idea with them. Of this the works of Alma Tadema may be taken as a conspicuous example not unfamiliar in England. This artist has studied the remains of Greece, Rome, Egypt, and Assyria, and has reproduced, in works having all the reality of the present, the scenes of the past. Mr. Poynter has done the same, and with almost equal success, in this country; but here he stands almost alone, while Tadema's name is on the Continent only one among a group; we may say, indeed, a school.

Another section of French painters, whose views are understood to be shared by that unequal, but most prolific genius Gustave Doré, look to colour as that which a new French school shall render in a manner hitherto unknown. This may be possible, and any movement which Doré might choose to head, if he threw all his energy and power into it, would be sure to land those who join it in some sufficiently conspicuous position; but more than this we cannot venture to predict. In architecture there seems to us even less of genuine healthy change—less of useful innovation—in France than there has been; and we may say the same of sculpture, notwithstanding the ability and training of French sculptors. But without pursuing Continental art further in search of novelty, let us turn homewards, and, looking at the arts broadly, enquire what of healthy innovation, what, in fact, of progress, is to be seen? What new school is rising or maturing? What sign is there that as old things wear themselves out, others are preparing to do their work and do it better?

Beginning where, for the moment, the attention of artists and critics is concentrated—at the Royal Academy Exhibition—we find the bulk of the popular painters still working in the same groove down which the impulse of Hogarth's powerful mind and singular sympathy with the nature common to Englishmen started them long ago.

\* Bacon's Essays. 'Of Innovation.'

We find that the pre-Raphaelite influence has all but died out among painters of subject, though still strongly at work in our landscape art; but we find a few works denoting a feeling for the use of painting as mural decoration, and for a severe treatment alike of composition, drawing, and colour, which may possibly betoken the dawn of a new school. Everyone looks at the paintings of Mr. Albert Moore, for instance, with that curiosity and that distrust which a novelty always awakens, and no one seems quite sure what to make of his works, even while admitting that they possess good qualities as well as strange ones. These works and sundry others, including Mr. Marks's little processional picture, seem to belong to a class which had no existence till very lately among us.

If we turn now for a moment to Architecture, there is no very prominent sign of innovation in exhibited works, though there are indications of greater attention to decoration than ever before. We have, as has been already said, run the gauntlet of several styles pretty briskly, yet there are few architects' works which we could single out at the present Architectural Exhibition or at the Academy which show marked progress in any one direction, nor can we readily point to such novelties in buildings in progress. But if there is, on the one hand, a leaning among some painters towards a severe self-restraint within bounds hitherto scorned by all of them, there do seem some corresponding signs of a growing appreciation of the value of the allied arts in the works of architects.

The time has been, and that not long ago, when a building erected with no polychromy or sculpture inside or out was considered finished when the builder's men had done with it. Mural paintings were not thought of; if the decorator was called in at all, it was to work after the architect, not under his direction; while, as for the sculptor, he was seldom required. Now, if we read the signs of the times aright, our best men are more and more laying themselves out to ensure the decorative completeness of their work by associating with themselves the sculptor, the painter, the glass-painter, the mosaicist, and the enameller.

Sir Charles Barry in his secular work at Westminster, and Mr. Butterfield in ecclesiastical work, were pioneers in this movement; at any rate they were among the first to make extensive use of pictures, sculpture, and painted and inlaid colour; but we may now point—only to name at random one or two cases—to Mr. Scott's works at Wolsey's Chapel, Windsor, and the Albert Memorial, Mr. E. M. Barry's excellent decorative work in the Royal Gallery and St. Stephen's Chapel at Westminster, and to Mr. Burges's and Mr. Blomfield's decorations at Oxford, as showing the set of the current in a direction also pointed to by such exceptional works as the Royal Mausoleum, the various South Kensington buildings, and some at least of our recent theatres.

Our critiques on the Royal Academy, from the pen of an architect who has with his pencil worked more than most upon the association of architecture with the sister arts, are written, as our readers will have perceived, very much indeed from this special point of view—a point of view which those only occupy who understand best how truly all the Muses are sisters; or, in other words, how the painter, the sculptor, and the architect, ought to be associated in order to the production of a perfect work of art; and how much the productions of each lose when wrought upon with no reference to the others.

If it be really the case that a new school of artists is rising, including painters (and, let us hope, sculptors), who work with a view to the appropriate enrichment of architecture, and architects who will build so as to make paintings, coloured decoration, and sculpture, an integral part of their works, and if architects will render themselves competent to devise and superintend the execution of such works, then, indeed, there is hope for the arts of England, and a prospect lies before us hardly inferior to that which was open at any great period of art progress. To make sure of it we, perhaps, only now want a leader, as well as followers. Any ordinary school supposes not only scholars, but teachers; and the great groups of artists who have gone by the name of schools are few of them exceptions to this rule. We have the school of Giotto, of Luini, of Raffaele, of the Caracci; and though affiliation to some one artist is not the sole condition of combined progress or change, it seems to be a wonderful help. The English Gothic school will always owe very much of its force to the character of the Pugins, whose work and whose influence over numerous colleagues and pupils have served to no inconsiderable extent to give such character and compactness as it possessed to the earlier years of 'the Gothic movement.' We have at the present moment no one working among us who is such a moral force as Welby Pugin was, and we look with



some anxiety upon the disconnected and unequal efforts of various architects who are working honestly and diligently in one and the same direction, fearing lest their individual and separate courses should diverge too widely for the result to be vigorous and homogeneous.

### THE SKETCHES OF THE ARCHITECTURAL EXHIBITION.

BY EDWARD W. GODWIN, F.S.A.

THE collection of the late Rev. J. L. Petit's sketches, now on view in Conduit Street, gives singular interest this year to what may be called the archaeological studies of the Architectural Exhibition. I do not propose to write on Mr. Petit's attainments in Archæology, or on the desirableness of architects studying in the same fields. The compound subject is very tempting, but my space is limited. I would, however, take this opportunity of putting the question—Whether it is wise, under any circumstances, and at any time, for an architect or archæologist to lose sight for a moment of his architecture for the mere sake of an attempt to produce a picture? It is quite possible that most of those works to which I have referred as 'archæological studies,' may have very little claim to be considered *studies* in any sense, and it is more than possible that what little study these works may claim, is to be found chiefly in the desire of their authors to do something pretty, oblivious alike of the historic and art-value of that architecture which has supplied them with subjects for sketching.

Thus, although Mr. Petit's drawings might, as the water-colour sketches of an amateur, claim a large share of attention, it must, I think, be conceded by everyone that they are about the last drawings in the world a young architect should look at in any light other than as a warning. We may all admire the rapid, effective, bold, even dashing character of the two hundred and ninety-four sketches now, for the first time, publicly exhibited, but we must be careful to avoid anything like praise from an architectural stand-point; and if students visit the Exhibition to gather suggestions as to style and method in sketching old buildings, they would do well to bear in mind that in this collection they have a lesson of how not to sketch reiterated more than two hundred times.

An examination of Mr. Petit's sketches reveals, amongst other things—First, a coarseness of paper, inexcusably extravagant considering the *scale* of the work; second, a prevalence of hot, vivid colours, regardless of place—'Shrewsbury' and 'Egypt' (206 and 202), the 'Isle of Man' and 'Baalbec' (175 and 180), are presented to us in tones equally brilliant and vivid; third, an impatience of detail which almost invariably leads to blotches and muddle (very markedly so in Nos. 129, 136, 140, 157, and 189). On the other hand, if the detail has been neglected, the perspective has received unusual attention; the leading lines, carefully sketched in pencil, may here and there be distinctly traced beneath the colour, when nothing else has been indicated. Very true in proportion and general effect are Nos. 79, 128, 203, 244, and 247. Boats and shipping appear to much greater advantage than architecture, as in Nos. 54, 76, and 210, which are the most satisfactory sketches in the collection. I should add to these, No. 9 for its simple broad rendering, and Nos. 100 and 152 for their clever treatment.

The sketches contributed by architects are this year very sketchy indeed. Those in colour worth notice are Mr. Street's 'Les Halles, Ypres,' and 'Whitby Abbey' (Nos. 1A and 1B), Mr. Spiers's 'Sketch of Tomb of Sultan Barkouq' (No. 6), Mr. Emerson's contribution (No. 221), Mr. Groom's work (No. 215), Mr. Florence's very pleasing sepia 'Sketch of the Château de Blois, Façade de François I.' (No. 227), Mr. Leonard's clever, quiet drawing of 'Preston Church, near Hull' (No. 67), and, above all, Mr. Allom's 'View of the Subterranean Palace Yere-Batan-Serai.'

Mr. Cole, as a painter in water-colours, exhibits four works, in two of which, 'Schloss Eltz' (No. 123), and 'Rouen Cathedral' (220), the colourist's power is fully shown.

The pencil and pen-and-ink sketches are, for the most part, examples of how not to do it. As pretty reminiscences, as illustrations for ladies' albums, or as pretences for staying abroad, they deserve the attention of shallow travellers, of ladies who keep albums, and of architectural idlers. There are a few worthy exceptions, as, for example, Mr. E. Sharpe's doorway; Mr. Watson's bay and figured details of St. Lazare, Autun; Mr. John Cotton's careful perspectives, where the detail, down to the section of small string-courses, is carefully defined; Mr. Spiers's conscientious, but dull, sketch of house at Ypres, and his more effective rendering of Cathedral at

Tournai. Although thankful to Mr. T. Hayter Lewis for some of his measured sketches taken in Algeria, still I cannot quite see what earthly good 'Dolmens' can render to the Exhibition, or why a few 'rough sketches' should swim in such an ocean of paper. As Mr. Lewis is a professor, might it not conduce to the advance of architectural education if he suppressed for the future sketches glaringly wrong in perspective as are those taken of Algerian capitals? To anyone who goes out of the beaten track and discovers pleasing, suggestive, and practical examples of our art, we must all be grateful. The old house near Halifax (133), illustrated by Mr. Seddon, is full of suggestions. It is to be regretted that Mr. Seddon could not have spared sufficient time to give a sketch plan and general measurements; for I am quite sure that our architecture is more likely to be improved by carefully studying buildings of reasonable—i.e., useable magnitude—than by any amount of ecstatic admiration of mighty minsters and laborious measurement of long-drawn aisles. Few works can be more improving than to carefully measure up a bay of a really well-proportioned cathedral, to plot its details on the spot, to mark the joints, to survey its construction; but there is no need to be always doing cathedrals. Two or three well selected will teach all that is useful to know. We do not live in a minster-building age, but we do most emphatically live in a house-building age, and for all contributions like Mr. Seddon's we ought therefore to be eminently thankful.

### NOTES FROM ABROAD, No. III.

BY A CORRESPONDENT.

SAN FRANCESCO of Assisi has always been regarded as one of the chief points of interest to the lover of mediæval architecture in Italy. The churches still remain, and are pretty much in the same ruined state they always were; but the great monastery—the centre of the Franciscan order, and the principal monument of Francis Bernardone himself—is now silent and deserted: the monks are gone, and their property belongs to the crown—a few of them only remaining to take charge of the vast building and do the ordinary duties of the churches. These are two in number, built one above another, with a crypt beneath containing the tomb of the founder. The lower church, as it is called, is the richer in colour and effect, and contains a great number of chapels, full of interesting paintings: but the great objection to the whole of this church is that it is so dark—nothing can be properly seen. On the other hand, the upper church is full of light, and glaringly shows the decayed state into which the frescoes of Giotto da Pisa, Cimabue, and Giotto have fallen; those on the walls especially have suffered severely from damp: the ceiling being in a better state of preservation, owing to the roof which covers and protects it from the rain and snow of this mountain district. I have never been a particular admirer of this interior, and as to the frescoes, though very interesting in the history of art, they have, so far as one can see, little else to recommend them. There is a fashion in art, as in everything else; and it has of late years been the fashion to talk rapturously about the very early Italian painters, who, although possessed of great merits, are naturally a long way behind their more educated and able followers of the sixteenth century.

Their great charm is an unaffected rendering of nature, so far as they were able to effect it; and it has been not unaptly remarked by an able critic, that with these early painters it was all nature and no art, whilst with the later painters it was all art and no nature. But this must be taken *cum grano*, for Giotto's faces generally are purely of a conventional type, and as to Fra Angelico's angels and human beings, they are all exactly alike. There are, however, many points of interest more strictly architectural in both churches, and especial mention should be made of the marquetry work of the stalls in the upper church, which were executed by Domenico da San Severino about the middle of the fifteenth century. In the cathedral of San Rufino also are some splendidly carved and inlaid stalls of the early part of the sixteenth century; more effective even than those we have already described at Perugia. The façade of this cathedral dates from the earlier part of the twelfth century, although, like so many of the old Italian churches, it seems to belong to a much earlier period; the principal portal is very richly carved, and has the usual lion on each side, which in these cases, I believe, was always meant to symbolise the Church; one of them here is rendering the figure of a man with its claws, and is nearly identical in character with the lion as represented on several church entrances in the South of France; the figure which he claws is meant to represent a Pagan: in other instances he holds and protects a sheep or lamb or child, all as evidently meant to symbolise the Christian. Besides other good pieces of mediæval architecture in the town, there is a well-preserved portico of a temple of Minerva, now serving as the entrance to a church, and the ruins of a splendid castle on the hill overlooking the whole, and still noble and impressive, even in its decay. There is a custom which may be observed here and at Perugia, and other towns in Central Italy, and deserves notice: it is the insertion of small iron hoops projecting from the walls, and placed round the windows

of the common houses, in which the poorer classes insert their flower-pots. It is a cheap plan, and has a very pretty effect. I often remarked also plain iron brackets, placed each side of the windows, furnished with pendant rings, and was for some time puzzled as to their use, which is to receive a pole for hanging clothes on, or for lines to be attached for the same purpose—a practice very useful for families who live on flats, as they do in our modern model workmen's houses, or in Scotland. The next halting-place was Spoleto, the principal monument of the building art being the ancient aqueduct 'delle Torri,' the construction of which is ascribed to the Lombard Theodelapius, Duke of Spoleto, in the seventh century. It is a very remarkable work, built of small stones, about 700 feet in length and 273 feet high, resting on ten pointed arched piers, spanning the deep and rocky ravine which separates Spoleto from Monte Luco. If the date is correct, these pointed arches have more interest in the history of the arch than I believe is generally assigned to them. The cathedral is stated to have been also erected by the same Lombard Duke in the year 817, but its present façade is of the twelfth or thirteenth century, and its interior modern, with the exception of a very fine opus Alexandrinum pavement. One peculiarity is to be noticed in the arched portico which runs along the entire length of the front, and that is a well-designed projecting stone pulpit at each end, of excellent effect. In the cathedral square is to be seen also a very fine example of graffito work, a palace which bears the impress of Bramante's style, and is ornamented with friezes and panels containing triumphal processions of children, fables of antiquity, and other figure subjects, worthy of the best artists of the sixteenth century, the period to which it may be ascribed.

Although not strictly architectural, I venture to recommend all landscape, and even architectural painters, to take up their quarters in the district between this and Narni; the latter town, built on a high limestone rock, bristling with towers and battlements, in a most picturesque state of ruin. The whole valley of the Neva, with its river, rocks, and woods; and Terni, with its celebrated waterfall, will well repay exploring, and afford endless points of interest and beauty. From here to Rome, however, there is little purely architectural to detain the professional traveller; he comes gradually on to the Campagna, sees his first group of mounted Campagnoli pricking o'er the plain, goad in hand—most picturesque figures—and, finally, shooting rapidly past the vast remains of the Roman aqueducts and the Temple of Minerva Medica, finds himself descending from a railway carriage almost in the very centre of the venerable and still noble-looking baths of Diocletian, a characteristic monument of ancient and august Rome, the city of the Cæsars, of which I will speak in my next letter. W.

### OBJECTS DISCOVERED IN PALESTINE.

THE members of the Palestine Exploration Fund have opened an exhibition at the Egyptian Gallery, Piccadilly, of the Photographs taken for the Fund during the years 1865-6-7, and of various objects, mostly antiquarian in character, which are the produce of the investigations and discoveries of the undertaking.

Collections of photographs are no longer the novelties which they once were, and it depends now more upon the claims of the locality illustrated than upon the quality of the photographs whether a gallery of them finds favour with the public. Serjeant Phillips's photographs, though not of very large size, have the merit of fairly uniform excellence as specimens of the art; but their subjects, frequently novel, are such as to possess a great charm for many, and on this account the Gallery well deserves a visit. Damascus, Kedes, Nazareth, Sebastiyeh (Samarra), Nablus, Ashkelon, Amman, Jerush, the Dead Sea, Hebron, Mounts Gerizim and Ebal, and Cesarea, are among the localities more or less fully photographed; while from Jerusalem, the focus of all Palestine explorations, comes more than a sixth of the whole number of about 350 photographs exhibited.

Plans of Jerusalem and its environs, a contour map, a contoured model, and a very considerable number of plans and sections showing the work performed and in progress, by Lieutenant Warren, are hung round the walls or displayed on the tables. A series of glass cases contain the collection of other objects. These are partly modern, but mainly antiquities discovered during the excavations. As is mostly the case where the ruin of an ancient city has been very complete, these consist almost exclusively of the most fragile materials. The paradox that glass and pottery may be expected to be found in localities where marble and metal have been destroyed or taken, was never better illustrated than in this collection.

The fragments of glass include some of the most brilliant and beautiful opalescent specimens we ever remember to have seen; and though a very large proportion of the glass which has been recovered is only in the form of broken pieces, there are a few lachrymatories quite perfect, and two large and fine upright glass vessels, unbroken, and remarkable for the presence *inside* them of upright glass tubes, carefully introduced and cemented to the bottom. The earthenware lamps are numerous, and so are small amphoræ, and other small vessels of simple forms for domestic use. Nearly all this fragile treasure has been met with in excavating at great depths; but though peculiar in colour—for a dull earthy tone replaces the bright red of Samian ware—there seem to be few objects in which the influence of the Roman occupation of

Palestine is not distinctly traceable; indeed the stone catapult balls, of which at least half a dozen are shown, must be traceable to the Roman sieges. We looked in vain for any marked examples of Assyrian character, though some fragments of coloured earthenware of Greek, or Greco-Phœnician character, are undoubtedly included in the collection.

A few good specimens of the jewellery now worn by the inhabitants will be looked at with pleasure by those who feel an interest in the gold and silversmith's art; and almost all visitors will know sufficient about the spirited cruises of the 'Rob Roy' canoe to feel pleased at seeing the modest equipment of that famous vessel. Her compass, cooking apparatus, medicine chest, &c., are stowed away in one corner of a case, which is enriched by the specimens and curiosities collected by Mr. McGregor during his last canoe voyage, which led him up 'Abana and Pharpar, rivers of Damascus,' and on to the sacred waters of the Holy Land.

We should like to suggest to the managers of this undertaking that it would be very desirable to hang up some good pictorial illustration of Jerusalem. Even a coloured print would be of service; but there exists at the Crystal Palace a carefully-painted bird's-eye view, which we think Mr. Grove would do well to transport to Piccadilly. A good map of Palestine having all the spots illustrated by the photographs marked out in red, would be an acquisition, and some effectively executed diagrams (those hung up being not telling in an exhibition room), to explain exactly but picturesquely the work done and doing at Jerusalem, might, we think, repay their own cost a hundredfold by winning subscriptions from visitors. We wish the Fund success, and congratulate the managers on the interesting nature of many of the objects which this compact little exhibition includes.

### THE FRENCH GOVERNMENT AND THE FINE ARTS.

THE 'Annual Exposition of the State of the Empire' gives, amongst other information, a complete account of what was done during the past year by the Administration of the Fine Arts, including purchases of works of art, artistic education, and the erection and repairs of public buildings, and other monuments; and the list is a long and interesting one.

Amongst the commissions and purchases of works of art are a number of pictures for the gallery of Versailles, representing episodes in the French expeditions in China and Japan; a considerable number of works of the same class have also been finished: these relate to campaigns in Africa, the Crimea, Mexico, &c.

Decorative paintings have been executed in many public buildings, including a new church at Saint Cloud, two chapels in the Cathedral of Bordeaux, the hemicycle of the choir of Saint-Martin, Dunkirk, the apsis of Saint-Julien at Tours, the chapel of the Asylum of Sainte-Marie at Angers, and side chapels in the Cathedral of Notre Dame of Paris, the Cathedral of Agen, the Asylum of Matilde, and the ceiling of one of the courts of justice of Rennes.

Amongst the sculptural works undertaken or terminated, and purchased during the year, may be cited statues of Count Jean, grandfather of Francis I., for the Cathedral of Angoulême, of Saints Peter and Paul for the church of Roufaix, and one for that of Isore; two marble statues for the court of the old Louvre; one of Corneille and one of Molière for the Théâtre Français; a group of Saint Vincent de Paul, and several other groups and statues for various civil and religious edifices.

The following marble busts have also been commissioned. Those of the late Count Walewski, Achille Fould, Abbatucci and Thouvenel, for the Versailles Gallery; of Ponsard and Colin d'Harleville, for the Théâtre Français; of Cardinal Mazarin and the Duc de Luynes, for the Bibliothèque Impériale; of Hippolyte Flandrin, Duret, Rossini, and Hippolyte Lebas, for the Institut de France; and of Beethoven, Donizetti, Boieldieu, Hérold, Lesueur, and other composers, for the Conservatoire of Music.

The Administration also subscribed towards the execution of commemorative monuments of Vercingétorix, the Gallic opponent of Julius Cæsar, a colossal statue in copper repoussé, erected in the Department of Puy-de-Dôme, of Vauban for Avallon, and of Bella for Grignon, &c.

It should be mentioned that in addition to all these commissions, purchases and subscriptions, the whole of the money taken at the doors of the Annual Exhibition, or Salon, of the Fine Arts in Paris, is expended in the purchase of pictures and sculpture, which are afterwards placed in the galleries of the Luxembourg and Versailles, or in the museums and civic buildings of the Provinces.

Engravers received commissions for commemorative medals, of the Universal Exhibition of 1867, of the late artist Ingres, and of the Voyage of the Emperor to Algeria; and line and seal engraving was encouraged by orders of importance.

Fine art education was aided by the introduction of many improvements in the schools under the direction of, or receiving support from, the state; the collections of models and books in these schools were largely increased; and the result of these improvements, says the document in question, warrant the hope that they will be crowned with success.

A certain sum of money is set apart for aiding, by subscription, the publication of expensive and valuable works; amongst the works aided in this way in 1868 were 'Le Musée Napoléon III,' the 'Nécropole de Camiros,' 'La Renaissance monumentale,' 'Histoire de la Sainte Chapelle,' ('Œuvres de Bernard Palissy,' 'Les Évangiles,' 'Les Collections célèbres,' 'Les anciennes Tapisseries,' 'Grammaire des Arts du Dessin,' 'Architecture de l'époque de Louis XVI,' 'Peintures murales des chapelles de Notre Dame de Paris,' 'Scriptura de Musica Sacra Mediani,' 'Bibliographie générale des Beaux-Arts,' &c. Subscriptions were also continued in aid of the follow-

ing works:—'Histoire des Peintres de toutes les écoles,' 'Voyages dans l'ancienne France,' 'Histoire de l'Art égyptien,' 'Architecture romaine du Midi de la France,' 'Revue Archæologique,' and 'Revue générale de l'Architecture.' Finally, under this head, a portion of the sum allotted was applied to various works completed during the year 1868, including, amongst others:—'Monuments modernes de la Perse, Ninive, et Assyrie,' 'Le Sarcophage de Memphis,' 'Dictionnaire de l'Architecture française du 11<sup>e</sup> et 16<sup>e</sup> siècles,' 'L'Art chrétien,' 'Égypte et la Nubie,' 'Cités et Ruines américaines,' 'Églises de Bourgs et Villages,' 'Architecture civile et religieuse en Syrie,' 'L'Art harmonique aux 12<sup>e</sup> et 13<sup>e</sup> siècles,' 'Études sur la Musique grecque,' &c. The copies subscribed for, amounting to more than a thousand during the year, were distributed amongst the public libraries and schools.

The account of what has been done for the historical monuments and other public buildings in France has a special interest for the readers of *THE ARCHITECT*.

The very important restorations in hand of the church of Notre Dame at Leon and the remarkable edifice of Notre Dame at Dijon, the Château of Pierrefonds, the Chapel of the Château of Vincennes, and the Sainte Chapelle, Paris, have been carried on with as much activity as during former years.

The famous Château of Blois has been the object of important works; the restoration of the Louis XII. buildings has been completed, and that of the chapel approaches its termination.

The repairs of the great Amphitheatre of Nîmes have been carried on so as to consolidate the building, and to a considerable extent, as we can testify from personal observation during the spring of last year; and it is said that several interesting discoveries have been made there.

The repairs of the following churches have also been steadily pursued:—those of Monzon, Rouffac, Eu, Germigny, Saint-Sernin at Toulouse, and Saint-Étienne at Auxerre.

Government has also subscribed towards, and otherwise assisted, the restoration of the following churches:—Bénévent, that of the College of Saint-Raymond at Toulouse, of Vivoin, Saint-Yrieix, Saint-Eusèbe, at Auxerre, of St.-Père-sous-Vezelay, Soissons, Braisne, Saint-Désiré, Tréguier, of the Abbey of St.-Matthieu, the Tower of Constance, the churches of Montresos, Senlis, Noyon, Saint-Léu-d'Esserent, Murbach, Guebwiller, the Abbey d'Abondance in Upper Savoy, and the churches of St.-Loup-de-Naud, La Chapelle-sur-Crécy, Poissy, Saint Maixent, Vaison, and Nieul-sur-l'Antise.

The following is the account of work done in connection with important public buildings during the year:—

**ARCHIVES OF THE EMPIRE.**—The new wing of this establishment was terminated, and the most precious documents in the collection have been arranged in the new rooms, which occupy two floors.

**CHATEAU OF SAINT GERMAINS.**—The northern façade is completely restored and also the grand staircase, and the works are also well advanced on the eastern façade. The attempt to restore this old castle to as nearly as possible its primitive appearance is one of the most interesting works of the present time. The building, which was not long since a prison, is now devoted to the purposes of a Gallo Roman museum, which is already extensive, and will shortly be greatly extended.

**ÉCOLE DES BEAUX-ARTS.**—The great inner court of the building has been covered with a glass roof, decorated, and converted into a museum of casts from the antique.

**THE LOUVRE.**—Several of the antique sculpture galleries, and the fine gallery known as the *Salle des Empereurs*, have been completely restored and reopened to the public. Two grand staircases are in future to give ingress and egress to the public; one of these is already in use, and now forms the only entrance to the galleries of the Louvre above stairs. This portion of the establishment has not only been completely renovated, but increased by the addition of more than one gallery on the ground floor.

**THE TUILERIES.**—The works performed here are truly gigantic. As soon as the corner of the palace near the river, known as the *Pavillon de Flore*, was rebuilt, the gallery which connects that part with the beautiful building of Henry II. and those of Napoleon III., known as the *Galerie du Carrousel*, was demolished. This was only about two years since, and the whole of the new work has been finished and the gallery roofed in for some time, and the internal works got well in hand. This wing includes, besides a considerable section of the great gallery of pictures, a new *Salle des États*, to replace that in the Louvre of Napoleon III., and which is to be given up to the museum. The pictures are being re-hung in the new gallery.

**SILVER MANUFACTORY.**—The whole of this establishment is being rebuilt on a site near the old one. The offices are finished and occupied, and the museum, workshops, engine-house, and dependencies are progressing fast.

**BIBLIOTHÈQUE IMPÉRIALE.**—The great reading-room, with the library, in the midst of which it is placed, is, as the readers of *THE ARCHITECT* know, not only completed, but open to readers. The old buildings facing the Place Louvois are demolished, and the new façade commenced.

**NEW OPERA HOUSE.**—The main works of this building have not advanced much, the credit granted not being sufficient for the purpose. The money in hand has been expended principally in covering various parts of the building, so as to prevent injury to the work. The dressing of the outer walls has been continued, and the staircases and lobbies. The various works of art are being prepared in the artists' ateliers.

Such are the services which the State in France has performed for Art and her treasures in a single year!

**Bodmin—Cornwall County Asylum.**—The Commissioners in Lunacy in their latest report, speaking of the new building for private patients recently erected from designs by Messrs. Norman and Hine, Architects, Plymouth, say:—'The accommodation is of the most complete kind, and nothing has been spared to make it suitable to patients of the better and more educated class. We are not acquainted with any that would compare with it, supplied at such low rates of payment.'

## ESTIMATES FOR PUBLIC WORKS IN THE PRESENT YEAR.

**THE** Estimates for the present year show a net decrease in comparison with the past year of 52,726*l.*; the total estimate for this year being 1,222,806*l.* Of this sum 30,535*l.* is allotted to the Queen's palaces, 3,416*l.* to palaces partly in the Queen's occupation, and the remainder to palaces not used by Her Majesty. The proposed new works include fire mains and tanks at Buckingham Palace, at a cost of 6,500*l.* At Windsor Castle the special works are new stores for furniture, making the passages in the Star Building fire-proof, laying oak floors in State Rooms, iron staircases to Plate Rooms, diverting the drainage of the Castle and buildings from the Thames, and a variety of smaller works. For the palaces not in Her Majesty's occupation, there is a vote of 4,500*l.* for diverting the drainage of Hampton Court from the Thames.

The Royal parks and pleasure grounds are estimated to cost 128,877*l.* This vote includes the completion of a river embankment at Battersea, and completing the new range of hot-houses at Kew, the proposed cost being 2,307*l.*; new iron railings and gates at Regent's Park, estimated to cost, when complete, 25,000*l.*; widening the carriage drive from Hyde Park Corner to Albert Gate, estimated at 1,020*l.*; extension of horse ride in Hyde Park, 2,017*l.* The following works are also included:—Gilding portions of the entrance gates at Hyde Park Corner and Marble Arch, 514*l.*; reducing the depth and purifying the Serpentine—a moiety of the cost, 13,125*l.*; new plant house, &c., at Victoria Park, 362*l.*

The estimate for the ordinary work on public buildings is 122,479*l.*, showing a decrease of 16,416*l.*; this vote includes rents for hired accommodation for public departments, amounting to 36,188*l.*, and 10,402*l.* for rates and taxes. There is also a vote for the erection of a new library for King's College, Aberdeen, a new house for the Astronomer Royal, at the Royal Observatory, and works at the Botanic Gardens, Edinburgh. The sum of 249*l.* is allotted for a new window in Parliament Hall, and 4,000*l.* for new record rooms in the Scotch capital.

The proposed charge for furniture for all the public offices, including the numerous hired offices, about 130 separate buildings, is put at the moderate sum of 13,245*l.*

In connexion with the Houses of Parliament there is a provision for buying property between the Victoria Tower and Millbank Street to the amount of 25,000*l.*, in part purchase of a block of buildings which was originally estimated to cost 150,000*l.*; and there is an estimate of 50,000*l.* for the Houses themselves. These proposed new works are for the central hall, increasing light and decorating walls, 8,000*l.*; Queen's robing room, 500*l.*; Royal staircase, 4,000*l.*; increasing light in rooms round central hall, 2,000*l.*; decoration of St. Stephen's Crypt, 500*l.* For warming, ventilating, &c., the estimate is 18,072*l.*; for works of art, 1,450*l.* This sum completes the estimate of 4,000*l.* for Herbert's 'Judgment of Daniel,' and 800*l.* balance of contract, for a chronological series of sovereigns now in course of erection in the Royal Gallery.

For the acquisition of additional land for the new public offices in Downing Street a sum of 48,000*l.* is to be voted; the original estimate was 104,000*l.*, which now appears at 147,000*l.*; and for the new Home and Colonial Offices the proposed vote is 32,000*l.* The east wing of the new Record Office is estimated at 30,000*l.* for the present year, the total original estimate being 61,000*l.* For the restoration of the Chapter House at Westminster 3,635*l.* is to be voted, part of an original estimate of 25,000*l.* The enlargement of the National Gallery figures for 55,000*l.* in the present year. The original amount for the acquisition of land on the northern side of the present building was 128,000*l.*, but this has been increased to 142,575*l.* The new buildings for the University of London stand for 30,000*l.* during the present year, being the like amount to that voted last year; the original estimate for this structure was 72,000*l.*, but the revised amount is 89,000*l.*, to include bookcases, sculpture, &c.

The University buildings at Glasgow stand for 20,000*l.* in the estimates, being an instalment of 120,000*l.*, to which the aid from the public funds is limited. The Industrial Museum at Edinburgh is to have an allowance of 10,000*l.* for the extension of the halls and the completion of the western section of the Museum. Burlington House is to have a vote of 64,834*l.* for the erection of the new building on the site of the wings, for the accommodation of the learned bodies. The total of this estimate is 160,000*l.*, which includes a provision for the purchase of a portion of the Albany Chambers for the improvement of the site.

The vote for the Post Office and Inland Revenue buildings shows a large increase for the present year. The proposed vote under this head is 135,041*l.*, being an increase of 45,575*l.* over the estimate of last year. The amount required for the erection of the new offices in St. Martin's-le-Grand in the present year is 50,000*l.*, out of 150,000*l.*, the total estimate for the building; and the balance of the sum to be voted is to be spent on the post offices at Cardiff, Derby, Hastings, Sheffield, Preston, and other places. The harbours, &c. under the control of the Board of Trade are estimated to cost 69,475*l.* this year, being a reduction on the estimates of last year for this service of no less than 47,200*l.*; of the total sum 28,000*l.* is estimated for Dover, 22,000*l.* for Alderney, 16,000*l.* for Holyhead, 437*l.* for Portpatrick, and 5,300*l.* for Portland. This gigantic work appears nearly completed. The total estimate having been 1,049,125*l.*, and the amount already expended 1,023,526*l.* The total cost, therefore, appears to be less than the original estimate.

There is to be a vote for the Wellington Monument of 2,000*l.*, and of 667*l.* towards the original estimate of 2,000*l.* for a monument to Lord Palmerston.

The total estimate for works in Ireland is 145,455*l.* This includes the works for coast guard stations, new works at the law courts and offices, police and constabulary buildings, grants for new schoolhouses, model schools, and a model farm; also the cost of dredging and maintaining harbours and fishery piers. Lighthouses abroad are estimated to cost 31,810*l.*, including a portion of the cost of a new one at Inagua, and on the Bird Rocks at the Bahamas, each of which is estimated in total at 10,000*l.*

Another branch of the votes for these services is that for embassy houses



abroad; those at Paris and Madrid are estimated to cost 1,887*l.*, while those at Constantinople, China, Japan, &c., stand for 62,585*l.*, being a decrease of more than 10,000*l.* in the estimates of last year. Out of the sum to be voted this year, 35,000*l.* is for China and 10,000*l.* for Japan, the total estimate for the works in China alone being 179,382*l.*; there is also an estimate of 20,000*l.* for the cost of a mission-house at Tehran, of which 8,000*l.* is to be expended in the present year. In addition to this estimated outlay the staff of the Office of Works is estimated to cost 34,222*l.*, which includes a new officer, called the Secretary for Works and Buildings, who is to have the especial charge of that portion of the office duties.

## ANCIENT MAPS OF PARIS.

NEW HISTORICAL MUSEUM.

PARIS is already rich in Museums. Besides the magnificent galleries of the Louvre, there is the museum of the Hôtel Cluny, which contains one of the finest mediæval collections in the world. At St. Germain's is a new museum devoted to illustrations of the history of France, and another establishment is now being prepared for the reception exclusively of antiquities belonging to Paris itself. This new museum is placed in an old mansion, known as the Hôtel Carnavalet, in the neighbourhood of the Place de la Bastille. This mansion is famous in more than one respect: in the first place, it was originally decorated with sculptures by one of the greatest artists France has yet produced, poor Jean Goujon, who was brutally assassinated at the massacre of Saint Bartholomew (these works still exist, and have been carefully restored); and, secondly, it was for a considerable time the residence of the famous Madame de Sevigny.

Considerable collections of city antiquities are scattered about Paris, and will, doubtless, mostly find their way in time to the Hôtel Carnavalet; for in France, as in England, it is invariably found that a well-established public museum attracts donations from all quarters.

Maps of Paris will naturally form a department in the new gallery, and the following list of plans, already in possession of the city authorities, will interest many persons:—

1. A plan, in manuscript, found in the Abbey St. Victor, and showing Paris as it was in the year 1400. This map was engraved by Dheullard in 1766.
2. Another original plan made from tapestry work, of about the same period. These are the oldest topographical records of Paris known to exist, with the exception of representations of some public edifices painted on the margins of an old manuscript presented to the city of Paris by M. Firmin Didot, the well-known printer, publisher, and biblioplist.
3. A plan of Paris of the time of Henry II., 1560.
4. An Italian plan of the date of 1566.
5. The plan of Quesnel, in twelve sheets, in the reign of Henry IV., 1609.
6. A plan bearing date 1615, engraved by De Witt, of Amsterdam.
7. Another, engraved in Holland in 1620.
8. A plan, executed in 1651, but which shows only the streets.
9. The plans of Boisseau and of Gomboust, both produced in 1652.
10. Defer's plan, 1692.
11. The plan of Jouvin de Rochefort, 1697.

From the commencement of the eighteenth century to the present time the maps of Paris may be counted by dozens, the best known being those of Félibien, Turgot, Bonamy, and Verniquet.

This series of plans is curious, not only as showing the gradual growth of the city, but also the successive enlargement of the city boundaries, which originally included only the island on which stands the fine old church, now Cathedral, of Notre Dame, and are now represented by the grass-grown slopes, never, it is hoped, to be blackened by powder, of the fortifications which surround the city.

Attached to the Hotel is a large courtyard, and workmen were for the time occupied in setting up there the stones of a curious old arch, lately removed to make room for the new courts of assize built in the rear of the Palais de Justice. It is more than probable that as the demolitions of Paris proceed, other interesting relics will be found for the court of the new museum.

## FERDALE COLLIERY EXPLOSION.

A LOUD and terrible response has been given to the text of our article on Colliery Explosions printed on April 10. In the Ferndale Colliery (in which, in November 1867, 168 persons perished by the most fearful calamity that yet has devastated the underground kingdom) an explosion took place on the 10th current, in which it is feared that at least 60 miners have lost their lives. The works are of great extent, carefully ventilated, and divided into three separate portions, with such precaution that, when the shock occurred in the Duffryn part of the mine, the miners in the second division were uninjured, and those in the third were positively unaware of the occurrence. It would be difficult to imagine any circumstances more creditable to the general arrangement of the works or to the care exercised by the proprietors and managers.

The moral to which we pointed on the occasion above referred to is to be found repeated in a brief line of one of the telegrams describing the attempts to re-enter the mine. 'AN UNLOCKED SAFETY LAMP was found in the vicinity of the explosion.' How long will it be before such measures are enforced as will put it out of the power of any individual miner, by carelessness, by foolhardiness, or by stupidity, to produce such fearful calamity? Each miner should be searched and each lamp examined before being allowed to enter a mine, and unpickable locks should be used.

One wing of the new building at Dulwich College, capable of accommodating 860 boys, will be opened at Midsummer.

## BUILDING CONTRACTS.

(THE LEGAL VIEW.)

THE difficulty of the English law at the present time, whether caused by the complex relations of modern society or by the way in which the law is created and promulgated, or whether it is owing to a combination of both causes, has undeniably this, amongst other results, that it is next to impossible for any one to understand the legal effect of his contracts or his other acts, unless he has given a considerable amount of attention to the study of the law. To give such attention requires, however, much more leisure than can usually be afforded by those who are not connected with the law as a profession, and most people are in consequence in a state of the most entire ignorance of the most elementary principles of the law to which they are subject, and which dictates their various rights and duties. One of the forms in which this ignorance shows itself is extreme carelessness in entering into contracts even when of the most important nature. Few persons pay any attention to the wording of the writings which they sign, and are often afterwards much surprised at the legal construction that is put upon expressions and sentences which they hardly noticed when they entered into the contract. The experience acquired by one individual in the course of a legal proceeding is seldom appreciated by others who are not directly interested in the question then at issue, and hence it is that documents are every day executed by people who are quite ignorant of their real effect, and who would be horrified if they knew the meaning which the law attaches to the engagements into which they so readily enter.

In former days the evil of reckless contracts was thought so great that the law sometimes gave relief simply on the ground of the hardship imposed on one of the parties. Bonds to secure the payment of money are the most familiar instances of this. By the plain construction of a bond in the usual form, if the obligor did not actually pay the money mentioned in the condition on the appointed day, he became liable to pay the larger amount mentioned in the obligatory part of the bond.

The Court of Chancery at a very early period interfered to prevent the obligor from suffering this hardship, and the obligee was compelled to be satisfied with the amount of the debt and interest and damages for the delay in the payment. Later still a statute of Anne gave the obligor similar relief at law. The same principle has been extended to other cases where a person contracts to pay a penalty (except where it is by way of liquidated damages) on the non-performance of a contract.

The tendency of the Courts at the present day is, however, to allow persons to contract as they like, whether the contracts are foolish or not. The old authorities relating to penalties are still followed; but the Courts decline to extend their principle any further. The mere fact of hardship imposed upon one of the parties to a contract is no ground for relief at law or in equity unless the circumstances come directly within the authority of cases already decided.

There is, perhaps, no class of contracts in which greater recklessness of consequences is shown than in building contracts. When the owner of land wants to build upon it, he generally chooses an architect in whom he has confidence, and then advertises for tenders for the buildings, and having chosen a contractor to do the work, he confides the superintendence of the erection of the buildings to the architect. One of the commonest terms in building contracts is, that the work is to be paid for by instalments as it progresses, on the architect giving certificates from time to time that the work is properly done. It is also generally stipulated expressly that no money is to be paid either during the construction or on the completion of the building, unless the builder obtains from the architect a certificate that the building is being built or is completed, as the case may be, to his satisfaction.

Such a stipulation as this practically leaves the builder entirely at the mercy of the architect, who is thus placed in the position of an arbitrator between the landowner and the builder. The effect of these stipulations in building contracts has more than once come before the Courts. In *Clarke v. Watson* (13 W. R. 345) the action was by a contractor against a landowner for payment for work done under a building contract which required (in the usual form) that the plaintiff should not be paid until the defendant's architect had given a certificate that the work was properly completed. The declaration averred that the architect withheld his certificate improperly, and claimed payment as if the certificate had been given. The Court held on demurrer that the declaration was bad, and that the improper refusal of the architect to give the certificate did not dispense with the performance by the plaintiff of the condition that he should get the certificate which was precedent to his right of action against the defendant.

This latter point arose in the case of *Davis v. Taylor*, in the Court of Exchequer last week. The action was by a builder, under a building contract in the ordinary form, against the architect. The declaration alleged that the defendant knew that the plaintiff had properly completed the work, and that without reasonable cause, and fraudulently and maliciously, and to injure the plaintiff, he withheld his certificate, whereby the plaintiff was unable to obtain payment from the landowner. There was a demurrer to the declaration, and the Court have reserved their judgment. *Clarke v. Watson* shows that if the architect, in such cases as these, chooses to withhold his certificate, however improperly, the builder is entirely without remedy against the landowner as he has not got the certificate, and it has hitherto been the general opinion that no action could be maintained by the builder against the architect, who is under no duty towards the builder either by contract or otherwise.

It would seem, from a dictum of Willes, J., in *Clarke v. Watson*, that if the architect refused to exercise his judgment, and declined to consider the matter at all, the proper course for the builder would be to call upon the landowner to appoint some other architect to act in the matter. If the landowner refused to do so, it is possible that the builder might have a remedy, as the landowner might then be considered as being in the position of a person who had never appointed an architect, and had thereby himself rendered the performance of the condition precedent impossible. If the landowner by any act of his own prevents the builder from getting the certificate, the absence of the certificate cannot be raised by the landowner as a defence

to an action by the builder. It has been decided (*Batterbury v. Vyse*, 11 W. R. 891) that if the architect refuses to give the certificate in collusion with the landowner, the builder is relieved from the necessity of obtaining it, and can maintain an action for payment without the certificate.

It does not often happen, however, that an architect refuses to come to an opinion on the subject of the works under his charge, or that a landowner can be proved to have caused his architect to refuse a certificate, or that it can be shown that an architect has acted maliciously in refusing a certificate. The ordinary case is (and it is one that frequently happens) that the architect, whether rightly or wrongly, has himself formed an opinion that the works are not properly done. The correctness of this opinion cannot in these cases be subjected to any test, as the builder has beforehand engaged that his payment shall depend upon the contingency of getting the certificate.

So far we have only dealt with the builder's rights at law, but in equity he is in no better position. In *Bliss v. Smith* (34 Beav. 508) it was held that a builder had no remedy against a landowner whose architect refused to give a certificate, unless there was either fraud or the accounts were too complicated to be taken at law. Practically, the builder's position is the same in equity as at law. The builder under an ordinary building contract is therefore entirely at the mercy of the architect, who is a judge from whose decision there is no appeal.

The chief objection to such a state of things depends not so much upon the fact that the builder must submit to the decision of the architect, because that is nothing more than is voluntarily accepted by every litigant who consents to an arbitration. The real hardship is that the arbitrator is the architect who is employed and paid solely by the landowner, and thus there may be a direct clash between the claims of the builder and the interests of the architect's employer. The architect is thus placed in a position which no one should occupy. It resembles somewhat the case of a man who is judge in his own case. Such a position renders it possible for an unscrupulous architect to do great injustice, and at the same time makes it difficult for one who is scrupulous to do his employer justice, and it ought, therefore, to be avoided. We do not for a moment mean to say that architects placed in this position do not generally do their duty and do it well. On the contrary, we believe that in the majority of cases they strive to do justice to both parties; but notwithstanding this they are necessarily open to suspicion on account of their position, which in itself is far more difficult than that of an ordinary arbitrator who is equally independent of both parties.

The simplest remedy for this evil would be to appoint some independent person who should, in case of dispute, be the ultimate arbitrator between the builder and the landowner. It would be easy to adopt a form of contract which should contain such a provision, and if builders were once thoroughly aware of the legal construction of their ordinary contracts it is probable that they would, in their own defence, insist upon the insertion of some such provision as we have suggested. In the meantime some good may be done by pointing out the objections that there are to the common form of building contracts which is now generally in use.—*Solicitors' Journal and Reporter*, June 12.

## REVIEWS.

VILLA AND COTTAGE ARCHITECTURE. SELECT EXAMPLES OF COUNTRY AND SUBURBAN RESIDENCES RECENTLY ERECTED; WITH A FULL DESCRIPTIVE NOTICE OF EACH. London: Blackie & Son, Paternoster Row.

Example is better than precept, says an old proverb; and if this be true, Messrs. Blackie, by collecting 32 examples of the work of 19 architects into this handsome volume, may be supposed to have done more for those who build houses than they could have done by publishing an elaborate treatise. The value of such a book must always depend upon the excellence of the buildings given in it, the appropriateness of the selection for practical purposes, and the completeness with which the examples are shown. Sound judgment and knowledge of the subject appear to us to have been brought to bear on all that belongs to the descriptions and illustrations of the buildings selected, but the appropriateness and excellence of the designs chosen vary remarkably: the best are, of their kind, very good indeed; there are, on the other hand, some which it would have been a benefit to the volume and a kindness to their architects to have suppressed; and between these two extremes the bulk of the illustrations may be taken as fair average samples of what they profess to be—dwelling-houses of from 500*l.* to 2,500*l.* cost, executed from the designs of known architects, English and Scotch. The English contributors are—Messrs. Ayliffe, Banks & Barry; Ewan Christian; Darbishire; Hine & Evans; Kendall, jun.; Lamb; Paull; Speakman & Charlesworth; Truefitt; Walker; and Walters. The Scotch ones are—Messrs. Baird; Cousin; Gordon; Rothead; Shiells; A. & G. Thomson; and Walker.

The most striking designs in the volume undoubtedly come from Scotland; and we cannot but regret that the editor of a book which happens to furnish so good an opportunity of contrasting the peculiarities of Scottish and English work should have failed or neglected to obtain more houses built by the foremost men of the most active school of English architecture. It is true Mr. Ewan Christian is represented here, but we look in vain for any example of Mr. Scott, Mr. Ferrey, Mr. Street, Mr. Burges, Mr. E. W. Godwin, Mr. Somers Clarke, Mr. Blomfield, Mr. Waterhouse, Mr. Norman Shaw, or Mr. Nesfield; and we regret the absence of these names. Their best works would have illustrated the real adaptability of Gothic to domestic works of moderate size and pretensions, in a better manner than much of the doubtful Gothic which the volume contains. And we are English enough to wish that some South-country work had been introduced of as high a character as the fine and exquisitely wrought-

out designs of Messrs. A. & G. Thomson of Glasgow, who have shown again in the works they contribute to this volume, as they have shown elsewhere in various ways, that it is *not* impossible so to treat Greek architecture as to make it adapt itself to the rough materials and keen climate of a Northern country without losing its peculiar character and beauty.

We are permitted by the courtesy of the publishers to reproduce one of the plates (there are 80 in all), showing the plans and a perspective view of one of Messrs. Thomson's buildings—a pair of semi-detached villas.

The plate we have selected gives a fair example of the execution of the whole—pains-taking, distinct, well arranged on the page (in itself a great merit), but deficient in spirit, to an extent which is so far from setting off the designs that the engraver in some cases has barely done them justice. The most spirited plates considered as engravings in the book are No. 63, a villa by Messrs. Paull & Ayliffe; Nos. 55 and 56, representing Mr. Truefitt's own dwelling house at Holloway, the cheapness and compactness of which are not unknown to fame; and No. 24, representing a very original design for a park-wall and gates, by Messrs. Thomson. A little more of what the French call *chic*, even in these plates, and a good deal more of it in the remainder of the book, would have doubled its popularity, and that not so much by unfairly concealing defects as by bringing out the real play of light and shade.

Apart from this tameness, the getting up of the volume does great credit alike to the editor and the publishers. The explanations are lucid, useful, and not too long, and the selection of drawings made in those cases where all the plans or elevations of a house are not given is judicious.

Such a work as this may often furnish a valuable series of precedents to be looked over by gentlemen intending to build, and may furnish the basis of their instructions to their architects. The houses are not so given that it would be easy for an adventurous builder to attempt to reproduce them from these engraved plans alone; and for such a purpose the authors of the designs (which ought to be duly registered) would, of course, not have lent their plans. As a series of executed examples the work will often, no doubt, be serviceable to architects; and though here and there it may be cited in support of things which but few approve at the present day, that blemish need not seriously interfere with its present usefulness; while, should another edition be called for, a judicious and resolute use of the pruning knife might entirely remove it.

## ILLUSTRATIONS.

DOUBLE VILLA AT LANGSIDE, GLASGOW.

THIS building has been erected from the designs of Messrs. A. & G. Thomson of Glasgow.

The clever mode in which extreme variety is procured by the simple expedient, suggested in this instance by peculiarities in the site, of reversing the plans of the two houses will catch the eye at once. It is open to the objection that one or other house is likely to have inappropriate aspects given to some of its rooms; but it is none the less highly ingenious. Some of the peculiarities of Scottish planning, notably the downstairs bed-room and the upstairs drawing-room, and the position of some of the conveniences, are illustrated on the plans.

The treatment is well adapted to free-stone, the material used, and appropriate to the square windows in familiar use in England. Special precautions have been taken to render the roof secure notwithstanding its flatness, and we learn that the lining of the walls in dining and drawing-room is almost entirely executed in wood, with a good deal of decorative treatment.

The cost of this pair of villas is stated at a few shillings under 2,250*l.* The date of their erection, 1856-7. This building is here illustrated by permission of Messrs. Blackie & Co.

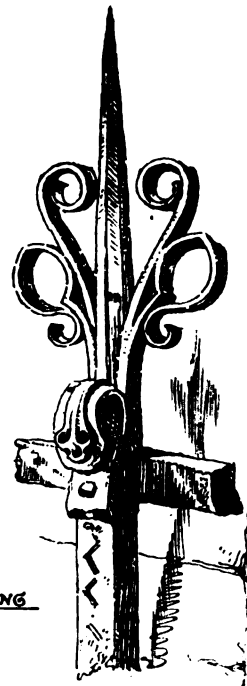
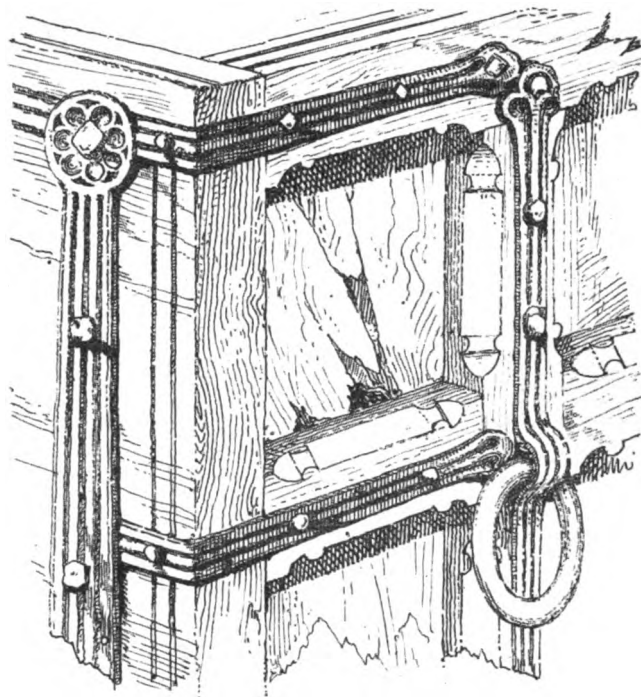
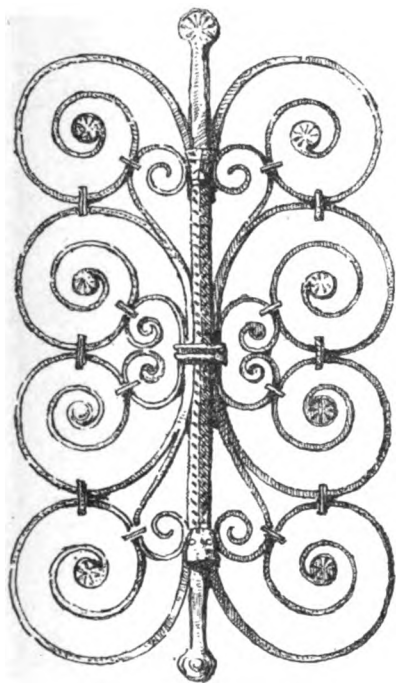
## ANCIENT METAL WORK.

THE examples of iron-work illustrated in the accompanying sheet are principally from the county of Sussex. The corner of an old chest shows some early metal work, binding the construction in a very strong manner; but, in spite of the precautions taken, it is now decayed and broken to pieces. This, as well as the lock, railing head, and chancel screen, are from Chichester Cathedral; the latter is a most curious instance of the use of stamped work, which the illustration shows full-size. In this method of ornamentation, the ends of the scrolls have been divided, beaten thin, then stamped on both the insides, and afterwards pressed together. How different this is from the indiscriminate use that is now made of stamped work! This description of work is certainly no apology for the modern pressed leafage. The leaves we now see are thin and brittle, being welded on near the beginning of the leaf (clumsily enough usually), and their designs are such that they look like stucco, or anything except stamped leaves.

Lately, a new chancel screen has replaced the old one; in many of its parts it is a copy of the earlier one, and is a praiseworthy effort on the part of a local tradesman. The contrast between this work and the more ambitious metal standards near is very great, the ornate elegance of the latter being quite out of keeping with an interior so grandly severe as Chichester Cathedral.

B. J. T.

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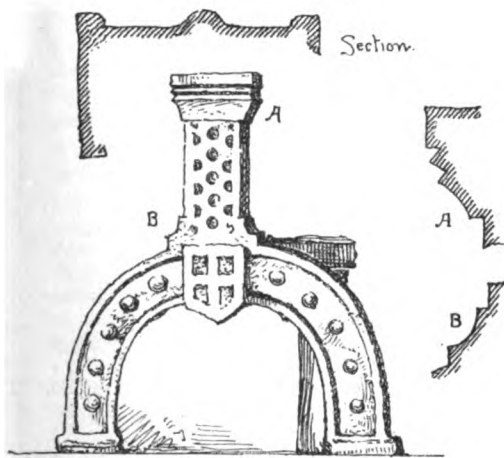


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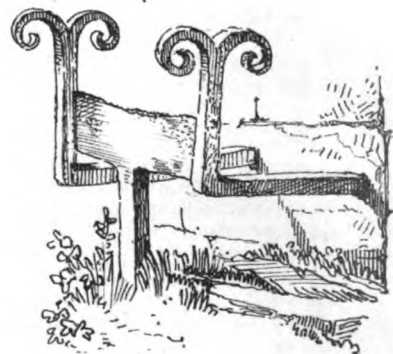
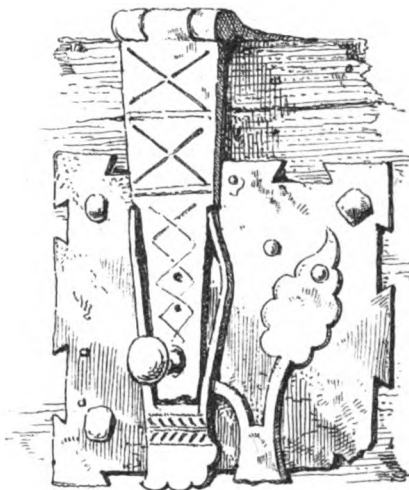
— from CHICHESTER CATHEDRAL: —

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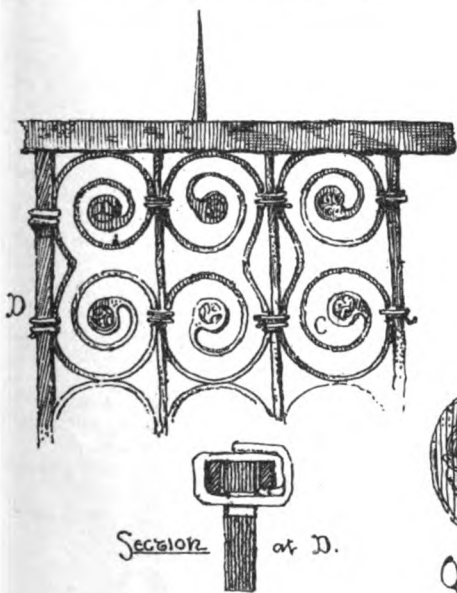
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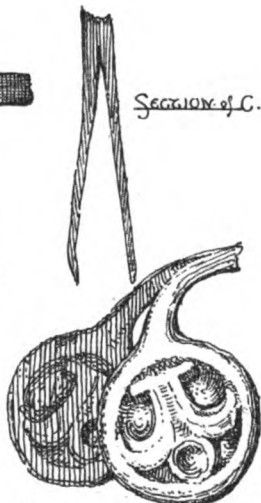
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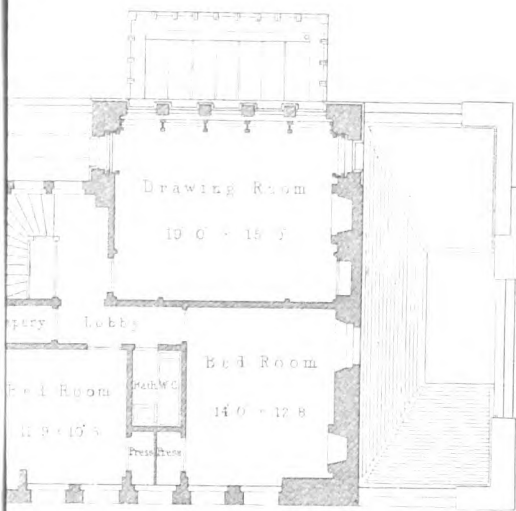
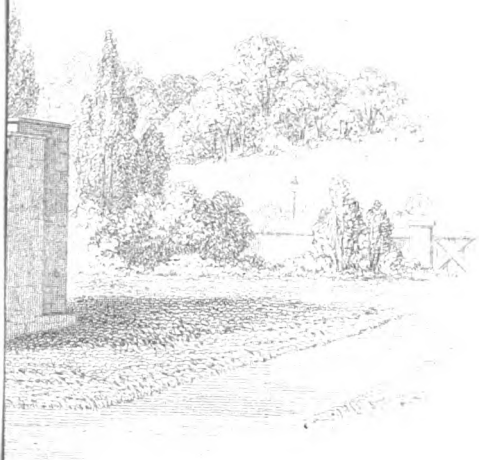
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## THE ROOF OF THE ROYAL ALBERT HALL.

WE gave, in the 'ARCHITECT' for June 5, an illustration of the wrought-iron roof which is being erected over this building, and we now give those descriptive details of its construction which we were then unavoidably obliged to omit.

The roof is domical and oval in plan, the major and minor axes inside the walls being 219 feet 4 inches and 185 feet 4 inches respectively, the oval being of such a form that it is a very near approximation to a true ellipse.

The principle of the roof is composite, there being a wrought iron flanged curb bedded on the top of the wall, and radiating curved and braced principals connected together and stiffened by trussed purlins, and two minor oval curbs at the crown of the roof connected together by diagonal bracing, and leaving a clear oval opening in the centre of the roof of 23 feet by 18 feet.

The materials in the structure are so disposed that the curved principals (acting as girders or trusses) are capable of carrying their own weight and the structural framework of the roof, including purlins, roof and ceiling rafters; and the main wall curb is capable of taking the thrust induced in the curved principals from the weight of the roof covering, ceiling, wind, and snow, so that no portion of the structure under the greatest estimated load would be strained to more than 6 tons per sectional inch. The strains on the principals and the wall curb are apportioned by means of folding wedge adjustments between the feet of the principals and the curb: thus by slackening or tightening the wedges the whole of the thrust can be brought on the curb or on the curved ties of the principals; but in every case of loading, the strains are communicated to the ties of the principals or the curb by means of the top flange of the principals acting as an arch, which is retained in the required position by means of the bracing and curved ties.

The illustration gave a general view of the principals, curbs, and purlins; the intermediate rafters, ceiling rafters, skylights, &c., not being shown.

The main wall curb is of a mean breadth of about 4 feet, and built up of a web plate  $\frac{1}{8}$ " thick, flange plates 8" wide by  $\frac{7}{16}$ ", connected to the web by 4 angle irons 3" x 3" x  $\frac{3}{8}$ " thick.

The principals are composed of built flanges of a T shape, composed of 2 plates 9" and 11" wide by  $\frac{5}{8}$ " thick, and 2 angle irons 3" x 3" x  $\frac{1}{4}$ "; the radiating struts are 4 angle irons, each 2 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " x  $\frac{3}{8}$ ", slightly curved and connected together by cast-iron distance pieces and bolts; the diagonals are round rods of varying diameter, provided with screwed adjustment. At the feet of the principals the flanges are connected together and fitted into cast-iron shoes with curved bearings, which are provided with folding wedge adjustments for apportioning the strains on the structure.

The purlins are composed of double angle iron flanges, channel iron struts, and flat bar diagonal bracing.

The minor curbs, 2 feet 6 inches broad, formed of plates and angle irons, are connected to the upper and lower flanges of the principals, and to each other, by diagonal bar bracing; and the strength and detail of this portion of the roof are such that any unequal loading on the roof caused by snow or wind is transmitted generally, so as to prevent any distortion or disturbance of the equilibrium of the structure as a whole.

The work throughout is connected together by riveting, has been manufactured by the Fairbairn Engineering Company, and is being erected by the contractors, Messrs. Lucas, under the superintendence of Lieutenant-Colonel Scott, R.E.

## THE LAW AND SCIENCE OF ANCIENT LIGHTS.

BY HOMERSHAM COX, M.A., BARRISTER-AT-LAW.

(Continued from p. 305.)

## PART I.

## SECTION III.—The Degree of Obscuration for which Redress may be Obtained.

We come now to consider what degree of obscuration will entitle a plaintiff to legal or equitable relief. In this respect Courts of Law and Equity act on different principles, depending on the different kinds of redress which they respectively afford. A man may sue at law for damages on account of the injury actually inflicted; but if he seeks to prevent an apprehended injury, or the continuance of one already sustained, his usual course is to file a bill in Chancery. In other words, Law will give him compensation for the past; Equity will protect him for the future. Within the last few years the suits in Chancery respecting ancient lights have been numerous, in consequence of the erection of modern lofty buildings in London and other cities. The Court of Chancery may grant either an injunction to restrain the defendant from creating a threatened obstruction, or what is called a *mandatory* injunction, commanding him to pull down the building which causes the injury (*Beadel v. Perry*, 3 Law Rep. Eq. 465). The Court of Chancery has also a jurisdiction to decree a compensation in money instead of the mandatory injunction (*Senior v. Pawson*, 3 Law Rep. Eq. 330).

It results from this difference of procedure that the Common Law Courts will give damages for an injury which would not be sufficient to justify an injunction in Chancery. The legal rule is thus expressed in a case of *Back v. Stacey* (2 Car. & P. 466):—"In order to give a right of action and sustain the issue, there must be a substantial privation of light sufficient to render the occupation of the house uncomfortable, and to prevent the plaintiff from carrying on his accustomed business on the premises as beneficially as he had formerly done." In the late case of *Dent v. Auction Mart Co.*, Vice-Chancellor Wood observed, that 'with the single exception of reading or for and, I apprehend that the above statement correctly lays down the doctrine in the manner in which it would now be supported in an action at law.'

To entitle the plaintiff to an injunction, something more is requisite than that amount of injury for which damages might be recovered at law. This is laid down by Lord Westbury in *Jackson v. the Duke of Newcastle* (33 Law J. Ch. 698), where it is added that the injunction would be granted

'where the darkening of the ancient windows of a dwelling has materially injured the comfort of those who dwell in it,' and with respect to places of trade or business, where the obstruction 'renders the buildings to a material extent less suitable for the business.' The rule is expressed by Vice-Chancellor Kindersley almost in the same terms in *Martin v. Headon*, but is inevitably vague. What is meant by 'material' or 'substantial' or 'serious'? The mere accumulation of such adjectives will not give them precision; and it is only by looking at the circumstances of particular cases that we can form any idea as to the meaning attached to them by the Court.

In *Beadel v. Perry* (3 Law Rep. Eq. 465) Vice-Chancellor Stuart referred to a very distinct and definite rule, but unfortunately it is one which cannot be applied in the most critical cases. His Honour said:—"The Metropolitan Building Act is framed on the principle that the height of a building on the opposite side of the street should not exceed the breadth of the street. That is, if the street be 40 feet wide, the height of the buildings on the opposite side must not exceed 40 feet. I have had means of ascertaining from one of the most eminent judges in the Common Law Courts that, as a general proposition, the Courts of Law are now disposed to take this view. It has been clearly proved in this case that opposite to the plaintiff's ancient lights the defendant has built a wall very much higher than the distance between them and the wall, and to that extent the defendant must in my opinion take his wall down. There must be a mandatory injunction to that effect.'

This was in effect a decision that the plaintiff was entitled to preserve all the light which entered his windows above a plane inclined at an angle of 45 degrees to the horizon. But it does not appear whether the angle was to be measured from the top or the bottom of his windows. The difference might be very material to the defendant, and involve the demolition of several feet of his new wall. It appears by the statement of the case that the plaintiff's first floor windows were opposite an old wall of the defendant's which was somewhat higher, but permitted the light to enter even at the tops of those windows at an angle of 40 degrees. The injury consisted in building a new and higher wall.

In the recent case of *Lanfranchi v. Mackenzie* (4 Law Rep. Eq. 421), Vice-Chancellor Malins seems to have decided that the title to relief must depend upon the question whether there is a material abstraction of the light required for ordinary purposes, and that the occupation of the plaintiff's house for a business requiring an unusual amount of light will not give him a special claim to an injunction. But the critical and difficult cases are where, by reason of obstructions more ancient than that of which the plaintiff complains, his right to light is much restricted, and the rule respecting 45 degrees is consequently inapplicable. For instance, in the case of *Martin v. Headon* (2 Law Rep. Eq. 425), not only the whole of 'sky-area' below the angle of 45 degrees, but a great deal more, was already shut out by pre-existing obstructions, for which the defendant was not responsible. The effect of the new building, of which complaint was made, was to decrease the already limited light by about 13 degrees measured horizontally, and 8 or 9 degrees measured vertically. This, the Vice-Chancellor Kindersley observed, would be but a trifling diminution if the plaintiff's windows had been previously well lighted; but when the sky-area already available was very limited, the diminution by even a few degrees became a serious matter. In this case it appears to have been proved that about one-half the sky-area which had been previously open to the plaintiff was shut out by the defendant's new building, and this was held to be an injury for which the plaintiff was entitled to relief. Again, in *Webb v. Hunt* (briefly reported in the 'Weekly Notes' of 1866, p. 165), the same Vice-Chancellor said 'he was of opinion that the effect of the new building was to deprive the plaintiff's windows of nearly half the amount of light which they enjoyed prior to its erection,' and decided in the plaintiff's favour.

These two cases supply something like a definite rule. It may be inferred that where the plaintiff's light is already scanty, the abstraction of one-half of it—and probably much less—will warrant the interference of the Court of Chancery.

## SECTION IV.—Reflected Light and Direct Sunlight.

There remain only two other legal points to be considered as a foundation for the optical investigation. The first is, that the Court will not regard offers on the part of the defendant to supply reflected light; the second, that the Court regards, not direct solar rays, but the average illuminating power of the sky. On the first point, it will be sufficient to give an extract from the judgment in *Yates v. Jack* (1 Law Rep. Ch. Ap. 295). There the plaintiffs required light for the purpose of sampling goods, and the defendant produced evidence to show that there would be ample light for the business carried on, and that the screening off the direct rays of the sun would be a positive advantage. Referring to these witnesses, the Lord Chancellor said:—"Some of them go so far as to say, that for the purpose of sampling a strong direct light is not desirable, and that the erection of the new building, by screening the sun's direct rays, will improve the quality of the light admitted to the plaintiffs' windows. The evidence satisfies me that for some purposes of their trade it is necessary at times to exclude the direct rays of the sun; and that in what is called sampling a subdued light may be better than direct sunlight. But this is not the question. It is comparatively an easy thing to shade off a too powerful glare of sunshine, but no adequate substitute can be found for a deficient supply of daylight." On the second point, the following passage from Vice-Chancellor Wood's judgment in *Dent v. Auction Mart Co.* (2 Law Rep. Eq. 238) will suffice:—"Then, lastly, there was the suggestion of glazed tiles—often made and never listened to by the Court. A person who wishes to preserve his light has no power to compel his neighbour to preserve the tiles, or a mirror, which might be better, or to keep them clean; nor has he covenants for these purposes that will run with the land, or affect persons who take without notice."

(To be continued.)

A firm in Oshkosh, Wisconsin (U. S.), has contracted to make 1,000,000 feet of wooden tubes, to lay down in that city for gas pipes. They are made of timber six inches square, bored in the same way as pump barrels.

## PARLIAMENTARY PROCEEDINGS.

## Copyright of Designs Bill.

In the Lords, on the 11th inst., Earl STANHOPE presented the petition from the President and Council of the Royal Institute of British Architects, desiring Architecture to be included in the provisions of the Copyright of Designs Bill, which we give elsewhere, and moved that it be referred to the Committee on the Bill, which was agreed to.

## The Preston Railway Station.

In the Commons, on the 10th, Mr. HERMON asked the President of the Board of Trade whether his attention had been called to the state of the railway station at Preston, owing to deficient platform accommodation for the traffic through that station; and whether he would lay upon the table the last report made by Colonel Yolland on the subject.

Mr. BRIGGS believed that many would agree with him in saying that the Preston station was one of the most inconvenient and disreputable in the country, when the amount of traffic which passed through it was taken into consideration. In 1866 Colonel Yolland made a report upon it, and it was forwarded to the companies concerned, and also to the Mayor of Preston; but nothing had been done, because, although the London and North-Western and the Lancashire and Yorkshire companies were anxious to have a new station, they had not hitherto been able to agree upon the proportion of the cost which each ought to bear. He was glad to hear from his hon. friend the member for York, who was a director of the London and North-Western Railway, that a plan which had been suggested by the London and North-Western Company was under the consideration of the Lancashire and Yorkshire Company, and that there was some reason to hope that the two companies would be able to come to an agreement, and so secure much better accommodation than had hitherto existed at Preston. As the subject was being considered by the companies, and was likely to be settled, perhaps the hon. member would not deem it necessary to print the report; but if he thought otherwise, there was no objection to produce it.

## The New Law Courts.

Mr. BENTINCK asked the Chancellor of the Exchequer whether the Royal Commission for the Building of the New Courts of Justice had appointed a committee to examine all the questions of measurement and cost; and, if so, whether the Bill for acquiring the new site on the Thames Embankment would be delayed until the committee had reported; and whether the Honourable Society of Lincoln's Inn had renewed their offer made in 1860 to provide courts for the Equity Judges within the precincts of their Inn, and upon what terms.

The CHANCELLOR of the EXCHEQUER: It is true the Royal Commission have appointed a committee. I cannot state the exact terms of the reference, but in substance it is that the committee shall inquire into the measurements of Mr. Street's plan, and also into those of the plan circulated among the members of the House by the Incorporated Law Society, and so severely called in question by Mr. Street. It is not necessary that the progress of any measure through Parliament should be delayed on account of the appointment of that committee. I cannot say that the Society of Lincoln's Inn has made a formal offer of the kind referred to; but something to that effect was stated by Lord Justice Selwyn to the commissioners the other day, and no doubt he only said what he had a right to say. From the statement of his lordship, it appeared that the Society were willing to renew the proposal if they thought it was likely to be accepted.

## South Kensington Museum.

In the Commons, on the 11th instant, Mr. DILLWYN asked why the report of the committee appointed by the Science and Art Department to inquire into the alleged deterioration of pictures belonging to the National Gallery deposited at the South Kensington Museum had not yet been presented.

Mr. W. E. FORSTER said the report had been delayed in consequence of experiments which scientific men had been engaged in making. He believed, however, it would be presented before the close of the present Session.

## Statues in Palace Yard.

On the 15th, Mr. NEVILLE-GRENVILLE asked the First Commissioner of Works what had become of the statue of Sir Robert Peel, lately removed from Palace Yard; whether it was to be replaced; if so, where; and whether there were other statues or works of art warehoused in Government stores; if so, what were his intentions respecting them.

Lord ELCHO also asked the First Commissioner of Works whether there was any truth in the report that the statue of the late Sir Robert Peel, which was condemned as an eyesore and discredit to his memory by the late Parliament, was about to be erected within a few feet of the spot whereon it stood before it was removed by the vote of the House of Commons.

Mr. LAYARD replied that the statue of Sir Robert Peel was now in the Government stores. (Laughter.) As regards its erection, he was waiting a communication from the committee having charge of it. There were two other statues, one of Brunel and the other of Stephenson, in the Government stores. When he came into office it was proposed that they should be placed on either side of Canning, but beside the fact that it would be somewhat inappropriate to place engineers in company with statesmen in Palace Yard, he found that Canning's statue was 11 ft. high, Brunel's 8 ft., and Stephenson's 9 ft. (Laughter.) It had been proposed to place these two statues on the Thames Embankment, certainly an appropriate site for the statues of eminent engineers. He added that it had been proposed to place Lord Palmerston's statue on the outside of the railing of Palace Yard; but in order to enable people to judge of the effect of it, he had ordered a model of the statue and pedestal to be placed there before the site was positively determined on.

## Municipal Government of the Metropolis.

On the 16th, Mr. C. BUXTON moved the second reading of his two Bills for remodelling, on a comprehensive scale, the municipal government of the metropolis, admitting, however, at the outset that, as the Home

Secretary had promised to deal with the subject, he did not propose to press them. The plan, as he sketched it, involved the creation of a regular municipal corporation—Mayor, Aldermen, and Burgesses, with all the official machinery—in each of the metropolitan boroughs, and also of a central corporation for the whole metropolis, elected by the ratepayers of the metropolis, and consisting of 135 Common Councilmen, Aldermen, and a Lord Mayor. The chief argument dwelt on by Mr. Buxton in support of his measure was the anarchy of the present system, of which he drew a forcible picture. He was seconded by Mr. MORRISON, but

Mr. C. BENTINCK moved the rejection of the Bill, though he admitted that London was the worst governed metropolis in the world. Mr. Buxton's remedy was utterly useless, and even mischievous. It was deficient, too, in all the requisites of municipal reform; it was opposed to the opinion of the proposed constituents, and it was a subject which the Government alone could deal with.

Mr. LOCKE also opposed the Bill, and sketched a plan of his own by which the whole of the metropolis would be brought within the scope of the City Corporation; and after some remarks from Sir H. HOARE,

Mr. BRUCE admitted that the Government alone could satisfactorily deal with the question, but declined to give any pledge as to time, alleging that they were already pledged for next Session to Irish land (not to mention the possibility of the Irish Church Bill coming back), education, licences, and local taxation, with local administration and sanitary reform behind. At the same time he pointed out some considerations against this particular form of remedy. For most of the functions of municipal administration a central authority would be necessary in London, and there would be nothing left for the local municipalities to do sufficient to justify their creation. Concentration of authority in large districts and the adaptation of existing powers he suggested as the leading principles of legislation, and he hoped, when he took the question up, to have the assistance of the Corporation of London.

Mr. BUXTON, after this, withdrew both the Bills.

## LEGAL.

## Court of Queen's Bench.—June 12.

(Sittings in Banco, before The LORD CHIEF JUSTICE, and Justices BLACKBURN, MELLOE, and HANNEN.)

EX PARTE WALKER, IN RE GRAVES.

This was an application to amend a registry of copyright in pictures. The application was under 5 and 6 Victoria, cap. 45, sec. 14, that if any person shall deem himself aggrieved by any entry made under colour of the Act in the book of registry, he may apply to a court to order it to be expunged or corrected. The 25 and 26 Victoria, cap. 68 (which incorporated the former Act), provided for a registry of pictures, and under that Act the applicant had been convicted of piracy of some pictures registered by Mr. Graves, the well-known publisher of engravings. The entry related to an oil painting, 'A Piper and a Pair of Nutcrackers,' and two pictures by Millais, 'My First Sermon,' and 'My Second Sermon,' and three photographs, entitled 'Waiting for the Verdict,' 'The Acquittal,' and 'Finding the Text.' The main defect alleged in the entries was, that whereas Mr. Graves in each instance was an assignee, the assignor, or the party originally interested, had not registered—that is, that neither the author nor any subsequent owner or assignee until Mr. Graves himself had registered. The applicant having, however, been convicted upon the evidence of title afforded by these entries, and being under imprisonment for his alleged offence, now claimed to have the entries struck out, as not warranted in law, nor sufficient to sustain the case against him. The court had at first, on the supposed authority of the case of *Chappell v. Purday*, dismissed the application, upon the ground that the Act did not apply, except as to persons really interested in the copyright or the title, and not to mere strangers; but as upon another report of that case it appeared that it had been misreported, the Court granted the rule, which now came on to be argued.

The Court held that the entry of Mr. Graves's proprietorship was sufficient, and that there might be a copyright in a photograph from a picture, though there was no copyright in the picture. As to any defect in the description of the work, it might be amended.—Rule discharged.

## Second Court.—June 14.

(Before Mr. Justice HANNEN and a Special Jury.)

REG. v. LOVBOND.

Mr. Serjeant Parry and Mr. Metcalfe were counsel for the prosecution; and the Solicitor-General, Mr. F. White, and Mr. Poland for the defendant.

This was an indictment instituted by the Metropolitan Board of Works against the defendant, a brewer, at Fulham, for erecting a building called the Tun-room, beyond the general line of buildings in the Lillie Road, North End, Fulham, contrary to the regulations of the Building Act.

Several legal points were adverted to and reserved for discussion hereafter before the full Court, and the only question on which the opinion of the jury was sought for by the defendant was whether in fact there was any general line of buildings in the Lillie Road.

The jury had had a view of the locality, and found that there was no general line of buildings in the Lillie Road.

A verdict for the prosecution was formally taken, subject to a case for the opinion of the Court, the finding of the jury to be inserted in the case.

## Rolls' Court.—June 12.

(Before MASTER of the ROLLS.)

MALTYBY v. WARE.

This was a light and air case. The plaintiff is the landlord of the Bird-in-Hand public-house, in High Street, Hampstead, for a term having eleven years to run, and the defendant is a grocer and cheesemonger, and lives next door. In June, 1868, the defendant pulled down and began to rebuild the outer wall of his premises, which abuts on a narrow passage between

the plaintiff's and defendant's premises, into which the plaintiff's tap-room window looks, with the intention of rebuilding it of a greater height than before. The effect of this, as the plaintiff alleged, was to darken the tap-room and seriously interfere with his business. The gist of his complaint was that many of his customers, who had been accustomed to be served in the tap-room, had refused to sit in it on account of it being so darkened, and insisted on being served in the parlour, the effect of which was to drive away the better class of his customers who frequented the parlour before. When the wall was nearly completed the plaintiff filed his bill to compel the defendant to take down the wall to its original height, and obtained an order upon motion accordingly. In August, 1868, the defendant's motion to dissolve this order was refused with costs, and the cause now came on for hearing.

His Lordship, looking at the increased height of the wall, could not doubt that the tap-room had been materially darkened. The grounds of defence were that the plaintiff had acquiesced in the erection of the wall, and that his loss of light in one place had been compensated by gain in another. Compensation was always set up in these cases, but it was no real ground of defence; and it could not be said that the plaintiff had acquiesced in the wall being built, inasmuch as he had stood still after the representations of the defendant that there would be compensation; and when he found at last that such representations were incorrect, it was not too late for him to seek a remedy. Nor could it be said that the suit was a frivolous one, inasmuch as the plaintiff had several years of his lease yet to run. The plaintiff was entitled to a decree with costs, under which the defendant would be compelled to reduce the wall to its original height. This was dealing out hard measure to the defendant, as he had certainly acted on the belief that the necessary consent had been obtained to the wall being increased in height, and he should therefore suggest that the plaintiff should waive his strict right under the decree, and consent to his Lordship doing what, in his opinion, the Court had not jurisdiction to do unless he consented—viz., leave it to his Lordship to settle what compensation should be paid to the plaintiff by the defendant for the darkening of the tap-room, and thus, by avoiding an irreparable injury to the defendant, restore the good feeling which seemed until recently to have existed between the parties.

**Court of Common Pleas.—June 14.**

(Sittings at Nisi Prius, before Mr. Justice KEATING and Common Juries.)

**ADGE V. PARAKEE.**

Mr. Powell, Q.C., and Mr. Daly were for the plaintiff; Mr. Day was for the defendant.

The defendant was an architect, and the plaintiff was a builder who had contracted for the erection of an hotel at Lord's Cricket Ground, and this action was brought to recover damages for slanderous words uttered by the defendant of and concerning the plaintiff in the way of his business. Some differences seemed to have arisen between the plaintiff and the defendant, which culminated in the latter saying, in effect, that the former would soon be in the Bankruptcy Court, and imputing to him that he was in insolvent circumstances.

Mr. POWELL said that he only wished for a public withdrawal of a slander which was totally without foundation.

This the defendant declined to give, on the ground that he had never spoken the words complained of, and the trial dragged along through the day without an atom of interest. In the end the jury found for the plaintiff, —Damages, 40s.; and the learned Judge refused to certify for costs.

**SOCIETIES.**

**On Architecture Connected with Structures of Civil Engineering.**

A lecture on this subject, was delivered on the evening of the 10th inst., before the members of the Society for the Encouragement of the Fine Arts, by Mr. Page, the late Acting-engineer of the Thames Tunnel, and the engineer for the bridges of Chelsea and Westminster.

Mr. Page pointed out that the subject is one of great interest to all who are jealous of the appearance of our public structures, especially the bridges over the Thames in the metropolis, which vary so much in character, and which number among them, between London Bridge and Wandsworth, five railway bridges, which might have been of a more architectural character than they appear to be. Mr. Page referred to kings and priests as the architects of the earlier ages, and to the great utilitarian structures of the Romans, especially the aqueducts and bridges, describing the bridge 'Alcantara,' built on the Tagus in the time of Trajan, A.D. 105, whose height from the bed of the river is 285 feet, 80 feet higher than the Towers of Westminster Abbey; also the Aqueduct of Theodoric, the Gothic King of Italy, at Spoleto, the height of which is variously stated from 82 metres, 269 feet, to 130 metres, which latter, although given by Gauthier, is not confirmed.

Describing the architectural features of these works and the bridge of St. Angelo at Rome, built by Hadrian, and rapidly referring to the various aqueducts, he then pointed out the mode of dealing with the architectural features of the works of the civil engineer, according to the magnitude and character of the design. Instituting a comparison between the delicate Water Gate of Inigo Jones and the grand structure of London Bridge, he pointed out that in the latter case, however beautiful was the dentilled cornice and the parapet, yet that the noble arches and piers were so impressive that the architectural details were almost lost in the vastness and majesty of the whole. Referring then to Southwark and Waterloo bridges, the works of those talented engineers, the Rennies, in terms of admiration, he described the beautiful bridge over the Wear at Sunderland, constructed in 1796; the Menai Suspension Bridge, by the great engineer Telford; and in a striking comparison between his own design for Blackfriars Bridge (the centre arch of which was drawn at 280 feet span) and the lighter structure and Gothic design of that built at Westminster, he illustrated the different architectural treatment of the two, so opposite to each other, and explained the principles of that treatment.

In bridges of Gothic design he recommended the study of the mouldings of various crypts, approved the simple mouldings of the style of Henry III.,

and, descending to the date of the Tudor Arch, gave the highest praise to the wonderful ceiling of the Chapel of Henry VII., stating that there had been no work executed before or after its date which could be compared with it in science, boldness of construction, and artistic embellishment.

Finally, Mr. Page asserted that the progress and perfection of great designs were the results of powerful and refined minds gifted with scientific, practical, and artistic knowledge, and that the operations of the mediocre practitioners (however wealthy) must ever tend to lower the standard of comparison, and to bring discredit on the age and country.

In speaking of the Lendal Bridge at York—a more ornamental bridge than that of Westminster—he mentioned the circumstance that the figure of the angel supporting the armorial bearings of the United Kingdom at the crown of the arch was taken from a royal princess, viz., the Princess of Wales, who, among her other titles, is the Angel of Lendal Bridge.

Sir Patrick Colquhoun, Dr. Davis, the explorer of Carthage, and other gentlemen took part in the subsequent discussion, and the meeting separated after votes of thanks to Sir George Bowyer, who occupied the chair, and to the author of the lecture.



**DRESS AND HOUSE DECORATION.**

SIR,—In this age the art of dress is almost entirely relegated to tailors and milliners, who are, as a class, not remarkable—as how should they be?—for high art notions; and those who consider themselves the wise and the practical of the earth would have us believe that dress is an art below the dignity of true man and woman, to say nothing of beings with immortal souls.

But the decoration of our houses is at present under the control of paper-hangers and furnishers; and if we are to have a revolution in the one case, so must we in the other. If our rooms are to be decorated by artists, so almost must those who are to inhabit them, and who form a very important part of the furniture, be decorated, if not under the supervision, at least under the inspiration of an artist.

Would it not be painful, most painful, to see the modern monstrosities of fashion moving about in rooms that in their smallest detail showed the care of a true artist?

So much may, I suppose, be taken for granted. I shall find few dissentients to the theory—the difficulty lies in the practice; but if your readers will follow me, I will try and show how I think the desired effect might, to a large extent, be obtained.

And I would not have it supposed that I am advocating a return to mediæval forms of dress—that, I hold, would be impracticable, and is false to all my ideas of true art; but there are even now many beautiful dresses in use; indeed the present style of dress at its best approximates very closely to a good style. Art and a love of art have, in the last twenty years, spread far and wide, and there are few circles now that are not to some extent acquainted with the art questions that are being agitated. There are few women, too, who have not a desire to make themselves look as well as possible, not only from feelings of vanity, but far more, if I mistake not, from an innate love of art. To woman, permission to strive at the beautiful in dress is conceded; all that remains is to direct her desires in the right way. The habit of copying fashions from Paris is, too, to a very appreciable extent on the decrease, and happily so, for all the credit French women deserve is that of dressing perfectly in a villainous style. Again, there can be no doubt that milliners and dressmakers do in their fashion display an immense amount of ingenuity and invention, and also of taste—misdirected it may be, but still of taste. Their course, to use a new simile, is like that of a rider on a bicycle who has learnt how to drive his machine, but not how to guide it; his journeying will not be of the most successful, though plenty of motive power is present. What is wanted is to convert this large army of inventors, ever on the search for something new, and not utterly devoid of taste, into an army of artists; the attempt may seem Quixotic, but I do not think that it is so.

First of all, it must be clearly understood that the attempt is not to subvert and restore, but to select and develop. The popular notion of artistic or mediæval dress is of something very extraordinary and fantastic, and this arises no doubt partly from the fact that the representations in most treatises and pictures give rather the out-of-the-way and extreme forms of dress than the ordinary costumes. It is as if a future historian of costume were to represent the present generation in the toilettes of flower-shows, picnics, or the seaside. What is first of all necessary is to correct this impression, and for this purpose illustrations should be provided of all those more moderate costumes that may appear suitable for the present day. We men have long got rid of the cumbersome gowns and long cloaks, and will not, I should think, be in a hurry to re-adopt them; and we shall hardly wish our ladies to appear in the extraordinary head-dresses of old times, picturesque as they may be, and much as may be said for them.

To give an instance of the differences of costumes at the same date: there are shown in portraits of the time of Queen Elizabeth numerous most charming dresses, though the popular idea of the dress of that time is of the horrible farthingale and the exaggerated ruff. At the present day ruffs of moderate dimensions seem to be coming in again, and very nice they look. There is, too, a very nice muslin dress that may be not unfrequently seen, somewhat similar to those introduced by Mr. Leslie into his pictures; and a dress similar to that most becoming one in which the Hon. Mr. Graves has painted several of his beauties in this year's Academy, seems simultaneously to have made its appearance everywhere; these are instances of the desire to adopt really good dresses when an idea for their development is acquired. I can speak from personal knowledge to numbers of ladies who spend considerable time and trouble in the devising and making of artistic dresses and accessories, and I have found nearly all ladies most ready and eager to listen to any suggestions on the subject.



As a means of spreading a knowledge of good forms of dress, I would suggest that the authorities at South Kensington, within whose province I think such a thing would properly come, should form a collection of figures showing the costumes of different dates; not the curious costumes, but those that are really beautiful and adapted to practical purposes. The collection should be formed exclusively with a view to presenting patterns and suggestions to our ladies and our dressmakers. I think there would be few more popular exhibitions, and I think few more useful. I should like to say a few words on the importance of the subject.

We can have no chance for art among the body of the people until we have overcome that slovenliness and carelessness that are so common. The man or woman who takes no interest in his or her own appearance will never take much interest in anybody or anything else's, while as soon as people have learnt to dress themselves nicely and carefully they begin to look for the same care in others, next to desire to see their rooms nice, then their houses and public buildings.

'Who would do great things must begin with small,  
And art begins at home or not at all.'

If we are to develop taste in great things, we must begin by developing it in the small matters of every-day life that are always present to, and always calling for some action of, the mind.

It is vain for artists to lament over the unpicturesqueness of modern costumes, and indulge in bitter reproaches of the Philistinism of fashion. 'Noblesse oblige': they who profess to lead art should take means to do so—not sit down and weep. If artists would unite to issue a cheap work, containing plates of different dresses of approved beauty adapted to modern times, they would be doing an excellent service to their art, and one that would not be unremunerative. I would also suggest that competent people, and there are surely plenty of such to be found, should deliver a series of lectures to milliners and dressmakers—nay, even to tailors. I do not think there would be any difficulty in drawing together large audiences, and it is most certain that if we would improve our art we must improve our art workmen. I commend this idea to Sir Francis Grant when he starts on his new sphere of usefulness. R. N.

#### ART v. ARCHITECTURE.

SIR,—The title of *THE ARCHITECT* informs its readers that the publication is intended to be 'a Journal of Art, Civil Engineering, and Building.' Will you allow me to put a question as to the exact meaning of this announcement?

I am not about to ask you to give currency to a criticism on a criticism; nor have I any wish to say a single word that can be ungrateful to an able contributor to your columns, who has both the courage to sign his opinions, and the candour to admit that he looks at the arts of the painter and of the sculptor exclusively from the standpoint of the architect.

But the prominence given in your pages to the criticism of Mr. Godwin is such as to raise the question whether a journal which has attained such rapid and well-deserved popularity as your own, aspires to become an authority on questions of art, or limits its range to the single department of architecture? It has been my hope that you entertained the wider and more catholic view.

The papers, however, to which I refer are the expression of the very strictest sect of professional *esprit de corps*. No painter, no sculptor, no man of taste who is not imbued with that spirit, can fail to take exception to such expressions as 'if easel pictures are to be painted,' or to the statement that two of the noblest arts that are competent to human genius 'ought, rightfully, to have no existence apart from architecture.' To speak of painting and of sculpture as mere subsidiary architectural decoration is as unjust as it would be to speak of the architect as the mere builder of a show room for the productions of pictorial or of plastic art. It is almost equivalent to ranking the poet below the writer of specifications.

It is worse than idle for the sculptor, the painter, and the architect to contend as to the respective dignity of their several arts. The Muses are sisters. In any case where architecture is structurally combined with either sculpture or painting, it will depend on the superiority of genius in the individual artist, not on the relative dignity of the arts themselves, to determine which element is 'supreme, and which subsidiary; and that artist will be likely to entertain the noblest appreciation of his own art who is most ready to yield the honour due to his professional brothers.

For these reasons it is my hope that painting and sculpture may be treated of in your columns according to their own canons, and dealt with after their own merits. It depends on your decision on this point whether *THE ARCHITECT* is to be considered as an Art Journal or as only a Building Journal. No doubt a public is to be found for either. But I think no one can deny that to take the wider range is also to occupy the nobler position. It will be impossible for any journal which allows painting and sculpture to be spoken of as mere decoration to occupy that position.

I write with candour, but also with real anxiety as to the choice on which you may determine. There have been articles in your pages which led many of us to hope that a great accession to the art education of the country was to be expected from your labours; but for this to be the case you must respect the just susceptibilities of the different branches of the artistic corps—of those who handle the brush, as well as of

June 8, 1869.

ONE WHO HANDLES THE CHISEL.

#### NEW BUILDINGS AND RESTORATIONS.

**Sowerby Church.**—Two windows of Norman character have been opened out in the east end of the chancel in this church, and filled in with painted glass from the studio of J. W. Knowles, of York. The subjects represented are 'St. Peter and St. John healing the Cripple at the Beautiful Gate of the Temple,' and 'The Incredulity of St. Thomas.' Under each window is a brass plate, on which are emblazoned the arms of the Buckle family, and suitable inscriptions.

**New Church at Easington Lane.**—When the parish of Hetton (Sunderland) was divided into two, a movement was at once commenced to provide the funds required to erect a new church, the foundation stone of which was laid a short while since at Easington Lane. The newly-formed parish is termed 'Lyons Ecclesiastical District,' and comprises the villages of Easington Lane, Lyons, and Elemore, with a population of from 3,500 to 4,000. The estimated cost of the church is nearly 2,600*l.* It will be in the Early English style of architecture, and consist of nave, north and south aisles, chancel, organ chamber, and vestry. The east end of the chancel will be of a semi-octagonal form. The plans have been prepared by Mr. Alfred Swan, architect, Newcastle; the contract for the mason work has been let to Mr. Harrison, Houghton-le-Spring; and for the joiner-work to Messrs. Rankin Brothers, Sunderland.

**Bournemouth New Dispensary.**—The opening of the new dispensary buildings, situate in Madeira Vale, a short distance from Holy Trinity Church, took place lately. The need of a commodious and suitable building for the reception of patients suffering from accidents or from diseases of a non-infectious character has long been felt, and the most active and liberal measures have been taken by the friends of the institution to supply this want. The new building was erected at a cost of about 1,000*l.*

**A Handsome Building**—comprising commodious lecture-room, reading-room, library, a residence for the porter and his wife, a ladies' cloak room, and other offices—has been provided for the benefit of the increasing population of Westbury-on-Trym, through the munificence of Mr. H. St. Vincent Ames, of Cote House, Westbury. The cost of the structure, exclusive of the land, was upwards of 2,000*l.*

**Tewkesbury Waterworks.**—The first stone of the waterworks to be constructed by the Cheltenham Water Company for the borough of Tewkesbury was laid a few days since. The works appear to comprise two distinct parts—the tanks, filters, pumping-engines, &c., in the meadow by the river side, of which part of the walls and some of the earthwork have been done; and the water-tower on the eminence above, the foundation of which has been laid in very substantial brickwork upon a thick bed of concrete. The tower is intended to be ornamental as well as useful, and as it will rise 40 feet above the hill on which it stands, will be an object of considerable altitude, sufficiently so to give a pressure which will raise the water far above any building in Tewkesbury. It will bear a large cast-iron cistern on the top of the walls, to be surmounted by an elegant light iron palisade, to be reached by a spiral staircase in the centre of the tower.

#### The New Great Northern Railway Hotel at Leeds.

On and after 1st proximo visitors to Leeds will have the option of taking up their quarters at the above new hotel, which is of the Romanesque style of architecture, has four fronts, and occupies a site of 106 feet by 95 feet. The drawings and specifications were supplied by Messrs. M. E. Hadfield & Son of Sheffield. Among the arrangements are a covered way or corridor which gives access to the hotel from the Wellington Street station platform; and a hydraulic hoist from the floor of the Wellington Street entrance for passengers and luggage, which has access to each corridor to the top of the structure. The building rests upon a simple basement, which is indeed the plinth to the structure, and rises to a height of 130 feet. It is lighted with deeply recessed square-headed windows magnificently moulded and panelled, and at each corner are a number of beautifully carved figures which bear the Great Northern armorial badges, and were executed by Theodore Piffers of London. The principal entrance, which is in Wellington Street, is of polished granite of two colours, with oak doors which are studded with gilt nails. The whole of the interior is in keeping. The visitor on finding his way to the basement storey at once comes in contact with the restaurant and the kitchen offices, under which are a number of spacious cellars having direct access from the bar. The principal floor of the hotel is approached from Wellington Street by a large staircase. The entrance hall, which measures 23 feet by 28 feet, opens into a corridor 9 feet in width. On the right hand is a commercial room 43 feet by 28 feet, whilst the bar is placed nearly opposite. At the end of a nine-foot corridor are the smoking and billiard rooms, which occupy the north-east tower. Not far off is a servants' staircase, which communicates with every floor in that part of the building, and at the end of the corridor is a large coffee-room. The grand staircase, close at hand, is in extent 20 feet by 28 feet, composed of stone, and has an ornamental iron balustrade, in which is inserted the monogram of the Company. The contractors are Messrs. Shaftes & Barry, of York. The tile pavements are by Maw, of Broseley, and the metal work in the staircase, &c., by Messrs. Longden, of Sheffield.

**Evelina Hospital for Sick Children.**—On the 15th inst. a new hospital, erected in the Southwark Bridge Road, for the reception of sick children, was formally inaugurated. The institution has been established by Baron Ferdinand de Rothschild, in memory of his wife, whose first name constitutes its distinctive title. The space occupied by the hospital is an irregular triangle. The façade of the building, which is a plain, unostentatious brick front, presents the aspect of the arc of a circle. In the basement there are two kitchens, larders, storerooms, a linen room, servants' hall, and cellars, with the domestic offices. A waiting-room, a clerk's office, and rooms for surgeon, house surgeon, physician, dresser, and matron, constitute the apartments on the ground floor, with the exception of the departments in which the operations of the institution as regards out-patients will be conducted. The principal wards on the first and second floors are about 100 feet long, nearly 20 feet broad, and 14 feet high. On each of these floors there are four other smaller wards, all of which have been included in the general plan for specific objects. Servants' rooms occupy the greater part of the attic storey, and these are complemented by a quarantine ward. In the front and back of each ward large windows, each consisting of three movable divisions, afford a stream of light, which can be modified as occasion requires, while the windows at the rear form auxiliaries for ventilation. The corridors between the wards and the outer walls will be for the children's playground. Mr. Marsh Nelson is the architect. Dr. Arthur Farre suggested the specifications and details, and Messrs. J. Myers & Sons were entrusted with the building. The hospital is capable of accommodating 100 beds.

ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

Opening of the Architectural Museum.

The Council have decided to open the Museum with a public conversation on Wednesday, July 21, and cards will be issued by the President in due course.

The new premises built purposely for the reception of the magnificent collection of casts, &c., are now complete, and the work of arranging the collection is making rapid progress, under the superintendence of Mr. Wallis, the new curator. The casts which have been so long dispersed in various parts of the South Kensington Museum are now brought together again, and will be very shortly open for inspection and available for study. As a natural consequence, we already hear that offers of valuable additions to the collection are reaching the Council.

The new buildings are very near the southern side of Dean's Yard, Westminster, in Bowling Street. They are necessarily inexpensive in character, but have been solidly built, and possess excellent light. The contractor was Mr. R. E. Roberts, and the subscribers are indebted to him for the liberal terms on which he took the work. The honorary architects were Mr. Ewan Christian and Mr. Joseph Clarke.

Sale of Architectural Drawings.

Messrs. Christie, Manson & Woods sold, on June 15, the interesting and valuable drawings and sketches of the late James West, the well-known designer and illuminator.

The following were the prices of the more important of the architectural sketches:—

A volume, containing 138 leaves of sketches, in Belgium, Germany, Switzerland, Italy, and France; colours, Indian ink, and pencil, 1839	£4 10 0
A volume, 213 sketches, Essex, Berks, Sussex, Shropshire, Cheshire; half bound, russia, 1851	5 5 0
Another, 97 sketches, Sussex, Leicestershire, 1855; half bound, morocco	5 0 0
Another, with 195 sketches in North Wales, Essex, Sussex, the Rhine, Leicestershire, Derbyshire, 1853; half bound, morocco	4 12 6
Another, with 77 sketches in Normandy, 1865; half bound, morocco	9 5 0
Another, with 300 outlines and tracings; coloured prints of encaustic tiles	3 15 0
Another, with 600 tracings of Gothic ornaments, initial letters, &c.	3 10 0
Another, with 332 sketches and tracings of architectural decorations	8 0 0
Another, containing 140 very careful drawings, mostly coloured, of English mural decorations.	46 4 0
A volume, with 130 leaves, of drawings, tracings, and engravings, designs for borders, &c.	4 0 0
A Missal of fifteenth century, on vellum, with 18 miniatures, illuminated borders, and capitals	30 0 0
Holmwood Common (Birket Foster), water-colour drawing	12 10 0
A Scrap Book, containing about 3,000 book-plates, many by Cruikshank	1 11 6

There were some architectural and other books sold—as, Dalloway's Discourses on Architecture, Humphrey's Art of Illuminating, Shaw's Dresses and Decorations, Maitland's London, Christian's Skelton Church, Yorkshire, Tymms and Wyatt's Art of Illuminating, &c. All these works fetched a good price; but the great interest and value of the sale was in the numerous bound volumes of Mr. West's own architectural and other sketches, such as for their finished and varied character are rarely to be met with in an auction-room. There was also for sale a collection of Oriental and other porcelain, old carved oak furniture, &c.

Penny Wise and Pound Foolish.

The eminent auctioneers Messrs. Church & Rickwood, of Woolwich, have been appointed by the Guardians to prepare designs and superintend the erection of the New Woolwich Workhouse. It is supposed that the buildings, &c., will ultimately cost 40,000*l*. When will the guardians of the public funds learn that the persons whose business it is to sell buildings are not those to whom the erection of them can suitably be entrusted?

The Kirkdale Cave.

During the recent visit of the Rev. Canon Greenwell, of Durham, and other archaeologists to Yorkshire, it was determined that a scientific examination of the Kirkdale Cave should be made, with a view of determining if there was any trace of man having existed there contemporaneously with the extinct mammalia, whose bones, along with many of existing species, were found there in such numbers about half a century ago. The discovery of human remains in caves of a like class in Devon and elsewhere gave to the examination a peculiar interest. The floor of the cave is about 30 feet above the river Bran, and the entrance at the great discovery of 1821 was close to the stream; but it is now at a considerable distance, owing to extensive limestone quarrying, which has destroyed the best part of the cave—has, in fact, entirely removed that part which yielded the great bone-find. For several yards the cave is not larger than 2 feet high and 5 feet wide, many places being smaller, which rendered its exploration necessary on hands and knees—a matter of difficulty, considering that lights are necessary, and must be carried by each person. Eventually the cave opens to an extensive chamber, from which ramifications extend which are impracticable for examination by adults. Only in some two or three places was there hope of finding any relics, and these are left over to a dry season for excavation. The general opinion is, however, that no trace of primeval man will be found, the remaining part of the cave being so ill-adapted for habitation; and that if any traces of man ever were in the cave, they have disappeared with that portion, now destroyed, which yielded the bones

(split and marked) of the elephant, hippopotamus, tiger, hyena, &c., as described by Professor Buckland.

Stained Glass at Berlin.

The stained glass for the cathedral at Aix-la-Chapelle, now exhibiting at Berlin, is only a part of the whole design. The window is 86 feet high by 30 feet wide. To have exhibited the whole of this at one time would have been impossible without considerable cost. The present first instalment is only 16 feet high by the entire width (30 feet), and is the lower portion of the picture which is designed by Professor Teschner of Berlin. The subject is the Virgin Mary as Intercessor. She is supported on clouds surrounded by angels, whilst below there is a group of persons, partly allegorical, partly historical, representing amongst the latter class the Emperor Sigismund and his Consort the Empress Barbara (both crowned at Aix in 1414), Frederick I. of Hohenzollern and Elizabeth, and other patrons and dignitaries whose histories are more or less associated with Aix.

Point de Pyrénées.

In these days of isthmus-piercing a scheme is announced, not indeed for the first time, of circumventing the gulf of Gibraltar by cutting a ship canal from the Bay of Biscay to the Mediterranean. The work is estimated not to exceed the modest sum of 442 millions of francs, or seventeen and two-thirds millions sterling, and to require six years for its execution.

The only question, indeed, is the economical one, as the Garonne is navigable from Bordeaux to Toulouse, and the Canal du Midi connects Toulouse with the Gulf of Lyons. But the extension of works necessary to allow of the passage of ships would be considerable, as, indeed, is shown by the estimate. It cannot be expected that the project should be hailed by English shipowners with much enthusiasm. As a strategic measure it would be a noble French work. The sum named is nearly three times that asked for the St. Gothard Railway, namely 6,500,000*l*., which includes a tunnel 9½ miles in length.

The Saint Gothard Railway.

'Hannibal transibat Alpes summâ diligentia.'—Hannibal crossed the Alps on the top of a Diligence.—Napoleon did the same on horseback, but we of the second half of the nineteenth century look forward to reaching the sunny South by far more rapid means. The Mont Cenis Tunnel is but two-thirds completed, and already there is a second scheme for railway communication between Switzerland and Italy, namely, the proposed Saint Gothard line. It is supported by both Governments, and the Swiss Central and North-Eastern Companies have promised their active support. It is proposed to form one main and three branch lines; the main line from Goldau in Switzerland to Chiasso on the Italian side of the Alps, with the following stations: Goldau, Fluelen, Biasca, Bellinzona, Lugano, Chiasso. The total length of this main line will be 189 kilometres, or 117½ English miles, with an average gradient of 18.6 in every 1,000 feet. The branch lines will have a single line of rails only, and will be laid—a. from Bellinzona to Locarno; b. from Goldau via St. Adrian to Zug; and c. from Goldau via Immensee and Küssnacht to Lucerne. The length of these three lines will be 35½ miles, making a total of 153 miles. But the most formidable part of the scheme is the tunnel; and during the progress of this work, which, according to the report of the engineer—Signor Grattoni, one of the directors of the Mont Cenis Railway—will occupy from eight and a half to nine years, provisional steamboat communication will be provided on the Sea of the Four Cantons, between Lucerne and Fluelen; as also on the Lago Maggiore, between Locarno and Arona. The length of this tunnel through the St. Gothard is calculated at 14,900 metres, or 9 miles 450 yards, and will be perfectly straight, beginning at the village of Göschenau (canton Uri) and ending at Airola on the other side. The gradient will be 21½ feet in 11,000 feet, or 1 in 518 nearly; the greatest air-shaft will be at Andermatt, 993 feet high; and there will be no air-shaft at all for a distance of seven miles. The time now occupied in travelling from Fluelen to Biasca is twelve hours; the new line when completed will reduce the journey to less than four hours. The total cost is estimated at 156,000,000 francs, of which 26,000,000 are for the construction of the tunnel. The financial calculations as to probability of fair returns for this outlay are based upon an annual transit of 180,000 passengers and 270,000 tons of goods.

Aix-la-Chapelle.

A vexed question, which has puzzled our archaeologists here for the last four years, has now been settled by the declaration that it was a stupid hoax. In the course of some excavations made at the back of the Chapel of the Cross, which is a part of the 'Dom,' some old foundations were uncovered, in the debris of which a stone was found which seemed to point to this spot as the long-lost site of the tomb of the Emperor Charlemagne. The inscription was:—'In hoc sepulchro tumulata sunt ossa Caroli Magni;' but the material and the characters seemed suspicious, and a commission was appointed to enquire into its authenticity. It is now declared a forgery, and it is a 'public secret' that the foreman of the works buried the stone where it was found. As he was no Latin scholar, he certainly had an accomplice, and it is now generally believed to have been a hoax intended to mystify a certain learned archaeologist of the city. Such foolish jokes are reprehensible, to say the least. The cathedral here is undergoing a very extensive restoration, and no small aid has come from the Pope, who has sent a large quantity of marble for facing the piers and walls, and relaying the paving in the interior. The marble sent is from the almost inexhaustible store lately discovered on the banks of the Tiber.

Cologne.

The south portal of the Cathedral of Cologne is now adorned with statues executed by the cathedral sculptor, Christian Mohr. Of these there are altogether 107, thirty-eight of which are as large as life, and stand on carved supporting stones. Besides these figures there are eight groups in relief, illustrating the history of the Passion. The principal nave of the cathedral has also been embellished with statues from the chisel of the same artist.

## General.

**New Market for Marazion (Cornwall).**—Recognising the awkwardness of the site originally intended for this building, the Corporation of Marazion has determined to pull down some houses in its neighbourhood, and thus provide an open space for the new market.

It is proposed to erect a bridge over the Trent, at Gunthorpe, and steps have already been taken to acquire the necessary funds.

**Southsea Pier.**—The present extension will cost upwards of 1,000*l.*, and consists of a platform (similar to that now in use), constructed on 8-inch iron piles, with joists 15 inches in depth, 4 feet apart, and 3-inch planking laid over them. The extension will embrace an area of 1,300 square yards. New baths and assembly rooms are proposed, and designs are in course of preparation.

A Monument, consisting of a block of polished granite, is to be erected over the grave of Dr. Epps, in Kensal Green Cemetery.

**New Lighthouse.**—The foundation-stone of a new lighthouse has been erected on Souter Point, a headland on the Durham coast, between the Wear and Tyne. It is intended to prevent wrecks from occurring, if possible, on Whitburn Steel, of which there have been so many complaints within recent years.

**Llandrindod Wells.**—The contract for building the new church has been entrusted to Mr. Gough, of Bishop's Castle, and the works will be commenced forthwith. The design comprises nave, north and south aisles, chancel, organ-chamber, sacristy, tower and spire, and north and south entrance porches, and has been prepared by Thomas Nicholson, Esq., F.I.B.A., of Hereford, the diocesan architect, under whose superintendence the works will be carried out.

**Discoveries at Fimber.**—Sir Tatton Sykes is about to build a new church at Fimber. For this purpose the old building—which possessed a fine Norman doorway—has been razed, and upon the site the excavations for the walls of the new structure have been made. In so doing it was shown that the church just destroyed was not the original one, but that a larger and earlier one had existed there—probably of Saxon date. Upon the floor of this earlier church was a large accumulation of burnt matter, impregnated to an extraordinary extent with lead—in some places the molten lead having predominated in the *débris*. There is no record, but it would seem that the first building had been destroyed by fire. A very interesting geological feature has also occurred. The foundations are dug to the chalk, through the 'feather' edge of an outlier of the purple or second post-glacial clay, which at this elevation of four hundred feet has escaped the Wold denudation, and which same clay is one hundred feet thick at Filey Brig. There is also a curious archaeological feature. At the western end both churches have stood upon a British tumulus. At a depth of five feet below the level of the late tower, two urns, a 'food vessel,' and a 'drinking cup,' two feet apart, with a fine flint axe, a large flake knife, and various chips of flint, with bones of the ox and hog, but no human bones, were found. Running due south was a bench containing vast quantities of animal bones, particularly the teeth of the ox. In the tumulus were a bone pin, a very large tusk of the wild boar, and much charcoal. The local antiquaries, Messrs. Mortimer and Fimber, have added the relics to their valuable Wold collection.

The *Press* of the 12th inst. states that Baron Haussmann has tendered his resignation, which has been definitively accepted.

### ANSWER.

#### Book Asphalte for Roadways.

SIR,—In reply to the letter of 'A Subscriber' in your issue of the 12th inst., enquiring as to the process of laying down roadways, &c., as just finished in Threadneedle Street, and expressing the opinion that it may become very slippery after a short time, we have to state that the paving in question is composed of a pure Rock Asphalte, obtained from the mines in Switzerland belonging to our Company. This Asphalte is unmixed with anything else, but being baked in revolving cylinders, is reduced to a fine powder, and in that state, while still hot, is laid on the street and compressed with iron rammers or rollers. Immediately on cooling it becomes a solid rock, of the same consistency throughout, and of the appearance now presented in the street which is finished.

Your correspondent need be under no apprehension as to its becoming slippery. Owing to its elastic nature, horses have a firmer footing than on granite, and the experience of from fifteen to twenty years in Paris shows that fewer horses fall on roads prepared as this sample is, than on any other kind. The data on which this fact was ascertained refer to all kinds of weather and all possible varieties of traffic.

We shall be most happy to afford any one interested in improvements of street pavements all information in our power.

Yours respectfully,

150, Leadenhall Street, London,  
June 16.

CALLENDER & AMOS.

### FINE ARTS' COPYRIGHT ACT.

The following is a copy of the petition presented to the House of Lords from the Royal Institute of British Architects:—

TO THE RIGHT HONOURABLE THE LORDS SPIRITUAL AND TEMPORAL  
OF THE UNITED KINGDOM IN PARLIAMENT ASSEMBLED.

The humble Petition of the President and Council of the Royal Institute of British Architects

Sheweth,—That architects are liable to considerable injury in the piracy of their designs and inventions, and that other parties can and do copy and

appropriate to themselves such original ideas without any benefit or remuneration to the authors.

That it is, therefore, desirable to afford protection to architects for the copyright of their works, by including works of architectural art under the definition of works of fine art in the Fine Arts' Copyright Consolidation and Amendment Bill.

That such copyright should extend to their executed works or designs.

That the copyright of an architect in any work executed, or in a work proposed to be executed, should not pass to the employer except under special agreement, but remain with the architect; and that the design in the drawings and specifications prepared for the purpose should still remain so far the property of the architect.

That copyright of architects' productions should extend to the same period as to authors of other works of fine art.

Your petitioners, therefore, most humbly pray your Lordships, that in the Bill introduced in your Lordships' House for consolidating and amending the law of copyright in works of fine art, provision to the above effect be made for the protection of architects in a manner similar to that for authors and inventors.

And your petitioners will ever pray.

### MEETINGS OF TECHNICAL AND LEARNED SOCIETIES.

**THE ARCHITECTURAL ASSOCIATION.**—On June 26, at half-past 7 P.M., a paper on 'The Art Treatment of Iron' will be read by Mr. Lacy W. Ridge, V.P., A.R.I.B.A.

**CIVIL AND MECHANICAL ENGINEERS' SOCIETY.**—The Annual General Meeting of the Society will be held at the Whittington Club, on Wednesday next, June 23, at 8 P.M. precisely.

### APPOINTMENTS VACANT.

**INDIA.**—July.—Forty Appointments in the Engineer Establishment of the Public Works Department in India will shortly be open to public competition. W. T. Thornton, Secretary, Public Works Department.

**ISLE OF ELY.**—July 5.—A Resident Surveyor, Inspector of Nuisances, Superintendent of Highways, and Collector of the Rates for the District of the March Local Board of Health. Mr. T. T. Elliott, Clerk, March, Isle of Ely.

**KENDAL.**—Borough Treasurer to the Corporation of Kendal, Westmorland. Salary 50*l.* per annum. Mr. Thomas Harrison, Town Clerk, Kendal.

**POSTS.**—As Assistant or Resident Engineer, to Superintend Works of Pipeage, Masonry, and Pumping Machinery. A knowledge of the German language desirable. Salary, from 400*l.* to 600*l.* per annum. W. Lindley, Engineer-in-Chief, Post.

### COMPETITIONS OPEN.

**ARRAS, FRANCE.**—Architects are invited to send in designs for a Church to be erected at Arras. The building is to be 40 metres long, without the clock-tower, and 18 metres wide, and it is to have three aisles, three entrances, to be approached by a flight of five steps, and to be surrounded entirely by railings 1½ metre high; sub-basement of Belgian stone. The plans are to include a general one of the entire building, a fully-detailed description, and a careful estimate, with such perspective views and details as the artist may think fit to add to the former. The style of the building is required to be 'Decorated Roman of the last period'; and the sum to be expended, including commission, is 80,000 francs (3,900*l.*). The authorities do not undertake to adopt the prize plans, in which case the author of the best and second-best designs will receive 600 francs and 300 francs respectively. It is added, that the columns are to be of hard Belgian stone, and the rest of the building of Creil stone; the vaultings are to be real, and not in ceiling, or of wood with visible ties. The jury is composed of the Bishop of Arras, the Maire, a Canon, two members of the Municipal Council, an Engineer, the Secretary-General of the Museum, and the Vice-President of the Council of the Prefecture. The designs are to be sent by the end of July.

**BELGIUM ACADEMY OF ARTS AND SCIENCES.**—For best enquiry (essay) and report on the period at which Architecture in the Low Countries became affected by Italian influence. Premium, 1,000 francs, about 40*l.*

**BRADFORD.**—September 1.—Competitive Designs for the new Bradford Town Hall. To the Architect whose design is selected, 5 per cent. commission and the execution of the work; 2nd best, 200*l.* premium; 3rd, 100*l.* Mr. W. T. McGowan, Town Clerk, Corporation Offices, Bradford.

**BRUSSELS, BELGIUM.**—A competition is announced for the production of the best Water Meter. The inventor of the instrument offering the greatest advantages is to receive a reward of 300*l.*; the 2nd best, 120*l.*; and the 3rd, 80*l.* The Meters are to be sent in to the Secrétaire de l'Administration Communale, Hôtel de Ville, Bruxelles, before 12 o'clock on October 31 in the present year.

**CONSTANTINE, ALGERIA.**—Three prizes, of the value of 3,000, 2,000, and 1,000 francs, are offered for the best designs for a theatre to be built at Constantine. Programmes of conditions, accompanied by a sketch, may be obtained either at Constantine, at the office of the Société Générale Algérienne, No. 13 Rue Neuve-des-Capucines, Paris, at the Prefecture of Lyons, or the Mairies of Marseilles, Bordeaux, or Orlans.

**DONCASTER.**—September 1.—The Building Committee for proposed new Wesleyan Chapel and Schools at Doncaster require Designs. The best to receive 50*l.* premium; second best, 25*l.* Mr. R. Wiltons, Sec., Magdalens, Doncaster.

**GLAMORGAN.**—July 1.—Plans and Specifications for Restoration of Parish Church of Llantrisant. Rev. J. Powell Jones, Llantrisant Vicarage, Pontypridd.

**LEYDEN MUNICIPALITY** invites Designs and Models from Sculptors of all countries for a Statue of Boerhaave, in the costume of Professor of Leyden University. September 1.

**LONDON.**—June 26.—London and County Land and Building Company (Limited).—Plans of the best and most profitable way in which to arrange in building sites their ground in Camomile Street, City. First premium, 75*l.*; second, 50*l.*; third, 25*l.* Mr. R. B. Looker, 14 Clement's Lane, E.C.

**PHILADELPHIA, PENNSYLVANIA, U. S.**—September 1.—For Designs, Specifications, and Estimates for New Public Buildings. First premium, 400*l.*; second, 300*l.*; third, 200*l.*; fourth, 100*l.* For particulars, to H. C. Pugh, Secretary of Board of Commissioners, S.W., corner of Walnut and Fifth Streets, Philadelphia.

**PLYMOUTH, DEVON.**—For Designs for New Guildhall, Law Courts, Public Offices, &c. Premiums 100*l.*, 75*l.*, and 50*l.* July 14. Whitford, Town Clerk, Plymouth.

**ROYAL ACADEMY OF ARTS.**—Burlington House. For the best Painting in Oil, or Model and Design in Painting, Sculpture, and Architecture, the Gold Medal and the Discourses of Presidents Reynolds, West, &c.; and for the best Copies of Drawings, &c., the Silver Medals, &c.

**SAINT JEAN D'ANGELY, FRANCE.**—The authorities of St. Jean d'Angely have decided on completing the Church commenced in the town by the Benedictines, but of which the works were stopped in 1789. Estimate 200,000 francs (8,000*l.*); the architect's honorarium to be equal to 4 per cent. The competition is confined to architects of Charente and the four adjoining Departments.

**SALISBURY.**—July 1.—Salisbury Municipal Charities.—The Building Committee are desirous of receiving Designs for Rebuilding Almshouses, for six aged Married Couples, and a Nurse or Matron. 10*l.* for the selected design. Mr. T. Harding, Canal, Salisbury.

**VIENNA, AUSTRIA.**—This Municipality require Designs, Plans, Estimates, &c., for the Erection of a New Town Hall. Open to all Europe. For Particulars, Austrian Consul-General, Paris.

**WESTBROMWICH.**—For Designs, &c., for a complete School Establishment for accommodating 400 children. Premiums: 1st and best Design, 50*l.*; 2nd, 30*l.*; third, 20*l.* Mr. H. Ward, Lombard Street, Westbromwich.



# The Architect.

## TO OUR READERS.



WITH the present number we reach the completion of the first half-yearly volume of THE ARCHITECT. The Title-page and Index belonging to it will be issued with our next number, the first of our second volume.\* We feel it impossible to make this announcement without at the same time gratefully acknowledging in few words the kind and generous support we have

experienced from the public, and the favourable reception which has attended our efforts. Our subscribers, our many and able contributors, artists, and correspondents, are entitled to special recognition for their valued co-operation and constancy.

It is not for us to pretend to judge how far we have succeeded in redeeming the pledges we gave on commencing this undertaking. In spite of some of the difficulties which beset every new work, we cannot but think that the continued support we have received proves that the public are satisfied with what has been done; and when we glance over our work during the past half-year, we feel that it has not been altogether unworthy of the approval which has been accorded it.

Our Illustrations have extended over a large variety of subjects, in Architecture, Art, and Civil Engineering. These subjects have claimed notice on account either of their importance, or their beauty as works of art, or both; and the execution of them, which we have made great efforts to render excellent, appears to us, in the majority of cases, to reflect very great credit upon the artists who have undertaken them. To this branch of our work constant attention will continue to be paid; important illustrations of various kinds are now in hand, and the standard reached is intended to be maintained.

The Literary portion of the Journal has been enriched by the contributions of many skilled writers. The signed articles, of which a large number have appeared, bear names most of them too well known to the public to need any commendation from us; and have enabled us on several occasions to place before our readers the independent opinions of writers deserving great consideration, and preferring to take upon themselves the entire responsibility of the views they express. Our other original articles have touched upon all the most salient topics of the day as they arose, and upon many matters of permanent importance. We have given considerable prominence to Public Works, and it is not without satisfaction that we refer to the series of articles and illustrations which have appeared in these columns relative to the Site for the New Law Courts and the Thames Embankment generally—articles which, as we have reason to know, have not been without effect on the public mind and in important quarters.

The large field open before us, from Construction on the one hand to High Art on the other, cannot ever be exhausted; but an effort has been made to occupy it in various directions. Some of the art papers contributed by Mr. Burges and others demand especial mention, as indicating the class of writing on art which we hope from time to time to secure. Our Reviews of Books have been numerous, and in each case, it is hoped, full enough to do fair justice to the subjects without exhausting the patience of the readers.

The series of original and picturesque descriptions of buildings, public works, and other kindred subjects which we have commenced under the head of 'Our Rambler,' and our Letters from Abroad, have included many papers which may, we hope, be of permanent value, alike from their literary character and the importance of their topics.

On purely practical subjects the Series of papers on House Building, and the papers on Contracts, with the correspondence they elicited; our articles on the Education of Architects, our Notes on Novelties of Construction and Contrivance, and many detached papers, show that attention has not been diverted from the wants of the practising Architect, Engineer, Surveyor, and Builder; and this has been also attested by the numerous letters on points of practical value which have appeared in our Correspondence columns.

The intelligence we have given has included both general Home

\* It should be remembered that the double plates are not to be stitched in the middle. They should either be pasted on to guards, or stitched at one edge and folded.

news and much Continental information. The proceedings of Parliament, and cases in the Courts of Law bearing on building matters, have been fully reported; and if we have given less full reports of professional and technical Societies, it has been because we have known that they are easily to be met with elsewhere, and have felt that if we retain the Journal within its present compact and readable limits of size, our readers will thank us more for supplying them with original papers and intelligence.

The lists of Competitions and Contracts Open which we have been able to furnish have been most extensive, and have included a very large proportion of Continental Works, thus giving to energetic contractors and others who are willing to engage in Continental work unusual facilities for ascertaining what is being done.

In the volume which is about to be commenced the same excellent typography and illustrations of merit equal to those of the present volume will be given; and as on our part no endeavour will be spared to keep up and increase the efficiency of the Journal, we hope that our readers will continue to find increasing pleasure and benefit from the perusal of it.

## A VOICE OF WARNING FROM FATHER THAMES.

UNMUSICAL and ill-omened growls are borne by the east wind up the Thames. It is not the first time that we have heard them. The ungenial temperature of the month is not the cause of the phenomenon. On the contrary, if the weather prophet of 'the Times,' who has been so remorselessly demolished by the uncompliant season, had been correct in his vaticinations, the ugly sounds might have been more imperatively audible. As it is, however, the portents of a storm have been sufficiently serious to induce the Home Secretary to send our respected contributor, Mr. Rawlinson, to inquire into the cause of the disturbance.

We referred, in THE ARCHITECT for March 18, to a flying and festive visit paid by certain persons, whom the Metropolitan Board of Works delighted to honour, to the Abbey Mills Pumping Station. It seems that more might have been learned by the visitors than they actually were invited to admire. Pumping is good, and drainage is good, but what becomes of the matter pumped and drained? London is, for the time at all events, relieved of a great source of evil. But the ugly question turns up—Have we removed our great midden heap far enough from our street door? Have we dealt with the most important question that can affect the habitability of the Metropolis in a thoroughly efficient manner? Have we gained, with all our enormous expenditure, more than a temporary respite from the great mischief of neglected sewage?

Our friends at Barking say that we have inflicted a nuisance on the portion of the Thames between Crossness and Barking Creek which is not only pestilential to the vicinity, but which will, in course of time, re-poison the waters of Thames so far as the tidal flow reaches. Without wishing to earn the character of alarmists, we must say that it is not easy to exaggerate the importance of this question; and while definite scientific information may be expected from the reports of the examining engineer, there are yet some facts, patent to every one, which are enough to show that the matter is not one to be neglected.

According to very moderate calculations, which will be disputed by no student of the subject, the sewage matter which is the direct product of the human chemistry of London amounts to about one million three hundred thousand tons per annum. This is without any allowance for the sewage incidental to animal life. It takes no notice of the results of any detergent process—of refuse of any description—of soot, of dust, of mud, of dilapidated and disintegrated stucco, mortar, or other building materials, of soap suds, of kitchen impurities, or even of the rainfall and artificial water supply. In a word, it is fecal matter alone and undiluted. If we consider that a tenth of this matter is solid, we shall most likely be within the mark; so that when the sewage of London is now, or will shortly be, all turned into the Thames, at least a hundred and thirty thousand tons of concentrated solid poison will have to be in some way dealt with by the stream within the course of the year. That this matter is already in a highly diluted state when it is mingled with the tidal waters of the Thames may, we should think, rather aggravate than diminish the evil. The effect of rainfall and water supply will be to ensure a more thorough incorporation of the objectionable matter with the water of the Thames.

Poison, we have said, to this definite and large amount, is thus constantly mingled with the Thames. It is only needful to add the

remark, that our merchant navy is employed, as regards a considerable amount of its tonnage, in importing from the Chincha Islands chemical elements identical with those which are now forming black and fetid mud in our great ocean highway. In accordance with the wonderful economy of organic life, that which is death to the members of the animal, is food for those of the vegetable kingdom. That which causes cholera, fever, or other forms of pestilence, if mingled, even in infinitesimal proportions, with the potable water of our wells and springs, not only becomes innocuous when filtered through the soil, but forms the wealth of the industrious farmer, and clothes the face of the country with verdure and with grain.

We have no intention of anticipating the statements or the recommendations of the Report. We wish only to bring before the attention of our readers unquestionable facts. The statistics we have cited are of the simplest description. They afford a sort of standpoint from which to regard the inferior limit of the question; but it is a standpoint much lower than that which would be assumed by any person who would take the trouble to multiply the disagreeable results of his own household economy by the number of households in London. From the harsh logic of the facts there is no escape. Neither, it seems to us, could a careful investigation of the subject have any other results than the conviction that, sooner or later, a great source of national wealth shall be applied to its proper and beneficent object, instead of being suffered to pollute the Thames, and to prepare future pestilence for some, if not for all, the inhabitants of the banks of the river within the reach of the tidal flow.

It has been with pride, as well as with pleasure, that we have called the attention of our readers, in the columns occupied by the descriptions of 'Our Rambler,' to the noble promise of the Thames. We have led them along the northern and southern quay walls, where the white granite of the parapets sparkles in the sun, but where the curved batter of the face of the wall between the high and the low water level is coated with a greenish slime which is unwelcome on such fresh masonry. We have spoken of the bridges which span the flow, and of the noble hospital in which the art of healing is to be raised into a beneficent apogee. We have, above all, striven to give to the future Palace of Justice the advantage of a river-side site.

Each of these expressions of admiration or of hope, however, takes one thing for granted. Thames is to be again a river—not a sewer. Those who are accustomed to make use of the most ancient highway from the City to Westminster are aware of the great improvement which took place some time ago in the state of the stream. They rejoiced to sniff, on the incoming tide, the veritable odour of the brine. But they cannot think that 1869 sees much, if any, improvement in this respect over 1868. The improvement was definite and most welcome; it is not progressive. A very much more pure and limpid stream would now flow through London, if no diluted sewage were borne up by the tide. And this is a matter in which, where the course of improvement is arrested, that of deterioration begins. We must repeat that there is no question concerning the architectural beauty, the habitable salubrity, or the future eminence of our great metropolis, that assumes more imposing dimensions, or calls more urgently for solution, than that of the purity of the Thames.

## THE NEW LAW COURTS.

### THE SOLICITORS.

A DEPUTATION, introduced by Lord Bury, M.P., from some of the principal legal firms of the City and West End of London, had an interview on Friday, the 18th instant, with the Chancellor of the Exchequer (Mr. Layard, M.P., the First Commissioner of Works, being present), to express their views in favour of the Thames Embankment as the site for the erection of the New Law Courts.

Lord BURY, in introducing the deputation, said the names of the gentlemen composing it, who were of all shades of political opinion, would show that the present was no party movement, or representation of party or personal interest. This deputation was called forth by the feeling of a large number of members of the legal profession, in reference to a deputation which had waited upon the Chancellor of the Exchequer a few days previously, purporting to be introduced under the auspices of the Law Institution and to represent the solicitors of London, but which in truth did not represent either the one or the other, but was convened by the Council of the Law Institution without the sanction of the members of that society.—Mr. ROBERT BAXTER (Baxter, Rose, and Norton) concurred in Lord Bury's remarks, and referred to a petition which had been laid before Parliament in favour of the Thames Embankment site. This petition was signed within a few days by upwards of 7,000 persons, of whom over 500 were practising lawyers, and about 550 lawyers' clerks and persons of that description, while 1,663 were gentlemen of note, among

whom might be named the Duke of Buccleuch, High Steward of Westminster, the Dean of Westminster, Sir John Lefevre, and others. He supported the Thames Embankment site solely on the ground that it was the most convenient to the great mass of persons frequenting courts of law.—Mr. VALLANCE (Vallance and Vallance) said that, so far as his firm were personally concerned, the Government plan would be most injurious, as it would turn them out of their offices; but he considered that in a question of this kind the public interests were paramount, and that too much weight had been accorded the private claims of individual members of the profession. No doubt, members of both branches of the profession were in the habit of resorting to the Chancery Courts at Lincoln's Inn, but they were no less in the habit of resorting to the Courts at Westminster and the Bankruptcy and other Courts in the City, and to these places also the general public were called to a much larger extent than to Lincoln's Inn. In the latter place the business was of a special and limited character, and the practitioners represented a class only; but it ought to be observed that the public were to the lawyers in the proportion of hundreds to units. To them the Thames Embankment site, from its more commodious access, was very preferable, and he trusted that their interests would be considered rather than the personal or pecuniary interests of those who constituted the opposition.—Mr. FRESHFIELD said he also represented the firms of Dawes and Sons, Cotterill and Sons, and Roy and Cartwright. He spoke in the interest of the City solicitors, and considered that he represented them. To these classes the access to the Carey Street site, along Ludgate Hill, would be in the highest degree inconvenient. On the other hand, the access along the Thames Embankment would be admirable.—Mr. ELLIS (Ellis and Ellis) said: Both the other Inns of Court were in favour of the Thames Embankment site, and so were the bulk of solicitors residing away from the precincts of Lincoln's Inn.—Mr. S. B. ROBERTSON stated that he also was authorised to represent Mr. Boodle, who was unable to attend through illness, but had addressed a letter to the Council of the Law Institution, denouncing in strong terms their conduct in assuming to represent the general body of that society. It should be observed that the Law Society comprised not more than one-fifth of the solicitors on the roll, so that even if the Council did represent their views, it would not count as that of a majority of the profession.

Mr. LAYARD said that the Government, in selecting the most appropriate site for the courts and offices of law, had been influenced mainly by the consideration so well referred to by Mr. Dudley Baxter—namely, to place them in a position to give most perfect fairness to all interested persons, and the utmost possible degree of convenience to the public at large. The Government had no preference for one site over another; they were influenced by no æsthetic considerations, as had been ridiculously urged against them. Such considerations were not altogether unimportant: but the primary questions upon which their opinion had been formed were, first, the convenience of access for all parties; secondly, the cost, which was by no means unimportant. After these came the question of beauty of design, which was not to be overlooked. Now, in reference to the question of cost, the Government had taken the very best opinions they could get from the persons most qualified to give them, and they had come to the conclusion that the construction of the courts and offices of law on the Carey Street site would involve a cost of not less than 1,000,000*l.* in excess of that resulting from the adoption of the Government site. In making this estimate he was admitting, for the purpose of argument, that the cost of the buildings would be the same, setting off the alleged excess of expense for foundations in Howard Street, which he thought would prove to be necessary, against the larger area on the Carey Street site, about which there was no question. He would, however, put the cost of construction in each case at 1,000,000*l.* Again, in respect of site, he would assume the cost to be about equal, setting the 900,000*l.* for the Carey Street site against the 600,000*l.* for the Howard Street site, but allowing the difference for assumed loss on resale, a loss which he did not believe would actually be incurred. But the real consideration in reference to cost, was that of approaches. No one who had looked at the Carey Street site would think that the public requirements would ever be satisfied by the existing state of the access. It was surrounded by a low neighbourhood, with narrow streets, through which the public would not long endure to have to pass. It would inevitably result that, before long, an additional sum of 500,000*l.* at least would be needed to clear away approaches, if it were only to get a suitable access for the Judges. But even this would not suffice to place the site in a state that would satisfy the public wants, and he believed that not less than two or three millions at least would have to be absorbed in making the site suitable to the business transacted upon it. At present the only access would be from the Strand, which was now overcrowded, and would then be so completely blocked, that a demand would be made for a new street along Carey Street, so as to make that available for traffic. This, besides the increase of expense, would have the effect of surrounding the Courts with the noisiest thoroughfares in London, and that on two sides. On the Embankment site the case was just the reverse. Excepting Essex Street, no part of that site would be a thoroughfare for traffic. The Embankment was not, in the nature of things, likely to be a noisy thoroughfare, and Howard Street would not be used for traffic at all; while the architect had so utilised the site as to place the offices by Essex Street and the Courts of Justice far away

in a most quiet situation—an advantage which practitioners in the Courts would best realise. Then there was the consideration of ventilation at Carey Street. This was necessarily bad on account of the low surroundings, and for that reason could not be made good, whereas on the Thames Embankment there would be the very best supply of light and air that London could afford, and it would also be surrounded by water and gardens and other objects of attraction, which, it had been well remarked, were matters of importance in regard to the health and convenience of suitors at the Courts. On all these grounds the Government were of opinion that they must not give undue weight to the alleged convenience or inconvenience resulting to practitioners at Lincoln's Inn. The interest of the public at large was paramount to this, and he was bound to say that, after giving the subject his almost incessant attention for several months, he had come to the conclusion that the Thames Embankment site was incomparably the best. But there was another consideration which, though it had been much used as an argument on the other side, seemed to him strongly in favour of the Government plan. No one could fail to notice the migration which had occurred within comparatively few years on the part of the Judges and principal legal practitioners from the old legal quarters in Bedford Square and thereabouts to the more immediate centres of their business. Now, the Carey Street site was already cleared and ready for the reception of a similar migration, and he did not doubt that the adoption of the Thames Embankment site, coupled with the fact of this space being left available for legal purposes, would facilitate a similar migration in the direction of this quarter, which could not but be of much benefit to the public at large.

The CHANCELLOR of the EXCHEQUER felt sure that all impartial persons would approve the Government plan, notwithstanding the great weight of influence which had been brought against it.

The deputation then withdrew.

### THE ÆDILESHIP OF LONDON.

LORD ELCHO'S Committee has presented its preliminary report without one word upon the most important part of the subject submitted to it. The Thames Embankment is a matter of less weight than the permanent control of the Public Works of the Metropolis. The Society of Arts is almost the only public body which has attempted to influence Parliament in favour of a much-needed change in our practice in this respect. Amongst a people of our social habits the most successful reforms are those which consist in the timely supply of some pressing want, that at last appears to be intolerable. Such is the case in the present instance.

The committee appointed by the Society of Arts to investigate the subject report, in effect, that there was imminent danger of our losing the advantage of one of the finest public works in Europe, from the simple fact that there exists no machinery for its due protection. With reference to the architectural character of the building that will crown the Thames Embankment, there exists either no jurisdiction at all, or divided and inconsistent jurisdiction. The rights of the officers of the Corporation of the City of London march with those of the Board of Works somewhere opposite to the Temple. Neither functionaries appear to have any authority enabling them to repress the exercise of the great English privilege of freedom of public bad taste. Whether a graceful and appropriate façade shall form a noble frontage to the purified stream, or whether gas works, iron warehouses, or portentous, heaven-defying, shareholder-scouring, waggon-headed roofs, shall be allowed to dwarf every picturesque feature under the shadows of their monstrous extinguishers, no one seems to have any right to inquire. The Society of Arts, then, deserves the thanks of all men of taste for bringing the subject prominently and practically forward before it is too late.

We have had two great struggles already as to the ornamental utilisation of the Thames Embankment. We have, we hope and believe, escaped the erection, at a large cost, of a useless, hideous, and uncalled-for viaduct; but it has been a narrow escape, if, indeed, we are yet safe. Then, when we asked for appropriate architecture to rise on a neighbouring portion of this most noble site, we were offered a *réchauffé* of an unbuilt palace—Inigo Jones *à la Loue*—in the economic adaptation of grandiose design to unfit ends. Men who thought little, and cared less, for matters of taste, have been forced to see that there is such a thing as an architectural question; and the demand for the State appointment of some one who should be responsible for the disfigurement of London, comes now in due time, and with irresistible force.

We are alone among civilised nations in our neglect of public decency in architecture. In no great capital can rampant barbarism flourish as it does with ourselves. How long would Leicester Square be allowed to disgrace Paris? We are no advocates for what has been neatly termed *Hausmanno-mania*, but we question whether even the tyranny of the Prefect of the Seine is not more endurable than the tyranny of the universal freedom of bad taste.

We need not be above enquiring as to the mode in which other civilised nations act in similar cases. Everywhere out of England we find that some sort of control is exercised, by the government of the country, to prevent the disfigurement of the capital or the desecration of national monuments. The destruction of Druidic remains, such as not unfrequently occurs in England, would be as impossible in Continental countries as it ought to be rendered in our own. The number of Ministers, or of principal divisions of the business of government, is, under one cause or another, almost identical in all nations of the first political rank, including the United Kingdom. Nowhere does there exist such a person as a Minister of Art or of Architecture. But nowhere, out of England, does there fail to be a department of one of the principal ministers devoted to the control or the culture of the arts. Differently distributed in different kingdoms, in

each Continental State one or more divisions or departments of some principal secretariat is thus allotted. In France, the tenth ministry includes the two departments of the 'Maison de l'Empereur' and of the 'Beaux-Arts.' In Bavaria there is a 'direction centrale pour les Arts, les Sciences, et l'Instruction.' Generally speaking the subject of art superintendence ranks as part of the attributes of the Minister of Public Instruction, an officer whose increasingly important duties may be said, like so many others, to be 'in commission' in our own country.

The result of the Continental experience appears to us to point to a course eminently suitable to the temper of our institutions. With us the chief minister of each department, Secretary of State, or whatever we may call him, is a political personage. He is liable to displacement from motives entirely foreign to the question of his personal fitness for the duties of his post. But government would become impracticable were this rule to apply to the real execution of the details of business. We have, therefore, permanent under-secretaries and heads of departments, who are vexed by no adverse divisions, and who carry on the business of the nation; under general parliamentary check, no doubt, but affected by casual and fleeting majorities.

The exigencies of art, therefore, in England are in harmony with those of our political habits. The Ædile of London, or whatever name may be given to the new and much-needed officer, should not be a political character. He will, when we are so fortunate as to get him, probably not be a Secretary of State or a minister of the first rank. But, as the permanent head of a department which requires to be consolidated rather than created, he will be clothed with that power, and hedged in by that responsibility, that will become an officer invested with such important functions. The Council will not be an *ad hoc* gathering of amateurs. The new functionary should not be obliged, on any new occasion, to summon academicians or artists to his council, as country magistrates have to learn the law from their clerks. His own character and standing must be such as to command respect. From the heads of his divisional departments—if they be the right men in the right places—he will receive that full information, on matters of fact as well as on canons of taste, without which no one can satisfactorily act. No tittle of the present public right to grumble, to criticise, and to complain, will be invaded. But there will be a distinct focus on which all this public spirit, now misdirected and wasted, will be taught to converge. Actual abominations will be rendered, we fondly hope, impossible. Any Ædile, for example, who had sanctioned the erection of the Peel statue in Palace Yard (which has now been recast into a statue of Palmerston) would have been unable to retain his position against the tempest of public ridicule. Every assurance that our institutions demand, or will allow, could be given to the nation that the power of such an officer would not be abused. That some such fountain, or centre, of administrative power, is a crying want, and that we are in daily danger, so long as such an appointment is deferred, of damage to the beauty, the convenience, and even the health of London, cannot, we think, be candidly denied. The Society of Arts have taken a practical step towards the settlement of this important question. We trust our own humble but earnest remarks may find the same distinct echo within the walls of Parliament that we have been gratified with observing on more than one former occasion, even during the brief space during which we have ventured to claim attention for views proper to THE ARCHITECT.

The text of the petition of the Society of Arts is as follows:—

'That your petitioners have lately appointed a Committee to report on the best way of dealing with the Thames Embankment, so that the opportunity may not be lost of making this noble site conducive to the embellishment and improvement of the metropolis.

'That such Committee consists of the following persons:—Lord Henry G. Lennox, M.P.; Lord De L'Isle and Dudley; Right Hon. W. Cowper, M.P.; Lord Elcho, M.P.; Baron Meyer de Rothschild; the Hon. Auberon Herbert; A. B. Beresford Hope, Esq., M.P.; William Boxall, Esq., R.A.; Sir William Bodkin, Assistant-Judge; Hyde Clarke, Esq.; A. Baillie Cochrane, Esq.; Henry Cole, Esq., C.B.; Lieut.-Col. E. F. Ducane; C. W. Dilke, Esq., M.P.; W. R. Drake, Esq., F.S.A.; Lieut.-Col. Ewart, R.E.; Edwin W. Field, Esq.; Alderman Sir T. Gabriel; W. H. Gregory, Esq., M.P.; Earl Grosvenor, M.P.; C. F. Hayward, Esq.; W. Haywood, Esq.; John Locke, Esq., M.P.; Right Hon. Lord John Manners, M.P.; J. E. Millais, Esq., R.A.; S. Redgrave, Esq.; Lieut.-Col. Scott, R.E.; G. E. Street, Esq., A.R.A.; Seymour Toulon, Esq.; Sir Charles Trevelyan, K.C.B.; Richard Westmacott, Esq., R.A.; Rev. Henry White; Joseph Whitworth, Esq., LL.D.; Watkyn Williams, Esq., M.P.

'That, during the course of the proceedings of this Committee, it became their duty to inquire whether any and what controlling power over public works in the metropolis of this country is vested in, or exercised by, any public department.

'That it appears, from the proceedings of this Committee, that no such effective controlling power exists, and that the mode of dealing with the Thames Embankment, upon which the improvement of London essentially depends, has been left to the accident of the varying personal interests and tastes of the different owners of property on the Embankment.

'That, so far as any control whatever exists over the works of the Thames Embankment, it is subject to the divided jurisdiction of the Corporation of the City on the east of the Temple, and the Metropolitan Board of Works on the west.

'That such control is entirely confined to the conduct of works already authorised to be constructed, and is wholly ineffectual for securing the proper appropriation of public sites for the health, accommodation, and embellishment of the metropolis.

'That such Committee is strongly of opinion that it should form part of the duty of a responsible Minister to exercise a controlling power, within necessary limits, over all operations bearing upon public works in which the convenience and embellishment of the metropolis are concerned.

'That your petitioners entirely agree in the opinion of their Committee, and humbly pray your Honourable House to take such steps as may secure such responsible control as to your Honourable House may seem fit.

'And your petitioners will ever pray, &c.'



THE LAW AND SCIENCE OF ANCIENT LIGHTS.

By HOMERESHAM COX, M.A., BARRISTER-AT-LAW.

(Continued from p. 319.)

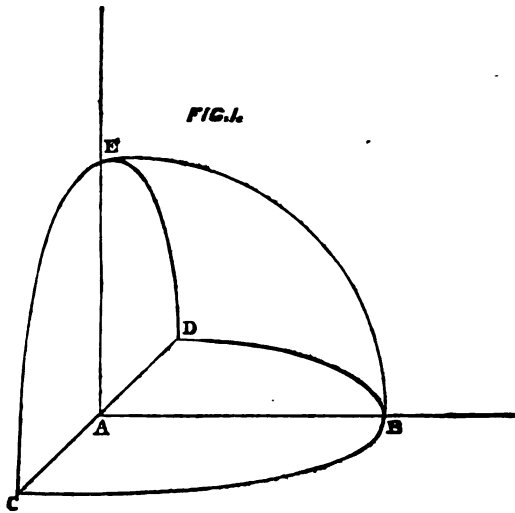
PART II.\*

Optical Principles.

ACCORDING to the rules just laid down, Courts of Justice, in estimating the injury to ancient lights, consider the obstruction—not of direct solar rays, but of the general light of the sky. For the purposes of calculation it is ordinarily assumed that the sky is uniformly illuminated; and that hypothesis will be here adopted. It is obviously the most convenient assumption; it is also that which alone can be the basis of general rules. By supposing the illumination to be uniform, and neglecting the variations due to the position of the sun or clouds, we get a fair average result. The general problem to be solved may therefore be thus stated—assuming the sky to be a hemisphere equally illuminated in all parts, how much of its light will enter an aperture of given dimensions, and in a given situation?

First, for the sake of simplicity, suppose that the aperture is a skylight or opening in the horizontal roof of a building with no obstructions above its own level. For a reason which will appear hereafter, we will also suppose that the opening is unglazed. In this case every point of it may be considered as the centre of an imaginary hemisphere of light of any arbitrary radius.

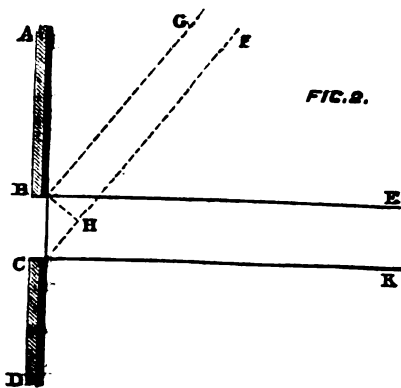
Next, consider the case of an unglazed aperture in a vertical wall erected on a horizontal plane—such a case as that of windows on the level of the sea and directly facing it. In this instance each point of the aperture may be considered to be the centre, not of a hemisphere, but of a quarter of a sphere of light. Let A, Fig. 1, be such a centre. It will obviously receive the light from a portion of the sky bounded by C M D the vertical plane of the wall, and A C D the horizontal plane.



SECTION V.—Effect of Oblique Rays.

We have next to consider the effect of the obliquity of all the rays except those which are perpendicular to the plane of the aperture. We suppose all parts of the sky to emit equally intense rays, but it is manifest that those which are most direct have the most power. Those which are very oblique produce very little effect.

It is essential to the investigation that this diminution of effect should be measured accurately. At first we will suppose, for the sake of simplicity, that the aperture is not a large window, but is of indefinitely small dimensions. In Fig. 2, A B C D represents the section of a vertical wall with a



small aperture C B, and G H K represents a beam of light composed of rays

\* Addendum to Part I.—In the case of *Malby v. Ware*, heard June 19, 1869, the defence was that the plaintiff had acquiesced in the erection of the wall which obscured his windows, and that his loss of light in one place was compensated by gain in another. The Master of the Rolls said that this species of compensation, though commonly alleged in such cases, was not a valid ground of defence, and he decreed that the wall should be reduced to its original height. He suggested, however, that the plaintiff should waive his strict right to the decree, and consent to a pecuniary compensation to be determined by the court. His Lordship was of opinion that this course could not be taken without the plaintiff's consent.

perpendicular to the plane of this aperture. The breadth of this beam is C B; but the breadth of a beam F G H inclined at an angle A B C or A C F is not C B, but a less quantity, B H. By trigonometry, since B H is perpendicular to C H,

$$B H = B C \sin. B C H.$$

In other words, the breadth of the beam (and therefore its optical effect) is diminished in proportion to the sine of the angle at which the rays are inclined to the aperture. When the angle is small, its sine is small, and the optical effect is therefore insignificant. It will be easily seen from this that the value of what is called 'sky-area' rapidly diminishes as the rays become more and more oblique, and that rays near the zenith produce but little illumination of a vertical window.

(To be continued.)

MEMORIAL TO FARADAY.

ON the 21st instant a public meeting was held in the theatre of the Royal Institution, Albemarle Street, for the purpose of considering what measures shall be taken for the promotion of a memorial to Professor Faraday, whose voice was so often heard as a lecturer within those very walls. The chair was taken by his Royal Highness the Prince of Wales, who in a few well-chosen words expressed the pleasure which it gave him, both on public and on private grounds, to preside over such a meeting as the present, and reminded his hearers that, although he whom they had met together to commemorate had been dead for nearly two years, yet nothing had been done by the public to perpetuate his memory.

The first resolution, 'That it is desirable that measures should be taken to provide a public memorial to the late Professor Faraday,' was proposed in a short speech by General SABINE, who said that the Royal Society, over which he had the honour to preside, felt a pride and a pleasure in reckoning Michael Faraday as one of its members, and bore his testimony to the fact that out of all its long list of Fellows none had contributed such a valuable collection of papers to the *Philosophical Transactions*.

This resolution was seconded by M. DUMAS, Senator, Member of the Academy of France, and permanent Secretary of the French Institute. He proceeded with eloquence and perspicuity to touch in detail upon some of the scientific achievements of Faraday, and took occasion to observe that his genius in its various applications of science to practical purposes was distinguished by originality not less than by profundity, instancing his condensation of gas into liquids, his manufacture of steel and of glass, his magneto-electric currents, which encircle the world in the telegraph wires, and his magneto-electric light, to be seen in the most important lighthouses of England and of France. M. Dumas wound up his speech by expressing in a tone of deep emotion his own personal regard for a man who was singularly distinguished by his virtues in private life. There were many present who sympathised with M. Dumas when he added that the world at large had cause to lament the loss of Faraday as one of the greatest philosophers who ever shed light upon it by the force of genius, but that he himself had still greater cause to lament in his death the loss of a friend.

SIR HENRY HOLLAND moved the second resolution:—'That the following gentlemen be a committee to take the necessary measures for the provision of the said public memorial in honour of Faraday:—General Sabine, President of the Royal Society; Sir Henry Holland, President of the Royal Institution; Sir Roderick Murchison, President of the Geographical Society; Dr. Williamson, President of the Chymical Society; Mr. George Bentham, President of the Linnean Society; Mr. T. H. Huxley, President of the Geological Society; Admiral Manners, President of the Astronomical Society; Dr. W. J. Hooker, President of the British Association; the Right Hon. A. H. Layard, M.P., Mr. J. Fergusson, Mr. Gascoigne, Dr. Tyndall, Mr. Grove, Dr. Frankland, Mr. De la Rue, and Dr. Beace Jones, with power to add to their number.' Seconded by Sir Roderick Murchison.

Professor OWEN moved the third resolution, to the effect 'that a subscription, not exceeding five guineas in amount from any one person, be made for the provision of a public memorial to Faraday.' He prefaced this resolution by a few remarks, to the effect that the theatre in which they were assembled was redolent of Faraday, and seemed haunted by his spirit. Great and deep as was the learning which he displayed as a lecturer, still his profound and subtle generalisations were almost exceeded by that playfulness of wit by which he raised the intelligence of his hearers without lowering himself from the height of his professional dignity. Of his genius they had heard already from M. Dumas; but enough could scarcely be said of his personal merits, his singular modesty, and that unconsciousness of genius which is so often combined with genius of the highest order, as in Wellington. Like him, Faraday sought no honours, and the reputation of the philosopher, like that of the warrior, is reflected on his countrymen. Those, therefore, who are devoted to science have a right to call upon not only men of science, but Englishmen in general, to acknowledge and to pay the debt which we owe to Faraday. Let us think what will be the feelings of a future generation who will look back to him as we look back to Newton. His discoveries of the grand secrets of nature have added to our stores of wealth and ministered to our comforts, and hereafter there will arise the feeling that we have not done so much as we ought for one who has done much for us.—Dr. LYON PLAYFAIR, M.P., seconded the resolution.

The three resolutions were severally put to the meeting by His Royal Highness, and declared to be carried unanimously.

It is thought that the Faraday Memorial will very probably assume the shape of a monument in St. Paul's Cathedral. The Chymical Society have already established in his honour a medal, to be given annually to some foreign *savant* distinguished in the science of chemistry, and this year it has been conferred on M. Dumas.

Mr. Ernest Edwards, the inventor of the new mode of printing in carbon, is at present producing fac-similes of Albert Durer's engravings and etchings at the Burlington Fine Arts Club. The copies thus made are said to be with difficulty distinguishable from the originals, and to be imperishable.

## ENGLAND IN 1669:

## A RETROSPECTIVE REVIEW OF THE TRAVELS OF COSMO III.

(Concluded from page 304.)

And now, leaving science and scientific men, we will return to Cheapside. They saw nothing remarkable in the Guildhall. Adjoining Clothworkers' Hall there was a beautiful garden to walk in. In the Exchange there were four spacious galleries, in which were many shops of various kinds abounding with merchandise of every description, surpassing those in the New Exchange. London Bridge was even then difficult to cross on account of the number of carts that were passing and repassing. On it were many large buildings: some had been consumed in the fire, and those which had replaced them were of smaller size, the upper portions being used as dwellings and the lower as mercers' shops, all of which were abundantly supplied with goods of various kinds. Returning by the river, on which it is said there are ten thousand small boats to convey people up and down or to ferry them across, we come to Westminster. The greatest ornament of the Abbey is said to consist in its vast number of marble pillars variously arranged; as for the architecture, it is in no way more remarkable than other Gothic churches. The whole of the roof is vaulted; that of the middle aisle is the most open, but it has not more light than is necessary. Westminster Hall (over which old Noll's brave head was fixed), on account of its size, they inferred must have been originally a church. It is described as serving as a place for people to assemble who have business at the Law Courts, and for the accommodation of many moveable shops which are placed around it. The House of Commons was without ornament and surrounded with benches. The House of Lords was entered from the former by a door opposite the throne, and at a little distance from the door was a wooden rail, to prevent the Commons advancing too far when they appeared before the King. The walls were naked then, but during the sitting of Parliament it is said they were richly adorned with tapestry and painting.

And now we think we have glanced at all the references in the Travels to 'the memorials and the things of fame' that existed in London in 1669. The generality of the inhabitants are said to be proud, arrogant, and uncivil to foreigners, against whom, and especially the French, they entertain a great prejudice, treating such as come amongst them with contempt and insult. On the other hand, the French made fortunes in London, for, being more attentive to business, they can sell their manufactures at a lower price than the English, who would fain derive the same profits as other artisans, however little they work. As all things went on regularly, there was no want of anything in London. At every corner decent carriages were to be found, which were taken by time, charging so much an hour, with something extra for the first. The streets were lighted by night by large lanterns of various forms, fixed with great regularity against the doors, and boys were found everywhere to carry lighted torches. Some of the inhabitants were obliged to go the rounds and patrol the streets of their ward armed with halberds; consequently the City could be traversed and business carried on freely and securely at all hours.

During his stay the Prince was invited by the King to the races at Newmarket, an institution we owe to Charles, and on his return he visited Cambridge and Oxford, as well as some of the mansions that lay on his way. After leaving London, he stopped at Epping at an inn, the landlady of which was a relation of Cromwell's. He next visited Audley End or Inn, the celebrated seat of the Earl of Suffolk, and one of the finest houses in England. It was designed by Jansen, and although there was not much of the Italian style about it, it is easy to see that the travellers were impressed with its appearance. 'Descending into the valley below by an easy acclivity, we came to a spacious avenue planted with elms of considerable height, which terminated at the mansion. The entrance is into a quadrangular court, whose sides are surrounded by porticos of stone which, extending with perfect regularity to the distance of several bowshots, enclose a large meadow. The balustrade which runs round the court is formed, on the one side, of the letters which comprise the following words:—*"Sapientia est in consilio fortunam semper habere,"* and on the other with those of the motto belonging to the arms of the Order of the Garter. The interior of the house consists of many apartments, well proportioned and judiciously disposed, and of a wall-lighted gallery ninety paces or more in length, having a ceiling of stucco adorned with arabesque, and walls lined with wainscot, which is the custom in all the houses of the English nobility, as a protection against the cold. The architecture of the palace, although it was built only sixty years ago, is nevertheless not regular, but inclines to the Gothic mixed with a little of the Doric and Ionic. The materials of which it is composed are brick, the ornaments of all kinds are splendid, and entirely of stone, and the roof of lead. Upon the roof is a gallery, in the midst of which rises a small cupola containing a clock, the sound of which proclaims to a great distance the magnificence of this vast fabric.' The country towards Newmarket was thought to be delightful in appearance, enjoying not only a salubrious air, but a rich and fertile soil, so that there was some reason for Suffolk being considered as the most fruitful and agreeable of all the counties. It would not be in keeping with the method we have followed if we described the race, but it was a simple affair enough, as only two horses ran. The land about Newmarket belonged to Lord Arlington, who let it on a twenty-one years' lease at six shillings an acre, the rent payable half-yearly, and the tenant having full liberty to employ the land for pasture, to plough it, or sublet it. From Newmarket the Prince travelled to Cambridge, stopping at Chippisbam, 'a villa,' belonging to Sir John Russell, and which 'would bear comparison with any country seat.' At Cambridge he was received with much ceremony. There was an oration in Latin delivered before him, but on account of the pronunciation he couldn't understand a word of it; and it was the same afterwards in Oxford. He visited the buildings, and of King's College Chapel it is said that although it was Gothic, yet it displayed the royal magnificence of the Prince who erected it, in the nobleness of the decoration—a courtier-like way of considering architecture. The houses in the town were not much admired, on account of their beauty or materials, the greater part being of wood, with an outward facing of brick. From Cambridge, Cosmo

went to Northampton, where the balls rang out merrily, and being well tuned they were agreeable, at least during the day; but unfortunately the ringing was continued during a great part of the night, to the interruption of his Highness's sleep. The houses are said to be in a respectable style of architecture, the greater part of them being built of earth and stone, a good deal ornamented. On his way to Oxford the Prince stopped at Althorp, which, as it is in the Italian style, receives no small praise. 'The whole edifice is built regularly, both as to its exterior and interior, and is richly ornamented with stone of a white colour, worked in the most exquisite manner, and which is dug from a quarry fourteen miles distant. If they could take off a certain natural roughness from this stone, and give it a polish, it would not be inferior to marble. The ascent from the ground-floor to the noble storey above is by a spacious staircase of the wood of the walnut tree stained, and constructed with great magnificence; this staircase dividing itself into two equal branches, leads to the grand saloon above, from which is the passage into the chambers, all of them regularly disposed after the Italian manner, to which country the Earl was indebted for a model of the design, and it may be said to be the best planned and best arranged country seat in the kingdom, for although there may be many which surpass it in size, none are superior to it in symmetrical elegance.' With all respect for his Highness's architect, there is not much in the exterior of Althorp to warrant this praise; but the contents can, beyond those in any house in the kingdom, make glad the heart of every lover of books or art; and of them there is no mention made except the vague description 'that all the apartments are sumptuously furnished.\*' The Prince left Althorp in Lord Spencer's coach-and-six for Brackley, where he changed horses, and arrived at Oxford at one in the morning. 'He who can be proof against the strong emotions which the whole aspect and genius of Oxford tend to inspire,' says the German Huber, 'must be dull, thoughtless, uneducated, or of very perverted views. Others will bear us witness that even side by side with the Eternal Rome, the Alma Mater of Oxford may be fitly named, as producing a deep, a lasting, and a peculiar impression.' And it would seem that the Italians were no exception to the proverbial influence of its sweetness, for the tone of their criticism here seems to us to become entirely different. The private houses are said to be built with more magnificence than is usual in the kingdom, being for the most part of stone; but the public buildings exhibit 'a singular magnificence.' Lincoln College is 'of beautiful workmanship and exquisitely ornamented.' Exeter 'is in a very respectable style,' and so on. Wren's theatre, as an Italian building, was in any case certain of approval. On his way back to London the Prince stopped at Billingsbere, then belonging to Colonel John Nevil, and in describing it we have this notice of rooks: 'the rooks are considered in England as preserved birds, the nobility priding themselves on seeing them in the neighbourhood of their villas, and looking on them as fowls of good omen, so that no one is permitted to kill them under severe penalties.' Cosmo next visited Windsor ('a populous town in the county of Berkeria, called by the English Berkshire'), than the castle of which he says the kings of England have not a more delightful residence. And from Kingston he returned by the river to London. Of Hampton Court (where he had been entertained with a deer hunt) it is said that 'it was commenced by Wolsey, and finished in the same Gothic style and with the same splendour of decoration; and though the more elegant orders of architecture are not to be found in it, so as to make it a regular structure according to the rules of art, yet it is on the whole a beautiful object to the eye;' and when the Prince expressed a similar opinion to Charles, he politely returned, 'that his Highness's affection for the things of this country made him regard it with partiality, but that it could not be compared or put in competition with those of Italy.' Having visited the English navy, Chatham, and Sheerness, Cosmo and his suite left London. On their way to Harwich they stopped at Thorndon, Lord Petre's house, and here, while they were at dinner, the chimney took fire. When it is remembered how much hospitality was forced on Cosmo, it sounds unpleasantly to hear this ill report following his last dinner in England:—'Their tables, though distinguished by abundance, are deficient in quality, and in that exquisiteness of relish which renders the French dishes grateful to the palate. This is particularly the case with the pastry, which is grossly made, with a great quantity of spices, and badly baked. There is also a great want of that neatness and gentility which is practised in Italy, for on the English table there are no forks nor vessels to supply water for the hands, which are washed in a basin full of water, which serves for all the company; or perhaps at the conclusion of dinner they dip the napkin into the beaker which is set before each of the guests filled with water, and with this they clean their teeth and wash their hands.' After leaving Thorndon they passed through Hennington, near which Lord Petre, they were told, held several estates as a fief of the Crown on condition of taking a leap in the King's presence every Christmas Day, besides some other ridiculous ceremonies, in acknowledgment of his tenure. Cosmo next visited, at Newhall, General Monk, Duke of Albemarle, who was then very ill (he died the following January); but he tried as well as he could to usher the Prince into a room where there was refreshment prepared, 'which had more the appearance of a parsimonious collation than of a handsome dinner.' Newhall is said to be a spacious and magnificent edifice, and although the architecture is not in that perfect style of modern buildings, yet it is by no means destitute of grandeur, owing to the size and elegance of the apartments. From Newhall the Prince travelled to Colchester, and thence to Ipswich, which is said to possess many handsome buildings, and its appearance, with its spacious squares, is very noble. The last town the Prince came to was Harwich, the houses in which are said to be mean and shabby; and on May 16 he embarked on board the vessel presented by the United Provinces to the King on his restoration.

\* All the county histories and topographies we have met with state that Althorp was built in 1688. Baker, in his colossal History of Northamptonshire, says, more cautiously, it was 'restored' in 1688. From the above description we should say 1668.

A Fountain is to be erected in honour of John Galt, author of 'Sir Andrew Wylie,' 'The Annals of the Parish,' and other well-known works.

## WORKS IN HAND OR SHORTLY TO BE EXECUTED IN FRANCE.

THE beautiful quaint old building of the Hôtel de Cluny is in the hands of the masons and sculptors, who are repairing the pierced gallery which crowns the walls of the building, and the ornamental work of the dormer windows, which had in parts fallen into a very insecure condition. All this sculptural work is of the end of the fifteenth and the early years of the sixteenth century, and is remarkably original and delicate in its execution.

The number of small animals introduced into the decoration,—dogs, squirrels, rabbits, lion cubs, monkeys, lizards, and birds,—and the grotesque gargoyles, are the delight of the *faneurs* of Paris, who have little taste for the beautiful lines and proportions of the building. We have no doubt that the old ornamentation will be replaced with the greatest possible care, but we recommend architects and students who find themselves in Paris to pay the old Hôtel a visit before the rich tint of time is removed off its face.

The Seine is about to be spanned by a grand new bridge, which will connect the recently-formed Boulevard Saint-Germain with the Place de la Bastille; the line of the new boulevard will cross both streams of the river at the point of the Isle St. Louis. The new bridge will be longer than the old Pont-Neuf, and, like it, will have the point of the island beneath it. This bridge will replace the old wooden structure, as well as the suspension bridge of Constantine, which now connect the island with the two shores.

A bridge is ordered to be constructed over the Yonne, near the hamlet of Laroche, in the Commune of Saint Cydroine. The work including the approaches will be heavy; a sum equal to 2,508*l.*, in addition to a toll to be laid upon the bridge is devoted to the undertaking, which will shortly be put up to public competition.

The following works have also been declared by decree to be of public utility, and will shortly be carried into execution by contract. A landing quay and small side dock on the canal of Ile and Rance Saint Gregoire, Ile-et-Vilaine. The increasing of the water in the canal of the Nivernais by means of a rigole from the river Aron; expense estimated roughly at about 20,000*l.* The rectification of the canal of Haute-Deule and the construction of a new lock on the same. The draining of the lake, or morass, known as the Flot de Vingles, in the departments of the Pas de Calais and the Nord.

Instructions have also been given to the Algerian engineers to draw up plans for the following improvements of the port and town of Bône: A swing bridge at the entrance of the Bondjunah, to connect the town and the south quay. Completion of the south quay. To dredge out the basin to the depth of 23 feet so as to let in large vessels. To reduce the width of the entrance of the outer harbour from 400 to 300 mètres. To deepen the outer harbour over twenty acres, so as to receive men of war. To establish graving basins and slips; and, lastly, by dredging or otherwise to reclaim a large tract of land between Fort Cigogne and the Bavayaud jetty.

## ILLUSTRATIONS.

THE LONDON ORPHAN ASYLUM, WATFORD.  
HENRY DAWSON, ARCHITECT.

THIS building, of which we give a bird's-eye view, has been designed to receive 600 children, of whom 400 will be boys and 200 girls; and, as a glance at the illustration and the references at its foot will show, all the separate departments required for such an institution are included in the scheme.

The boys and girls occupy separate sides of the establishment, and their play-grounds are separated, as the view indicates, by the central mass of buildings. The boys are lodged in 'Houses' adjoining one another, but perfectly distinct; and each house is arranged to receive 50 boys. These houses surround separate quadrangles for senior and junior boys. In the centre of each quadrangle is the School, with a covered play-ground under it. The instruction will be given in class-rooms. The dormitories for the girls will also be arranged to receive 50 in each, but they are not to be placed in distinct houses like the boys.

The amount of cubic air space in each dormitory averages above 750 cubic feet per child.

The Dining Hall will have distinct entrances for the boys and girls, and distinct communications at each end with the kitchen departments in the basement. It is to have an open hammer-beam roof.

The Chapel will be built simultaneously with the other buildings, and its origin is one of the most interesting features of the whole undertaking, for it is to be erected at the sole expense of a lady who was formerly the head mistress in this very Institution, and was indeed herself brought up from a child as one of its scholars. Instances of good-will shown towards our various schools and other benevolent establishments by those who have been aided by them in early life are happily not rare; but we do not remember to have heard of any other case where circumstances had combined to render possible so grateful and so munificent a gift as this.

It is not at the present moment intended to accommodate more than 450 children—300 boys and 150 girls; but all the administrative and domestic buildings required for the full complement of children will now be erected. It is also intended to suspend the erection of

the Infirmary until sufficient funds are obtained. In the meanwhile it is proposed to appropriate one boys' house, and the top storey of the Central Building, as temporary infirmaries for boys and girls respectively. Even when the whole 600 are provided for, and the Infirmary built, there will still remain the option of enlargement, as the design has been specially arranged to admit of future extension.

An Artesian well has been sunk to a depth of 300 feet, and an abundant supply of pure soft water has been obtained.

The buildings will be brick-built, the main walling being executed in yellow bricks, with bands, arches, &c., of red brick, and dressings of Box and Farleigh stone; the roofs are to be slated, and the construction throughout simple, but substantial.

Their Royal Highnesses the Prince and Princess of Wales have signified their intention of attending on July 12, to lay the foundation stone of the new buildings.

## NEW DOCKS AT GREENOCK.

WE give this week a bird's-eye view of the proposed new Docks at Greenock, designed by Mr. T. Claxton Fidler, C.E.

The Harbour Trustees invited designs for this work in competition, and in their instructions to competitors, stated that they proposed to construct docks capable of affording accommodation to vessels of from 3,000 to 4,000 tons, and to consist of a graving dock, the size of which was to be 500 feet long on floor, capable of extension to 750 feet; and 90 feet wide on top, with an entrance of 65 feet; and to be 18 feet deep at top of blocks; and either two wet docks or two tidal harbours.

They required the docks to be so laid out that any parts could be carried out in succession so as not to interfere with the traffic of any portion which had already been executed; and they were desirous that the graving dock, which was most required, should be so placed that its construction might be at once proceeded with, leaving the remaining portion of the ground free and undisturbed to be let off for temporary building purposes if they felt so disposed. It was of the utmost importance that ample railway communication should be provided between the docks and the Caledonian Railway close adjacent.

Sir John Rennie, in his admirable work upon 'Harbours,' in speaking of Greenock says—

Originally Greenock consisted of merely a few cottages, tenanted by fishermen and casual traders, scattered along the shore; and in the period between 1635 and 1639 it was a place of no importance. . . . The port consists of an outer and an inner harbour. The outer harbour is formed by the secure roadstead in front of the town, which may be considered to be additionally protected by a bank or shoal about 9 miles in length, running parallel to the shore at a distance of about 400 yards. The depth of the channel between the bank and the town varies from 10 to 26 and 29 feet at low water, so that the roadstead presents ample accommodation for vessels of almost any size at all times of the tide and in excellent holding ground.

The site for the proposed docks is the 'Garvel Park,' situated to the south-east of the present harbour, and projecting out rather prominently into the Clyde. It is situated exactly to the south of the 'Greenock Bank' above referred to, and lies to the west of the 'Cockle Bank.' A smaller bank appears to the north-east, and divides the main channel into two parts. The formation of this 'patch' and the consequent narrowness of the channel offer very strong arguments against any entrance to the docks at the eastern part of the estate, as the ebb-tide along this secondary channel would be constantly silting it up.

The Tidal Harbours Commission, in their Second Report in 1835, stated 'that their Committee found that one of the most important questions under their consideration was that relating to the additional harbour accommodation, and the cost at which such a demand could be supplied; and they further believed it to be desirable that in dealing with any plan for the extension of the harbours, wet docks should be included.' Mr. Rennie strongly advocated the construction of wet docks, and the Committee found that the great arguments in their favour were as follow:—

1. That the increasing trade of the port required additional accommodation.
2. That the quality of the harbour accommodation was inferior to that which wet docks would afford.
3. That the construction of wet docks at Port Glasgow rendered it necessary that Greenock should provide similar accommodation.

Strong arguments were offered against wet docks and in favour of tidal harbours; and at that time, when the tonnage of the largest vessel was not more than 1,200 tons, the popular impression was that the latter were most suited to the requirements of the trade, the range of the tide being comparatively small. But it must be remembered that the tonnage of vessels that will require to use the docks is from 3,000 to 4,000 tons, and it is of the utmost importance that proper and secure accommodation should be provided, which can only be effected by wet docks.

We now proceed to give some extracts from Mr. Fidler's descriptive Report which accompanied his design:—

The proposed works consist of a tidal basin with entrance from the deep-water channel, a double graving dock with entrance from the tidal basin, closed by a caisson, and an inner or wet dock connected with the tidal basin by an entrance with a single pair of gates, and, if necessary, also by a lock, as shown on the plan.

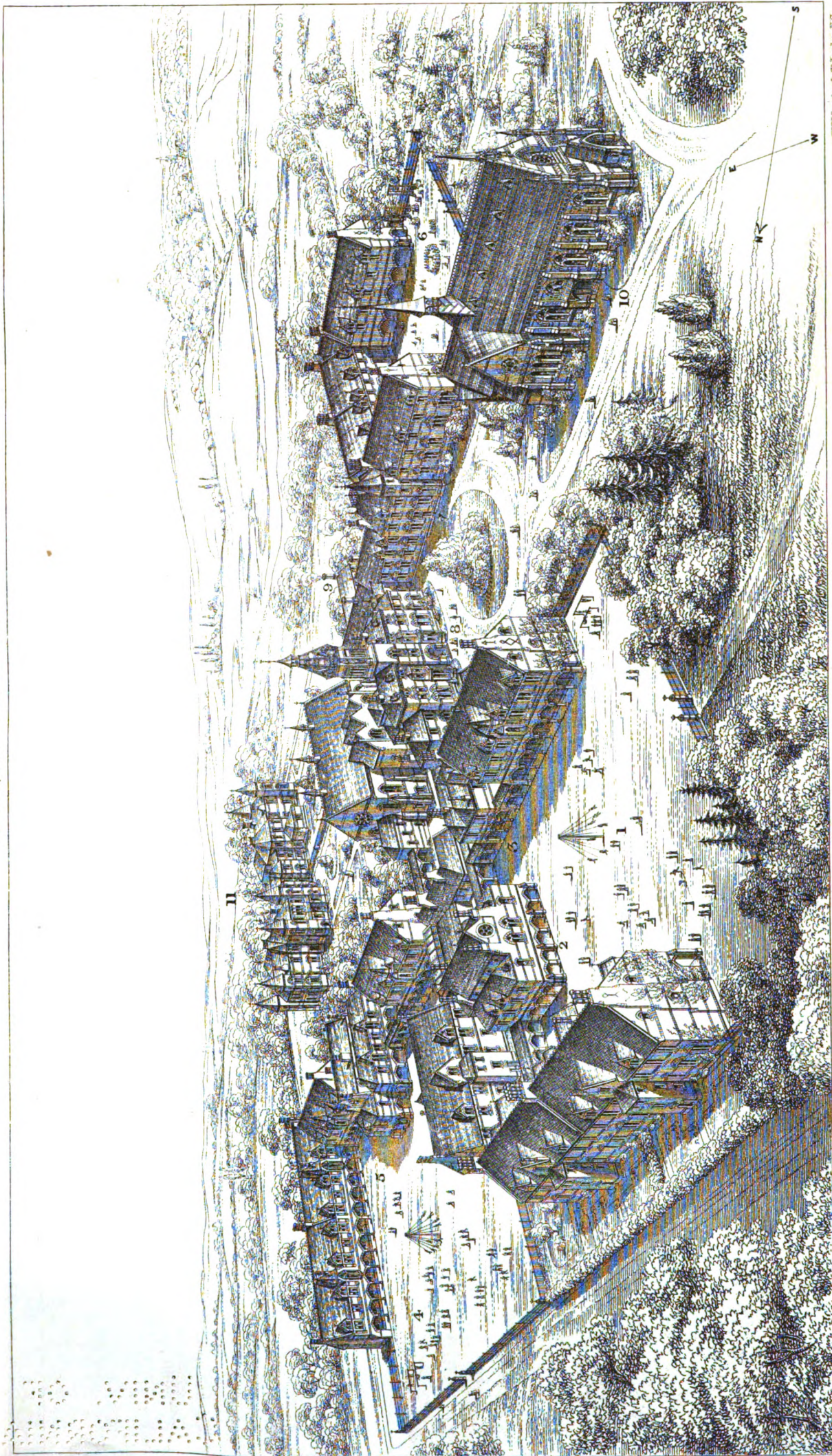
In order to secure the outer entrance from silt, it is placed as far from the



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The Architect June 26<sup>th</sup> 1869.



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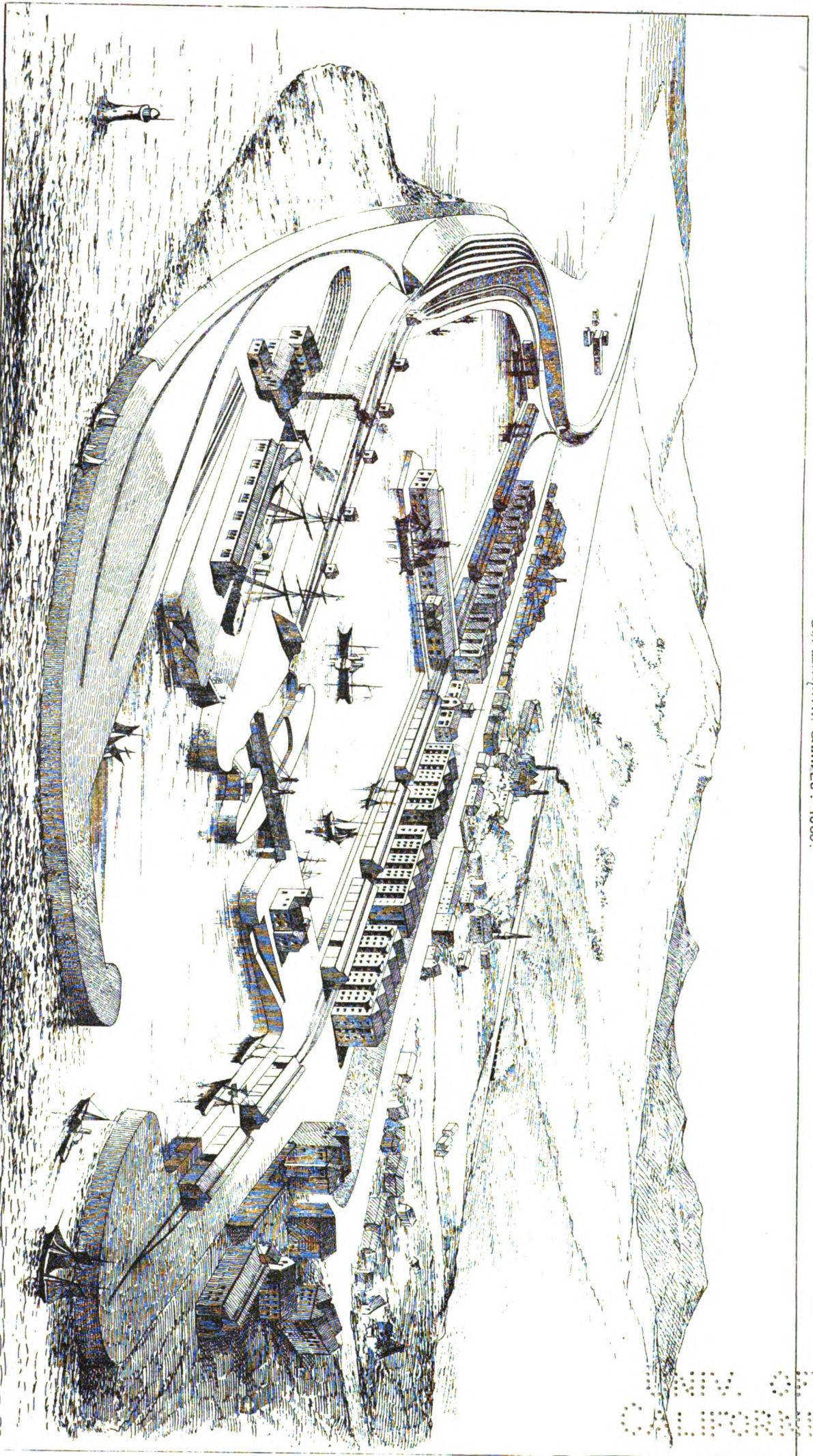
- 1— JUNIOR BOYS' QUADRANGLE
- 2— JUNIOR BOYS' SCHOOL & COVERED PLAY GROUND
- 3— HEAD MASTER'S HOUSE
- 4— SENIOR BOYS' QUADRANGLE
- 5— SENIOR BOYS' SCHOOL & COVERED PLAY GROUND
- 6— GIRLS' QUADRANGLE

**LONDON ORPHAN ASYLUM NOW ERECTING AT WATFORD.**  
 HENRY DAWSON, F.R.I.B.A. ARCHT.

- 7— MISTRESSES' APARTMENTS
- 8— ADMINISTRATIVE OFFICES, WITH DINING HALL & DOMESTIC OFFICES AT THE REAR
- 9— LAUNDRY BUILDING, ENGINE HOUSE, &c.
- 10— CHAPEL
- 11— INFIRMARY



John Arrifiber: June 26<sup>th</sup> 1869.



NAVY OF CALIFORNIA

**PROPOSED NEW DOCK AT GREENOCK.**

**BIRDS EYE VIEW OF THE DESIGN TO WHICH THE FIRST PREMIUM WAS AWARDED.**

**T. CLAXTON FIDLER C.E. ENGINEER.**

J. Mansfield, Archt.

Printed by W. Mackenzie & Co. London, E.C.



NO. 1001  
ANNEXURE

convex bend, and as near the concave bend, of the current as possible, consistently with allowing a sufficient offset on the south side to prevent entering vessels from interfering with those berthed along the South Quay.

The position of the outer entrance, while affording facilities for entrance and departure at all times, is arranged especially with a view to vessels entering a little before high water, and lies about in the direction that a vessel must take when moving ahead at about 1½ knots, and being at the same time drifted laterally by the flood tide.

Direct access to the graving dock and north quays is provided by a swing bridge crossing the two entrances in one length, and centred in the middle.

The basin covers five acres, and affords on the north side 200 yards quay for discharging timber to timber stores, with a siding connected with the Low Level Railway; on the east side are the inner entrance, landing slip and boat stairs; and on the south side, 165 yards quay for general purposes, with a siding also connected with the Low Level line, and convenient road approach from Hamilton Street.

To the north of the graving dock there is more space than would probably be required for pumping engine, and repairing yard and sheds, which may be thrown into the area of timber store, or may at any time be utilised for the construction of a Morton slip as shown.

The inner dock, when completed, will cover 14½ acres. It is partly divided at its widest part into two basins, west dock and east dock, by a jetty 350 feet long from the South Quay, and 100 feet wide, on which can be built warehouses with craneage for direct discharge, as shown.

Jetties afford the means of increasing the quay accommodation at an economical rate, but they must be spaced sufficiently far apart to allow free room for the manoeuvres of vessels, else their advantage disappears, and sufficiently far apart to leave between them such a length of main quay as to ensure that no large fraction of it should be unavailable, else their economy disappears also.

The Dock Road runs parallel to Hamilton Street the whole length of the ground.

The Low Level Railway falls from the Caledonian, runs along the whole south side of the wet dock and tidal basin, while a branch is carried round the north side to the graving dock and timber yard by a High Level line, which crosses Hamilton Street to the coal sidings: the coal traffic being kept entirely distinct on the north side.

The High Level embankment, 35 to 40 feet above H. W., will afford material shelter to the shipping in the docks from north and east winds.

The whole inner dock gives on the West, South, and East sides 900 yards of available quay length; on the North-West side 200 yards for shipping coal; and on the North-East side 290 yards of quay, which may either be used for general purposes or for extension of coal traffic, both railways being in proximity.

The scheme fulfils simply the first condition laid down, that, namely, of providing the greatest possible dock accommodation of all kinds that the ground admits of; the efficiency of any part is not, however, dependent upon the execution of the whole, so that the several works can be taken in hand from time to time when their execution may have become desirable.

## PARLIAMENTARY PROCEEDINGS.

### Clerks of the Royal Engineer Department.

In the Commons, on the 17th inst., on the order for going into committee of supply on the Army Estimates,

Mr. M. CHAMBERS called attention to the anomalous position of the clerks of works and clerks of the Royal Engineer department, and the denial of pensions to their widows, and moved, 'That in the opinion of this House they are entitled to, or should be granted, the same rights and privileges, according to their relative rank, as are extended to other non-combatants in the military service.' The hon. gentleman made a long statement in support of his motion.

Captain VIVIAN admitted that his hon. friend had stated the case from the point of view of those whose claims he had advocated, but he should remind him that in granting pensions and allowances it was necessary to draw the line somewhere, and make a distinction between different classes of officers. His hon. friend claimed to have the clerks of works and of the Engineer department placed on the same footing as other non-combatants, because they were exposed to the same casualties. But this was not so. The officers of the commissariat department and of the store department were, of necessity, obliged to deal with the army in the field, and exposed themselves to the danger of being shot; but the clerks of works had no such duty imposed upon them, and were not subjected to the same dangers. During the Crimean war there were only two clerks of works in the East at all, and they were at Scutari, many miles away from any firing. He could not concur that by the warrant of 1858 those clerks were placed in a worse position; most certainly such was not the intention of the framers of it. If the House chose to sanction extra pensions and allowances, it must be prepared for an increase in the estimates.

Mr. MAGUIRE supported the motion, and quoted the case of a Mr. Lacy, a native of Cork, who had died from the effects of a sunstroke while engaged in the public service in Africa, as one justifying a pension to his widow.

After some further conversation, the motion was by leave withdrawn.

### Buckingham Palace Guard-Room.

Viscount BURY moved an address for copy or extracts of correspondence between the Board of Works, the War Office, and the Royal Engineers' Department of the Horse Guards, which has taken place on this subject

since August last. He contended that the place is most unhealthy, and altogether unsuited for a barrack-room.

Mr. LAYARD had no objection to the production of the papers.

The motion was withdrawn.

### The Ladies' Galleries.

Mr. H. HERBERT asked whether there exists any reason why the gratings in front of the Ladies' Galleries should not be removed?

Mr. LAYARD could not take on himself the very grave responsibility of removing the gratings. The reason why they have not been removed is that the general feeling of the House was against it. As regards the accommodation, he must confess that it was exceedingly bad, and, were it not for those whom it contained, he should be disposed to call it a chamber of horrors.

Mr. HERBERT gave notice that he would call attention to the subject on going into supply.

### Ryde Pier.

In the Lords, on the 21st inst., Sir J. ELPHINSTONE asked the First Lord of the Admiralty if he would state the reasons which induced the present Board of Admiralty to reverse the decision of their predecessors and permit the extension of Ryde Pier to the westward; and whether the proposed extension was not the subject of inquiry by the late Board of Admiralty, and refused by them on the ground that it would interfere with the navigation of that part of the Solent.

Mr. CHILDERS.—There are two piers at Ryde, the property of a joint-stock company, and an application was made to the late Government to allow a considerable extension of one of them to the west in order to enable a ladies' bathing-place to be erected. This was strongly supported by the local authority of Ryde, but opposed by the owners of lighters and coasters, on the ground that it would interfere with their access in certain winds and tides to a small landing-place between the two piers where coal and other merchandise are landed. My predecessor refused the application. This year the same application was made to the present Board, and as I found much difference of opinion on the part of the officers I consulted, I took advantage of a recent visit to the Solent to inspect the locality with Sir Sydney Dacres and Sir Thomas Symonds; and I decided to sanction a modified plan, which, in their opinion, would not interfere with the navigation. From a naval point of view there is no objection to either plan.

Lord H. LENNOX asked whether the right hon. gentleman would have any objection to lay on the table of the House copies of the opinions on which the late Board of Admiralty had come to a decision on the question, especially of the opinion of the Master Superintendent of Portsmouth Dockyard and his gallant friend the Director of Works to the Admiralty, both of whom had made a personal inspection of the site.

Mr. CHILDERS replied that his noble friend could, if he wished, have access to the enormous volume of papers on the subject. He did not, however, think it would be worth while to print the correspondence on a question which had been so fully considered by the Admiralty.

### Ventilation of the House.

In the Commons, on the 21st inst., the Earl of ALBEMARLE called attention to the defective ventilation of the House. Last week, during one of the most brilliant debates on record, some of their lordships experienced great discomfort—indeed, he might say as to the elderly portion of them, some danger—from the intense cold rising through the floor. He would suggest that at least a portion of the floor should be rendered airtight for the benefit of members of the House, who, like himself, had arrived at the age of threescore years and ten, leaving younger and hardier lords to adopt such remedies as railway rugs and hot-water bottles, if they required them. (A laugh.)

Earl GRANVILLE hoped his younger friends would not be left altogether in the cold, if the noble earl's suggestion were adopted. On re-entering the House one night last week after a very short absence, he complimented the person who had the direction of it on the wonderful freshness of the air, considering the enormous number of persons present, whereupon he was informed that there was great difficulty in regulating the temperature of both Houses, and that, as an instance of it, a remonstrance had just been received from two of his colleagues on the Treasury Bench in another House, one complaining that the heat was intolerable, and the other that the cold was insufferable. (A laugh.) So much depended on individual temperament that if by any arrangement one part of the House could be kept cold and another warm, it would, no doubt, be very convenient.

The Earl of ALBEMARLE remarked that the luxury of sitting on the lower benches, after having sat on the upper ones, was inconceivable to those who had not experienced it.

### The National Gallery.

On the motion of Viscount HARDINGE, an address to the Crown for a copy of the report of the trustees on the requirements of a new National Gallery was agreed to.

### The New Law Courts.

On the 22nd, Mr. GLADSTONE, in reply to Colonel Wilson Patten, said the Government proposed to appoint a Commission to hear evidence as to the site of the new Law Courts, because it would not be in order to refer the Bill upon the subject to a Select Committee until it had been read a second time. He accordingly proposed that the Bill be not further proceeded with at present, and therefore it would not yet be necessary to ask any questions respecting it of the Standing Orders Committee. If the Bill was postponed for four weeks or some such time, that the Select Committee might have time to report, the Standing Orders Committee could hold over its report until that time.

Later in the evening, Mr. GLADSTONE, in moving the appointment of a Select Committee to inquire into the site and charges of the New Law Courts, explained his reasons for pushing the question into this new phase. Practically, there were now two new plans before the public—the Embankment and the new Carey Street site—for the old Carey Street plan, in all its extensive proportions, was now abandoned, or at least was reduced to its original dimensions; and admitting that Mr. Lowe's idea had not met

with the universal acceptance expected for it, the Government thought the fairest and most convenient mode of procedure would be to have a full inquiry by a Committee. At this period of the Session the House could not go at length into such a subject; and, moreover, the Standing Orders Committee objected to suspending the standing orders unless the House had given a very decided approval of the scheme.

Sir **ROUNDELL PALMER** assented very reluctantly to the Committee, remarking on the delay, which cost the country 40,000*l.* a year in interest on money already expended. Much would depend on the manner in which the inquiry was conducted, and he urged, therefore, the importance of constituting the Committee impartially.

Mr. **H. PALMER** gave notice that he would ask that the proposal of Lincoln's Inn to provide Equity Courts be considered by the Committee; and Mr. **WALTER** asked whether the plans of the architects would be referred to the Committee, to which Mr. **GLADSTONE** replied that the designs would not, but that the general plan of concentration, &c., would naturally be part of the subject-matter for inquiry.

The Committee was then agreed to without further discussion.

#### Suburban Commons.

Mr. **COWPER** obtained leave to bring in a Bill to make provision for the improvement, protection, and management of commons in the vicinity of cities and towns in England. Its main object he explained to be to arrest the impulse which was given by the machinery at the command of the Enclosure Commissioners to the enclosure of those commons and waste lands which, being in the neighbourhood of towns, furnished places of recreation and enjoyment for large numbers of people.

## SOCIETIES.

### Royal Institute of British Architects.

At the closing meeting of this Institute for the session 1868-69—W. Tite, M.P., President, in the chair—Mr. J. P. Seddon, honorary secretary, announced that the Report of the General Committee on Architectural Education had been considered by the Council, who had passed the following Resolutions, based on certain propositions contained in the Report:—

1. That a text-book or pamphlet should be prepared pointing out where and when (in addition to office instruction) courses of lectures, specially pertaining to the profession, can be attended, and giving a limited number of books in which the best information is to be had.

2. That a certificate be granted to all who pass the voluntary architectural examination established by the Institute.

3. That a preliminary examination be held at the Institute in elementary subjects, open to all students who have been at least one year in an architect's office, provided that it be not made compulsory on those who come up for the voluntary architectural examination.

4. That the Institute should assist the Architectural Association to carry out the drawing school which it was proposed by that Society to establish this session.

Mr. Seddon also announced that Professor T. H. Lewis and Mr. A. Waterhouse had been requested to prepare the text-book referred to in Resolution No. 1, which, when approved by the Council, would be submitted to the members at a general meeting next session; that a form of certificate had been prepared, and would in future be given to those candidates who pass the voluntary architectural examination; that the preliminary examination mentioned in Resolution No. 3 would be (with the approval of the general body) henceforth established in connexion with the annual voluntary architectural examination; and that the Council were prepared to assist the Architectural Association Drawing Class in accordance with Resolution No. 4.

Mr. Seddon added that, in regard to the other suggestions made in the Report of the General Committee, the Council desired to retain under the control of the Institute the architectural examinations above mentioned, but that they could not at present entertain the proposition that passing the examination should be made a condition of future membership.

The following Papers were then read:—

'A Description of the Tomb of Vitalis (an ancient Roman architect), in the Villa Volkonsky, at Rome; and of Some Remains in Palestine.' By Prof. Donaldson, P.P., Hon. Sec. F.C.

'On Abyssinian Church Architecture.' By W. Simpson, Esq.

Before the meeting adjourned the President announced that, in consequence of the engagements of many guests who had been invited on the 26th inst., the Council had reluctantly found it necessary to postpone the dinner which was to have taken place at the Crystal Palace on that day.

The conversation will be held at the Rooms of the Institute on Thursday the 1st of July.

### Manchester Society of Architects.

#### ABSTRACT OF ADDRESS BY THE PRESIDENT AT THE LAST GENERAL MEETING.

Following the routine of subjects named in the Report presented to the Annual Meeting on June 22nd last, I may remark upon the desired consolidation of all clauses affecting buildings now in force in this city, that no steps have yet been taken by the Corporation, so far as we know, to carry out this most desirable object. Its importance, however, is so great, and its usefulness so obvious, that probably only the pressure of other business has prevented its being attended to. For want of such consolidation, all parties are apt to be misled—builders, architects, members and officials of the Corporation alike; and if the City Council desire only to secure safe and wholesome house-building, there can be nothing gained by having a hazy atmosphere hanging round all the legislative enactments which are expected to be observed.

The Town Hall competition was a double one; that is, a sketch competition, open to all comers, followed by a limited competition among a certain number selected from the first. This Society, by a vote all but unanimous, condemned this method, and endeavoured to obtain an alteration in the intentions of the Committee, but without success. We also recommended

certain restrictions as to the number and size of drawings: these were adopted with much satisfaction to competitors, and this useful result followed—that a sketch competition was shown to be amply sufficient to test the powers of Architects, and enable any qualified person to determine upon that one who ought to have the preference, thereby avoiding the utter waste of time, energy, and Art enthusiasm which is the result of competitions as usually conducted.

But then, members of the profession must be loyal to the conditions and towards their brethren. To this sketch competition were sent in some drawings lined like the finest steel engravings, and some that had occupied the spare time of many weeks to colour. Was this fair in a competition intended to be of sketch designs? Of course I do not advocate slovenly drawing, but rather condemn a load of mechanical and draughtsman's work taking the place of the more artistic touch of the master.

One difficulty which we foresaw, and which influenced us in deciding against a double competition, was the impossibility of keeping the sketch designs unseen by those who were to engage in the second competition. This was felt by the Town Hall Committee also, and they issued a circular in which they said—"It has been determined that there shall be no public exhibition of such designs, and that under no circumstances will such designs be allowed to be seen by any competing Architect."

You know what followed upon this most distinct and unqualified engagement. So soon as the selection was made, each unsuccessful competitor received a circular asking him to allow his drawings to be exhibited, and there was a public exhibition of those whose authors did not forbid it. Nearly all those Members of our Society who were so addressed at once forbade their being exhibited, unless in company with the selected designs; this was, perhaps, too crucial a test of the wisdom of the selectors to be agreed to, and our now useless drawings were immediately restored, and a doubly-maimed exhibition opened to the public. Now observe the curious result in any such case;—no competitor has any assurance that his designs were even seen by the adjudicator. I do not for a moment insinuate that such was the case in this competition. I am pointing out the inevitable evils of such a system. My own opinion is, that the whole of the designs should be exhibited so soon as received, and before any selection has been made. Let them stand the test of public criticism before any bias has been given, and let every man have the benefit of an open fight. Will this insure a fair adjudication? No, by no means; it did not in the case of the Law Courts in London; and nothing will; the whole system is rotten—root and branch. But it will do one thing—it will make the injustice of the decision so palpable that the victor will not gain his laurels, and the vanquished will feel themselves to be, though injured, not humiliated.

The Exhibition closed—drawings returned to obscurity—fresh instructions went forth to the eight successful competitors, and then followed weary months of utterly vain and unprofitable labour to produce a number of pictures, many of them of great merit, but of no use to enable any man to come to a decision as to the best and most suitable design—any competent man, I mean. (Does any one suppose that such drawings were made for any of the great works of the middle ages?) Then came the tug of war, and finally the exhibition of these, professedly the choicest of 140 designs. Avoiding all question as to the final adoption of that design which is now being translated into stone and brick, I cannot hesitate to say that designs were there among the eight which no man of mature and impartial judgment would have selected as fit to be built; arrangement of plans that were entirely unsuitable, and external designs that were simply absurd as for the purpose intended. If what I aver be impugned, I appeal to the selected design itself; and I say that, accepting it as the type of what was required in plan and in architectural character, some of the remaining seven had not the shadow of a pretence to be there.

What shall I say more? I have endeavoured to show that this plan of a double competition is to be condemned; that the architect might have been selected by the sketch competition; that the fruitless labour upon eight elaborate sets of pictures might have been entirely avoided; and I may add that the cost of that labour (2,400*l.*) might have been in great part saved, for one-tenth of that sum divided among ten competitors in the first competition would have better remunerated them than the 2,400*l.* did the eight in the second.

### Cork Ouvierian and Archaeological Society.

The last meeting of this society for the session 1868-9 was lately held in the Library of the Royal Cork Institution. Mr. T. R. Lane, President, in the chair. The paper read was 'On the Prehistoric Remains around Lough Gur,' by Professor Harkness, F.R.S. The author said the neighbourhood of Lough Gur, in the county Limerick, is one of the localities in Ireland which abound in prehistoric remains. It has furnished the museums of the Royal Irish Academy, the British Museum, and the Museum of the Society of Antiquaries, with many interesting relics, and several of the collections of private individuals contain implements of various kinds, which have been derived therefrom. Lough Gur is about three miles north of Bruff; its name, according to Mr. John Fitzgerald, of Grange Cottage, near its margin, is a corruption of Lough Argor, or the Lake of the Stone Circles, a term expressing the character of some of the prehistoric remains which are so abundant on its shores. Of these circles three occur near Grange Cottage, and one of these, which is composed of earth as well as stone, is very perfect, owing to the careful preservation of Mr. Fitzgerald. It is about 150 ft. in diameter, and, rising about 9 ft. above the ground which surrounds it, is 36 ft. wide at the base. Mr. Fitzgerald has recently discovered the entrance into this circle, which is on the E.N.E. side. This entrance consists of a passage about 2 ft. wide, lined on the sides with stones, and in this respect corresponding with the interior portion of the circle itself. The surface of the ground inclosed by this circle is considerably higher than that of the land outside the circle. The other two circles near Grange Cottage are composed exclusively of blocks of stone. One of these is imperfect, and has a diameter of 170 ft., and the other, which is perfect, is 55 ft. wide. On the eastern side of Lough Gur is a hill called Knockadon, on which there are also stones and earth circles. These, as compared with those at Grange, are small in size, and have only a slight



elevation. About half a mile north-east of Knockadoon other stone and earth circles are seen. One of them is 155 ft. in diameter, and incloses another circle about 50 ft. wide. A few yards south of the outer circle a third occurs, 35 ft. in diameter, having the ground inclosed by it about 3 ft. above the level of the surrounding surface. In this respect this circle has considerable affinity to the large one near Grange Cottage. The neighbourhood of Lough Gur affords other prehistoric remains besides circles. Three cromlechs occur near its margins, one about a third of a mile from Holy Cross, and the other two about three-quarters of a mile to the south thereof. These cromlechs are locally known as giants' graves. Near Black Castle, on the S.E. side of Lough Gur, a large stone circle is seen, composed of flaggy limestone, the covering of which, to a considerable extent, remains. This also is known as a giant's grave, and the purpose for which it was originally designed was probably similar to that of the cromlechs, namely, as a place of sepulture. A very fine monolith can also be seen on the west side of Lough Gur. This is 12 ft. high by 7 ft. broad, and from 3 to 4 ft. wide. It exhibits no traces of sculpturing, nor are there any artificial markings upon it. Two hills which rise above the east and west side of Lough Gur have their summits covered with remains of ancient circular forts, built of large stones, but without mortar. These are the remains of structures similar to the Staigue fort, county Kerry, but they have here inclosed greater areas than their Kerry representative. Lough Gur has also yielded remains which belong to a more recent prehistoric period than the stone age. Bronze weapons of various kinds have come from it, and also some copper celts. In form these latter approximate more nearly to the stone celts than those of the succeeding bronze period; and they serve to connect the age of stone with that of bronze by implements of a ruder type, only of a less complex nature than those of the later prehistoric epoch.

#### Royal Geographical Society.

The Rev. F. W. Holland at a recent meeting of this Society gave an account of the late explorations in the Peninsula of Sinai made by officers and men of the Royal Engineers. The principal task undertaken by the party was the survey of a district 15 miles square around Mount Sinai and Jebel Serral, on the scale of 6 inches to the square mile. Mr. Holland having explored the Peninsula on previous occasions, on foot, offered his aid as a guide up to the month of February, when he was obliged to return to England. The organisation of the expedition was all that could be wished. It arrived at Suez on November 8, and Arab attendants being prepared beforehand, they were all *en route* for the Desert by the 11th. They kept along the eastern shore of the Gulf of Suez, as far as Wady Ghurundel, and then struck inland for Jebel Musa, which they reached after a march of ten days. Tents were pitched at the foot of Aaron's Hill, all the Arabs were dismissed, and the work of the survey was commenced. So rugged was the country that it would have been hardly possible to carry the instruments to the more elevated stations, had it not been that they were aided by several Arab ibex hunters. The peaks of Ras Sufaseh, forming the northern portion of Mount Sinai, were the central point of the survey; they rise precipitously from the plain to a height of 2,000 feet. In the valleys around and on the slopes the remains of ancient cultivation and reservoirs were continually met with, and great numbers of hermits' cells: the whole country, though now a desert, must have formerly been a blooming garden. The party moved to Jebel Serral on January 1. During the survey Mr. Palmer and Mr. Holland copied more than 1,000 Sinaitic inscriptions.

#### Civil and Mechanical Engineers' Society.

At the last ordinary meeting of this Society held at their rooms, in the Whittington Club,—the President, Mr. B. Haughton, in the chair—a paper on 'Water Supply to Towns and Villages' was read by Mr. George W. Usill (Member of Council).

After tracing the history of man throughout all ages, the knowledge he has possessed both of the importance and the use of water as a means of existence, and the progress he has made in civilisation, from the earliest days, when crouching down on hands and knees and drinking from some running stream, until the present time when we find him constructing gigantic works to supply whole districts with this most important element; the author investigated at considerable length the phenomenon of rain-fall, its effect upon the earth, its amount, and the causes which produce greater quantities in some districts than others; he also expressed his opinion that the arguments that had been offered by eminent authorities, to the effect that a great many agents were at work to lessen the amount of rain-fall in England and elsewhere, in the way of improved cultivation, clearing away woods and forests, &c., were based upon good grounds. The author then treated the questions of evaporation and absorption, and their effect upon the collection of rain-fall for the supply of towns, &c., and exhibited in a tabulated form the results of experiments that have been made during the past century and a half by the most eminent scientific men of the period to determine the proportions of both evaporation and absorption, being of opinion that as yet very little had been done to enable us to lay down any fixed laws, as in every case so much depends upon the local characteristics of the district; though there is no doubt that the amount of evaporation from land surface is much less, whilst that from the surface of water is much greater, than the rainfall over a like given area. After glancing at the different works executed by our forefathers to supply themselves with water, the author passed on to the consideration of the various methods whereby towns and villages may be supplied with water, viz., from drainage or collecting areas, from rivers and streams, from springs and from wells, briefly noticing the primitive mode of collecting the rainfall from the roofs of houses, &c., as adopted by the ancient Jews and other nations, and which, in fact, is in use at the present time in many places in England and elsewhere which have not a supply of water.

With regard to drainage or collecting areas, the author stated that mountainous districts were most favourable for works of this nature, as the water falling upon the precipitous sides of valleys would have a natural tendency to flow rapidly off the ground, and therefore might be intercepted and conducted to impounding reservoirs; whilst if the locality is of a flat

nature, the expense necessary to render it available for collecting and impounding the rainfall would be considerable, added to which, great doubts might be expressed as to the quality of the water obtained. In hilly districts the water rushes rapidly off the ground before it has time to gather impurities, but if it falls upon flat ground it has greater facilities for taking up foreign matter. In every case the works should be so designed, that the rain might be collected as near the place upon which it falls as possible, as the greater distance it has to travel, the greater the chances there are of its becoming contaminated. The author then proceeded to consider the principles involved in a supply of water from rivers and streams, stating that there was no doubt that this was the most simple method of obtaining water, as was shown by the fact that people have congregated on the banks of rivers throughout all ages, and that if obtained close to the source it gave the purest water. But this was not always either practicable or advisable, because, as a rule, the source of a river at first is very small, its volume only increasing after traversing some miles, and, therefore, to take a supply of some million gallons per day from a point not far from the source would have the effect of depriving the stream of the natural tendency it has to preserve the channel and maintain a proper depth for navigation. The author repudiated the idea that rivers of large volume were much affected by the discharge of sewage, &c., into them, because they have the power of self-purification to a very large extent, adding that in the opinion of the most eminent men of the day, the water of a river, having sewage turned into it at a certain point, after travelling some few miles becomes entirely free from any impurities occasioned by its reception. At the same time the author did not for one moment advocate turning the sewage of whole districts into rivers, and he hoped the day was close at hand when this would be entirely prevented; nor did he advocate the supply of water to a town from a river if it were possible to procure it from a better source.

In consequence of the length of the paper it was deemed advisable to divide it into two parts, and thus the latter portion will be read early in the autumn session. A very interesting discussion upon the leading topics treated in the paper followed, in which the members and visitors took part. A vote of thanks was awarded the author.

On June 2, a new paper was read by Mr. Arthur Pain, C.E., on the principal building stones used in the metropolis. The author, after treating fully on all the different sorts of stone as they came into use chronologically, and illustrating his paper with a large map showing the position and distance of the quarries from the great centre, also a table compiled from various sources giving detailed information as to the weights, description, chemical analysis, prices, and other information of each sort of stone, drew the attention of the Society to the fact that nearly all the principal buildings in the neighbourhood of the various quarries were in an excellent state of preservation, while structures built out of the district and of the same kind of stone were more or less in a state of rapid decay. This, he believed, was owing to the architect, builder, and stonemason, in the first case, knowing all about the stone, and being able to reject the bad, while in the second instance they often knew nothing of its good or bad qualities, and the stone was put in without proper selection. He mentioned as an instance of the evil of non-selection the Houses of Parliament, the consequence of which was we had a building fast crumbling to decay; on the other hand, the Geological Museum, Jermyn Street, front built of the same stone, is in excellent preservation, because it was carefully selected. He did not blame architects, engineers, masters, and workmen for not knowing more about stone, because he knew the difficulty of obtaining information. In conclusion, he considered that the cause of technical education in that particular and important branch would be greatly advanced if the heads of the professions of architect, civil engineer, and the trades connected therewith, would appoint an architect, civil engineer, chemist, geologist, builder, and practical stonemason, and get the Government to make them Royal Commissioners, with the usual powers, to report on all the principal quarries in the United Kingdom, and collect specimens, such specimens and report to be placed in the public museums in every large town throughout the country. Until that was done he felt convinced that we should continue to build our public and private structures of good and bad stone mixed up together with the same miserable results.

#### Exeter Diocesan Architectural Society.

The last annual meeting of this Society was held in the College Hall, South Street, Exeter. The Ven. Archdeacon Freeman presided. The Secretary read the annual report, which stated that the Transactions for 1867 and 1868 were now ready, and the committee believed that the books would be found to be both very interesting and valuable. The effigies on the high tombs of South Devon, faithfully and most carefully drawn by Mr. Rogers, formed a very beautiful series of illustrations, and a hope was expressed that they would help to call forth a greater care and regard for the sculptures themselves than is now common. In many instances they are at present utterly uncared for. During the past year many plans have been reported on by the committee, and the grants made in the same period were eight in number. Having comparatively but a small sum to dispose of annually, the amount bestowed in such cases was not large, but the committee believe these grants are esteemed more as being tokens of good will and approval than for their money value. As the members of the Society increase, and a more regular as well as a larger income is supplied, this branch of the Society's work will doubtless increase too; the committee believing that in proportion as the real life of the church increased, so will be the work of restoration, and rebuilding, and founding new churches, this kind of work being one of the signs of renewed church life. A great change has already been brought about, but a greater change is hoped for, and it is through combined efforts like these that such change may be helped onward and directed. Nor should it be forgotten that another reason for such combinations of Churchmen may be seen in associations of an opposite and antagonistic character, when premiums for essays against church music and painted glass windows are advertised. To imply that the fine arts are not to be sacrificed to holy uses, is to imply that there are certain gifts and certain created things which are necessarily evil, or cer-

tainly will lead thereunto. The report continued: A point of great practical importance has been forced into notice in the new church of St. Michael, in this city. It is this: can any principle of acoustics be so applied that when a church is completed, it shall be found to have neither too little resonance nor too much of it, and that distinctness shall be secured which is really necessary in certain parts of the offices of the Church? Is there any principle, it may be asked, to guide us, or must we be wholly left to personal experience, or to a kind of intuitive faculty which brings things right without knowing the how or the why? It seems to be an admitted fact that a very great indistinctness is found in nearly all the services in the church referred to, and that the echo occasionally is really painful. A short pause at the end of a sentence brings back to the speaker word after word. The choir of the church is usually a large one, and though all sing loudly, the choir is not heard as it should be. Now why is this? The church is lofty, the congregation is wholly in the nave and in the broad transepts, the priests and choir are placed in the chancel, eastward of the transept, and on a level very considerably above that of the nave. The roofs are plastered in panels formed by principals, purlins, and ridge piece. There is not too little resonance, but there is either too much of it, or else the return of the wave of sound interferes at a wrong time with the wave caused by the action of the voice. Now is it not a mistake to suppose that our pulpits and choir seats cannot well be placed too high? Is it not a mistake to think that to be well heard, we may as easily be placed too much above our congregations, as well as too close to them? Sound ascends, and may not be easily so placed that the first wave of sound shall not reach the ear before the echo wave interferes with it? It is probable that the ground plan of St. Michael—that of chancel, nave, transepts, and central tower—may in some degree be the cause of the evil complained of, but it cannot be all the cause, for it is stated that the Litany, said or sung at the Fald-stool, is well heard, although the ease to the priest in speaking is seemingly less than when he is in the choir or in the pulpit. Of the plans in aid of which grants have been recently made, St. Wenn, near Bodmin, and St. Mary, Tedburn, have been completed. The last-named church is within easy distance, and would well repay a visit. The contrast between things as they were, and as they are, in this case is very marked. The work of St. Mary's, Lynton, and in the Church of the Holy Trinity at Barnstaple, has made much progress. The unusually lofty and thin-looking tower of the last-named place has been much improved by the alteration which has been carried out. The pinnacles and the battlements have been set several feet lower down. In the church itself much has to be done, but when completed it will form one of the most effective churches in point of arrangement in North Devon.—The Treasurer then stated that there were a number of subscriptions due for 1868, and that copies of the Transactions would be sent on receipt of the subscriptions.—The Rev. G. W. B. Wills moved the adoption of the report, which was seconded by the Rev. W. Gray, who stated that a similar difficulty to that referred to at St. Michael's had been experienced at the Cathedral, and was obviated by laying down cocoa-nut matting.—Mr. White said he had never been in St. Michael's, but he thought it a mistake in a building of that form to have a long-fluted open roof, even if it was broken up by rafters. He had found great advantage in the use of a wooden block pavement for the floor; it was noiseless and firm. A bright floor was apt to send the sound back. Two very important points were the proportions of the building and the arrangement of the body of the church.—The Chairman said the question was a very important one, and our forefathers seem to have understood how to overcome the difficulty in building large churches. Anyone going into St. Michael's could not fail to be struck with the extraordinary amount of flat surface, with nothing to break the sound, but those who built our cathedrals seemed to know that fluted columns would have the desired effect.—The report was adopted, as was also the treasurer's report. The officers of the society were re-elected.—Mr. White then read a long and interesting paper on the use of colour and its abuse. He urged the employment in our churches and in our schools, unions, and asylums, and other public buildings, of decorative chromatic art. An appreciation of colour was innate in nearly every man, and even the most indifferent felt the coldness and discomfort caused by its absence. Colour, he said, was used in the middle ages to such an extent that scarcely any old parish church can be touched without some traces being found of colour. Perhaps the first step to be taken to encourage the more general use of colour was advancing the education of the large class of common house painters and such as can lay but little claim to the higher branches of art education, whilst they have to exercise some of the lower functions, and frequently carry into effect designs and instructions which, without a more thorough grounding in the art of colouration, as distinguished from painting, they are able but imperfectly to enter into or understand. The chief aim of all colouring of this nature should be repose, and if brilliant colours were used, the more perfect must be the harmony, and the more careful the gradations. Proper gradations of colours and shades were of the greatest consequence towards the avoidance of harsh and startling effects. It was to a want of care in this respect that the prejudice against colour was to be attributed. People preferred to be on the safe side to risking failure in so important a matter.—The Chairman, while agreeing with Mr. White as to the advantage of judicious colouring, said what the mind craved for in religion was reality; and while he would have as much marble in the church as possible, he thought parishes would object to colouring, because it would generally be present in an unreal and meretricious form. He thought colouring was found not so much in churches of the old English style, as in those of the debased Perpendicular. Mr. White said of course he should prefer richer materials for building, but all countries were not so rich as this in building stones. In all the early English churches which he had examined he had never failed to discover traces of the original colour. Preb. Mackarness thought that when colour was used, there must have been more local knowledge on the subject. A vote of thanks to the Chairman brought the meeting to a close.

#### The Society of Engineers.

The members of the Society of Engineers selected for the first of their trips in the present year to engineering works of note—the Limehouse Basin

Improvement Works. The improvements comprise a new ship entrance lock having two compartments. The length of the outer lock is 120 ft., and that of the inner one 230 ft., the width at the top being 60 ft. There are three pairs of lock gates, which are made of wrought iron, the lower portion of the gates being watertight. A very fine iron swing bridge 129 ft. long and 25 ft. wide carries a roadway across the lock near the river end. This bridge, the gates of the locks, the capstans, and the cranes are all worked by hydraulic power, the machinery for which, together with the whole of the ironwork, was supplied by Sir W. Armstrong & Co. The quay wall facing the river is 220 ft. in length; a timber jetty running out 54 ft. into the river is to be constructed. From the Limehouse Basin, the party proceeded to inspect the new extension works of the West India Docks; Mr. Hawkshaw, engineer; and subsequently the engineering works of Messrs. Westwood, Baillie, & Co., London Yard, Millwall, where they found much to interest them in some bridgework and screw piling for India. The members dined together in the evening at the Brunswick Hotel, Blackwall.

#### South Midland Institute of Mining, Civil, and Mechanical Engineers.

This new combination of mining, civil, and mechanical engineers, whose head-quarters are at Wolverhampton, was inaugurated at the School of Art there, on the 7th instant, by an address from the President, Mr. Henry Beckett, F.G.S. The rules are, generally speaking, founded upon those of the Northern Institute of Mining Engineers, and, like that Institute, seek the co-operation of all engineers in all parts of the country who are interested in the objects. Those objects are defined to be to enable its members, comprising mining, civil, and mechanical engineers, and other persons connected with or interested in mining, to meet together at fixed periods, and to discuss the means for the ventilation of coal and other mines, the winning and working of collieries and mines, the prevention of accidents, and the advancement of the sciences of mining and engineering generally. Papers are to be read, which, with the discussions upon them, are to be printed, as transactions.

The President's address was a lengthy document. Among other things he said:—When igneous rocks occurred in coal-fields, as marvellously developed in South Staffordshire and Shropshire, their singularly intrusive nature and ever-varying characteristics were especially deserving of study, as well as their atmospheric action on the coals and associated strata. In few other districts in the earth, perhaps, were those troublesome rocks more interesting to men of science, though sadly deteriorating in their effects, and fearfully expensive to sink through and otherwise traverse. Frequent outbreaks were found throughout the coal-fields, but none more remarkable than that explored and approaching exhaustion at Powk Hill, on the Earl of Lichfield's estate, at Bentley, near Walsall, which, until recently, was deserving of the most careful consideration, not only from its singular vertical as well as radiating columnar structure, but as associated with a tremendous east and west cross-fault which defined a most important change in the mineral constituency of our local coal-field. Great perplexity existed as to the period of igneous intrusion, and whether one or more centres of eruption may have existed in the South Staffordshire coal-field; as also whether or not such disturbance was contemporaneous with like intrusive action in the Shropshire, Forest of Wyre, and Warwickshire coal-fields. These difficulties would probably be removed if the members obtained accurate data connected with these localities, showing the relative position of undoubted central upheavings, the line base of the elongated horizontal expansions, and the accordance of their upward ramifications combined with the reciprocal peculiarities of the component rocks. Basaltic dykes were occasionally met with, and should be narrowly watched, as well as the localities where the metamorphic effects might appear to have been most powerful. In closing this exciting subject he must tell them candidly that he did not anticipate that any direct and unceasing igneous connection would be discovered between the four coal-fields alluded to, although the upheavings may have been and probably were simultaneous. He believed the outer faults in such district would limit the extent of the igneous action connected therewith—a fact observable near Essington, from which he induced the director of the Government Geological Survey to publish a new edition of that portion of the South Staffordshire coal-field, embracing also an analogous change on the opposite side of the same coal-field originally coloured as Permian. The address also dealt with the question of the ventilation of mines.

#### NEW BUILDINGS AND RESTORATIONS.

**The New Charing Cross Theatre.**—Few would recognise in the little theatre in King William Street, Strand, opened to the public on the 19th inst., the site formerly occupied by the Polygraphic Hall, made famous by Mr. Woodin. Little more than the walls of the original building are left standing. About the size of the Strand, the new house, probably, has not more seating accommodation than the Royalty, which may be accounted for by the absence of a gallery in the present case, the auditory consisting of stalls, pit, dress circle, upper boxes, and private boxes. The seats are covered in light blue leather, the box hangings and curtains are of blue satin damask with gold fringe, and the proscenium drapery in the same style, looped up with cords, sustained by female figures. The decoration is generally white and gold, raised on a groundwork of a salmon-pink colour, whilst the artistic portion and panelling, medallions, &c., are more predominant than usual. The figure panels are tasteful, and owe their origin to the brush of Mr. T. Ballard. An ornamental dome of light perforated tracery occupies the centre of the ceiling. The lighting of the auditory is by a powerful sun-burner suspended from the centre of the dome. The act drop, representing 'The Mall' in St. James's Park, in the time of Charles II., has been painted by the well-known artist, Mr. J. E. Meadows. To Mr. C. N. Foster is due the constructive portion of the work; the *carton pierre* is by Messrs. White & Co.; the design, decorations, fittings, &c., by Mr. E. W. Bradwell; Arthur Evers, Esq., architect, having had the entire supervision of the whole works. The size of the theatre is about 30 feet from front to front of box rest; the height from floor to ceil-

ing about 40 feet; and a proscenium opening of 20 feet. All the staircases, &c., are either in stone or concrete, and in case of fire ample accommodation has been provided for speedy exit from every portion.

**Alfreton.**—The restoration of the parish church at Alfreton is very near completion. All the seats are put in, and the interior is decorated. It is expected to be ready for opening by July 20 next. It will be large enough to seat 500; and is to have a new organ.

**Opening of a New Baptist Chapel.**—On June 15, a new Baptist chapel, situate in Wellington Street, Stockton-on-Tees, was opened for divine worship. The building has been in contemplation for some time, and in November last was commenced. The plot of ground which the premises occupy measures 69 ft. by 68 ft. The structure is of the Classical order of architecture, and built principally of brick, with stone facings. The chapel in the interior measures 60 ft. by 40 ft.; and the school-room, which is beneath the chapel and approached from the back of the building, measures 40 ft. by 30 ft., and is 11½ ft. high. The pews are arranged with two aisles, with accommodation for 350 persons. There is no gallery at present, but the building is so constructed that one can be added at a future time if needed. The architect is Mr. George Fletcher, and the contractor Mr. John Craggs. The entire cost of the building will be about 1,650*l.*, towards which about 1,100*l.* has already been raised.

**Opening of the Grand Pump Room Hotel, Bath.**—Of the exterior it will probably be sufficient to state that it is in harmony with the Stall Street elevation of the Grand Pump Room and its colonnades. Entering the hotel by a flight of steps, to be guarded by a pair of lions, and through the large plate glass doors into the Hall, we find the manager's room immediately on our left, the grand staircase in front, and passages leading to the right and left. This hall is paved with encaustic tiles, some of which are glazed, laid to pattern; and is warmed by a double steam apparatus, which serves also as tables. Taking the passage on the left, we have a private drawing-room and the commercial room, with the communication to the baths; and the opening to the hydraulic lift. The lift will be sufficiently spacious to accommodate a wheelchair, which, with its occupant, can then be raised from the level of the baths to any floor of the hotel. Pursuing the passage to the right, and passing the ladies' coffee room, we enter the public coffee-room, the largest room in the building, occupying the whole of the northern wing, and which is 54 feet long and 21 feet wide, exclusive of a recess 20 feet long by 14 feet wide. It has two fire-places, and is lighted at night by four gaseliers of elegant design (by Wingfield), and the same pattern is to be observed in the more important suites of rooms. Attached to the coffee-room are well-fitted lavatories, and a washing-up room for glasses, &c. The mantel-pieces of this, and of all the principal rooms throughout the building, are of dove marble, relieved by red Devon, and form the least attractive features of the interior. Under this apartment is a billiard room; and adjoining are the needful conveniences, including a closet heated by steam. Close at hand is a smoking room, having a coved ceiling with massive cornices—in which provision is made for ventilation—and a cemented floor. The works have been executed under the direction of Messrs. Wilson and Wilcox, architects. The opening dinner took place in the Coffee-room of the Hotel on June 16.

**Re-opening of Pensford Church.**—The parish church of Pensford, Somerset, was re-opened a few days since. It has been rebuilt, on the old foundations, of local stone, with Bath freestone dressings, in the decorative style of the fourteenth century. The church now possesses a very neat little north porch. A series of arches divides the chancel and nave from the south aisle, and one great peculiarity of the place is that it does not possess what is known as a constructional chancel. The windows, which were previously of a character quite opposite to the original design, have been harmonised with that of the fourteenth century, in accordance with the rest of the building. The roofs are of Bath stone, of the 'Somersetshire waggon head' or 'cradle form,' the timbers being exposed, while those of the chancel are richly coloured and gilded. The chancel screen is composed of low stone, surmounted by ornamental ironwork. The floor of the church has been raised, and is now paved with tiles, the chancel floor being covered with Maw's encaustic tiles.

## ITEMS OF NEWS

FROM OUR

SPECIAL CORRESPONDENTS AND OTHERS.

### Irish Antiquities.

In that division of the South Kensington Museum chiefly dedicated to loans, has been lately exhibited a small but highly interesting group of objects recently found by digging in a fort near Ardagh, on the property of Earl Dunraven. As, owing to previous engagements on the part of their noble owner, their period of exhibition in London must be very limited, it may be well to draw the attention of our readers to these objects, all of great interest, and one at least of which may be fairly termed unique. They are five in number, of which four are *fibulae* or brooches of the white metal (chiefly composed of silver and lead) known under the designation of white bronze. Three of these resemble in form the well-known Tara brooch; but even the best of the present specimens, though rich in interlaced work and of unusual size, is in delicacy of workmanship far inferior to that wondrous relic of past civilisation. The fourth *fibula* is of another type common among Irish antiquities, being penannular, with ends formed by the arbutus berry. The fifth object of this remarkable *find* deserves a more detailed description, as well from its beauty as from its extreme rarity. It is a two-handled goblet, possibly a chalice, although on this point authorities are at issue. The material is the white bronze above-mentioned; the form a simple and graceful segment of a sphere, with solid semicircular handles. Both the lip and foot have been set with flat stones or amber, and around the external rim is a ring of interlaced ornament with studs of opaque enamel. Similar bosses of opaque enamels form part of the decoration below each handle; but it is noteworthy that all the enamels, though

appearing on a casual inspection to be 'cloisonné,' are not really so: that is to say, they have not been applied to their respective *cloisons* in a state of fusion, but have been inserted when cold. This peculiarity, which was observable in the jewellery of an Egyptian queen, found by M. Mariette at Memphis, and shown in the International Exhibition of 1862, must have added greatly to the difficulty of workmanship, the mechanical accuracy of which is truly marvellous. The interlaced work surrounding the neck is also of surprising sharpness; and in fact the whole goblet is so incomprehensibly *new* in appearance, that at first sight one could hardly accord belief to its untampered antiquity, but that fortunately all doubt is set at rest by the declaration of its noble owner that it has been merely cleaned, and does not contain an atom of new work, except that one small piece of lead was quite decayed and has been replaced. On the outside of the bowl are very delicately engraved the names of the Twelve Apostles, in a peculiar rectangular Gothic letter, similar to that used in the Book of Durrow; and this fact aids us in ascribing to the goblet the date believed to belong to the book, viz., the seventh century. The conscientious care of the artist has led him to complete even the under part of the base with filigree work and a central crystal. Notwithstanding, however, the sacred character of some of the accessories, it may be permitted to doubt whether this vessel were actually a sacramental chalice. If it were so, its large size warrants us in assuming that its use must have been anterior to the refusal of the cup to the laity, while its numerous ornaments and consequent difficulty of purification show a less scrupulous consumption of the sacred elements than is now so strenuously insisted on by the Church of Rome. But we may safely leave doctors to disagree on these æsthetic-religious points, and content ourselves with admiring the delicacy of taste and perfection of workmanship which characterise this remarkable specimen of ancient Irish art.

### Trafalgar Square.

The designs of Mr. Sang, the architect, at the Admiralty Board of Works for the proposed Army and Navy Memorials in Trafalgar Square, include suggestions for the improvement of this area. Mr. Sang would make use of the water supply of the existing fountains, and substitute two memorials, the one in commemoration of the valiant deeds of the royal army, and the other of the royal navy, of the Victorian period. The memorial consists of two large square fountains of well-proportioned dimensions, the sides of the basements of which are richly moulded and rest on a triple plinth, all of Sicilian marble, enriched with panels, intended to receive the names of the officers and men who fell or distinguished themselves at the various actions in their country's service. Out of one fountain rises a grand massive block of white marble, with four conspicuous high reliefs in antique bronze, representing the deeds of valour of the British warriors. This colossal pedestal is surmounted by a group of war trophies, and with its candelabra-shaped base of exquisite design forms the footing and hold of a Venetian mast or standard-pole, of a height and outline which leave the occupants of San Marco in point of grace and daring far behind. One of the most telling of the suggestions in the treatment of the square is the necessity of removing the dismal and squat dead granite walls and the substitution of terrace balustrades, with a grand flight of steps open along the entire width of the northern side of the square, immediately facing the National Gallery.

### Pictures Purchased for the National Gallery.

At the sale of the Koucheleff-Besborodko collection at the Paris Mart the other day, a magnificent Ruysdael, known as 'The Sluice,' was purchased for our National Gallery for the sum of 26,800 francs, or, with the addition of the usual fees, about 1,125*l.*, which is not considered by connoisseurs to be more than it is worth.

It must also be noted that a Greuze, 'L'Ermite,' was purchased for the Empress for the sum of 55,500 francs (2,220*l.*!) while a Murillo, a Rembrandt, a Paul Veronese, and a magnificent Paul Potter were bought in at sums ranging from 700*l.* to 1,980*l.*

At the sale of the collection of the late connoisseur the Marquis de Muisson, Greuze's 'Madeleine blonde' was purchased for the National Gallery for 49,000 francs, or, with the fees, 2,058*l.* It is certainly right to have good examples of the French masters in our public gallery, but 2,000*l.* seems to us a very long figure for a Greuze Madeleine. The same painter's 'Madeleine brune' fetched 33,000 francs; the study of the head of the 'Madeleine blonde,' the relatively enormous sum of 9,999 francs; and the first sketch of the famous 'Cruche cassée' 2,600 francs.

In the same collection was a famous work by Pater, 'Le Concert Champêtre,' which sold for 100,000 francs (4,000*l.*); a Watteau, 'La Toilette,' purchased by the Marquis of Hertford for 13,000 francs; and the portrait of a Lady, by Sir Joshua Reynolds, which fetched 4,050 francs (162*l.*).

### The Carey Street Site.

It is understood that overtures having been made to the Chancellor of the Exchequer for the purchase of the seven acres of land known as 'the Carey Street site' of the new Courts of Law, the negotiations have been suspended until the Bill for the acquisition of the new ground in Howard Street has been sanctioned by Parliament. The London and North-Western Railway Company are, we believe, not indisposed to treat for the site as a great central terminus to communicate with the Metropolitan District system.

### New South Wales.

Our Sydney advices of April 25 state that nothing has yet been determined with reference to the design for a statue to 'Captain Cook,' to be erected in Hyde Park, Sydney; but since the colony lacks sculptors, it is probable that the commission will find its way to England or to Rome.—The keystone of the central arch of the new Post Office has also been laid, with great demonstrations of rejoicing.

### Building at Walsall.

We hear that a considerable number of residences will, under the auspices of the Lichfield Building Society, be shortly erected on the Walsall Road. The demand there at present for houses in the neighbourhood gives great hope that it will prove a profitable speculation.



## General.

The Tower Subway has now passed the nearest approach to the bed of the river, the top of the tunnel being 23 feet below the bed, and the engineer, Mr. Peter W. Barlow, jun., reports that at the present rate of progress the tunnel will reach high water mark on the Surrey side in ten weeks. The ground, it is said, is so dry that the New River Company's water laid on the works has to be taken from the shafts for the cement used in the tunnel. Air is supplied to the men by a steam engine at the shafts. Communication between the men at the face of the works and the top of the shafts is effected by an electric telegraph laid down for that purpose.

**Proposed Workmen's Exhibition of 1870.**—It is intended to hold this exhibition in the Agricultural Hall, Islington, in June next year. It is suggested also that local exhibitions be first held in each district, and that, to turn the event to the utmost possible advantage, the profits of such local exhibitions be set aside as a fund for the establishment or for the support of Schools of Art and Design, or for Night Classes for the teaching of those sciences which are connected with the various industries, and form the necessary groundwork of technical education. In addition to the ordinary purposes of other exhibitions, it is proposed that this should serve as far as possible the purpose of promoting technical education. In those manufactures in which division of labour prevails, workmen will be invited to exhibit specimens of that particular branch of work in which they are severally engaged. In the absence of those means which Continental artisans possess of improving themselves in their peculiar crafts, this plan of stimulating the productive capabilities of English workmen may, it is hoped, prove successful.

**Restoration of Doulting Church.**—This ancient edifice, near Shepton Mallet, is about to be restored to its original beauty. It was built about 600 years ago, on the site of a former church, begun in 960, at the instigation of St. Dunstan, who visited Doulting in that year and persuaded the people to replace the old wooden church by one of stone, to be dedicated to St. Aldhelm, bishop of Sherborne, abbot of Malmesbury, and first bishop of Salisbury, who died where Doulting church now stands. The total cost of the work will be about 4,000*l.*, and will occupy about two years. In the mean time divine service will be held in the school-room. Major Paget, M.P., gives 1,000*l.*, and the Rev. J. S. H. Horner, the patron of the living, gives a similar sum.

At the last meeting of the West Ham Local Board of Health it was resolved that the footpaths in Bridge Road and Windmill Lane be paved with blue and red bricks, by way of experiment.

A large gymnasium for the use of the troops is being erected at the Huts Encampment, Pembroke Dock. The cost is expected to be about 1,000*l.*

**Court of Common Council.**—At the meeting of the Court of Common Council on June 17, the Lord Mayor presiding, the chairman of the City Lands Committee (Mr. H. A. Isaacs) brought up certain reports in reference to the purchase of property unfit for human occupation, and the erection of improved dwellings for the working-classes on the site. The subject was referred to this committee for consideration at the time of the last outbreak of cholera. The committee reported that as in the meantime the Artisans' Dwelling Act had been passed to meet this very evil, and as the Commissioners of Sewers had been appointed to carry out that Act, they considered the reference to them ought to be now discharged. Mr. J. T. Bedford strongly opposed this course, and thought the committee, considering the magnitude of the evil, had not risen to the occasion. Some discussion took place, but eventually the reference to the committee was discharged.

**Metropolitan Association for Improving the Dwellings of the Industrial Classes.**—The twenty-fifth annual meeting of the shareholders of this association was held on the 17th inst.; Lord C. Hamilton, M.P., in the chair. The Chairman, in moving the adoption of the report, took a retrospect of the history of the association during the past twenty-six years. They were told, at the outset, that it would not prove a success; but at the present time they had no less than 3,500 occupants of their tenements. The chairman likewise congratulated the society on the altered state of things from the time when they were compelled to spend 1,800*l.* on a charter, which was so much waste money, to the present time, when Government was advancing them money on easy terms. Their thanks were due to the Marquis of Westminster, who had not only encouraged building operations on his estate, but had also lent them money on favourable terms. That they had not been successful with regard to their tenements for single men was not their fault; and in future they would invest their capital entirely in family lodging-houses. His lordship concluded by drawing a very favourable picture of the future prospects of the association.

**Opening of Southwark Park.**—Southwark is a fortunate borough. It has for its representatives the First Commissioner of Works and Mr. John Locke, while the chairman of the Metropolitan Board of Works has always been particularly connected with that part of London. All three took a part in the opening ceremony of Saturday, the 19th inst. The sanction of Parliament was obtained for this undertaking in 1864 by means of an Act which provided for the purchase of about 62 acres of land in the parish of St. Mary, Rotherhithe. The Bill empowered the Metropolitan Board of Works to form and maintain a park, and also to sell or lease such portions of the land as they might not require for the purposes of a park. The land acquired by the Board under that Act is situated near the Spa Road railway station, and between Paradise Row, Rotherhithe, the Deptford Lower Road, and Rotherhithe New Road. It consists of about 60 acres, of which some sixteen are reserved for building sites. The rest has been laid out as a park. The cost of the freehold of the land was about 911*l.* per acre; the purchase of freehold and leasehold interests involved an expenditure of 68,398*l.*; the expense of entrance lodges, gates, enclosure railings, formation of roads, drainage, and planting amounted to 20,710*l.*; professional and other charges and wages to 5,380*l.*; the inevitable 'in-

cidental' to 722*l.* 19*s.* 2*d.*—making a total of 95,162*l.* and some odd shillings and pence. Mr. Vulliamy is the superintending architect. To such a neighbourhood as that lying between Rotherhithe and Deptford the place must prove a great boon.

### APPOINTMENTS VACANT.

**INDIA.**—July.—Forty Appointments in the Engineer Establishment of the Public Works Department in India will shortly be open to public competition. W. T. Thornton, Secretary, Public Works Department.

**ISLE OF ELY.**—July 5.—A Resident Surveyor, Inspector of Nuisances, Superintendent of Highways, and Collector of the Rates for the District of the March Local Board of Health. Mr. T. T. Elliott, Clerk, March, Isle of Ely.

**KENDAL.**—Borough Treasurer to the Corporation, of Kendal, Westmorland. Salary 50*l.* per annum. Mr. Thomas Harrison, Town Clerk, Kendal.

**PESTH.**—As Assistant or Resident Engineer, to Superintend Works of Pipeage, Masonry, and Pumping Machinery. A knowledge of the German language desirable. Salary, from 400*l.* to 600*l.* per annum. W. Lindley, Engineer-in-Chief, Pesth.

**COCKERMOUTH.**—July 10.—From and after August 1 next, Surveyor and Inspector of Nuisances and Lodging Houses for the district of Cockermouth, at a salary of 50*l.* per annum. Mr. John Fearon, Clerk to the Board, Local Board Office, Cockermouth.

**WILLESDEN.**—Sewer Authority.—June 29.—Inspector of Nuisances. Salary 40*l.* per annum. Mr. W. A. Toock, Vestry Clerk, Edgware.

### COMPETITIONS OPEN.

**ARRAS, FRANCE.**—Architects are invited to send in designs for a Church to be erected at Arras. The building is to be 40 metres long, without the clock-tower, and 18 metres wide, and it is to have three aisles, three entrances, to be approached by a flight of five steps, and to be surrounded entirely by railings 1½ metre high; sub-basement of Belgian stone. The plans are to include a general one of the entire building, a fully-detailed description, and a careful estimate, with such perspective views and details as the artist may think fit to add to the former. The style of the building is required to be 'Decorated Roman of the last period'; and the sum to be expended, including commission, is 80,000 francs (3,200*l.*). The authorities do not undertake to adopt the prize plans, in which case the author of the best and second-best designs will receive 600 francs and 300 francs respectively. It is added, that the columns are to be of hard Belgian stone, and the rest of the building of Credi stone; the vaultings are to be real, and not in ceiling, or of wood with visible ties. The jury is composed of the Bishop of Arras, the Maire, a Canon, two members of the Municipal Council, an Engineer, the Secretary-General of the Museum, and the Vice-President of the Council of the Prefecture. The designs are to be sent by the end of July.

**BELGIUM ACADEMY OF ARTS AND SCIENCES.**—For best enquiry (essay) and report on the period at which Architecture in the Low Countries became affected by Italian influences. Premium, 1,000 francs, about 40*l.*

**BRADFORD.**—September 1.—Competitive Designs for the new Bradford Town Hall. To the Architect whose design is selected, 5 per cent. commission and the execution of the work; 2nd best, 200*l.* premium; 3rd, 100*l.* Mr. W. T. McGowan, Town Clerk, Corporation Offices, Bradford.

**BRUXELLES, BELGIUM.**—A competition is announced for the production of the best Water Meter. The inventor of the instrument offering the greatest advantages is to receive a reward of 200*l.*; the 2nd best, 120*l.*; and the 3rd, 80*l.* The Meters are to be sent in to the Secrétaire de l'Administration Communale, Hôtel de Ville, Bruxelles, before 12 o'clock on October 31 in the present year.

**CONSTANTINE, ALGERIA.**—Three prizes, of the value of 3,000, 2,000, and 1,000 francs, are offered for the best designs for a theatre to be built at Constantine. Programmes of conditions, accompanied by a sketch, may be obtained either at Constantine, at the office of the Société Générale Algérienne, No. 13 Rue Neuve-des-Capucines, Paris, at the Prefecture of Lyons, or the Mairies of Marseilles, Bordeaux, or Orlans.

**CORPORATION OF MANCHESTER.**—June 28.—For Designs and Tenders for the Internal Decoration of the Hulme Town Hall. Joseph Haron, Town Clerk, Hulme Town Hall.

**DONCASTER.**—September 1.—The Building Committee for proposed new Wesleyan Chapel and Schools at Doncaster require Designs. The best to receive 50*l.* premium; second best, 25*l.* Mr. R. Wiltons, Sec., Magdalen, Doncaster.

**GLAMORGAN.**—July 1.—Plans and Specifications for Restoration of Parish Church of Llantrisant. Rev. J. Powell Jones, Llantrisant Vicarage, Pontypridd.

**LEYDEN MUNICIPALITY** invites Designs and Models from Sculptors of all countries for a Statue of Boerhaave, in the costume of Professor of Leyden University. September 1.

**LONDON.**—June 26.—London and County Land and Building Company (Limited).—Plans of the best and most profitable way in which to arrange in building sites their ground in Camomile Street, City. First premium, 75*l.*; second, 50*l.*; third, 25*l.* Mr. B. B. Looker, 14 Clement's Lane, E.C.

**PHILADELPHIA, PENNSYLVANIA, U. S.**—September 1.—For Designs, Specifications, and Estimates for New Public Buildings. First premium, 400*l.*; second, 300*l.*; third, 200*l.*; fourth, 100*l.* For particulars, to H. C. Pugh, Secretary of Board of Commissioners, S.W., corner of Walnut and Fifth Streets, Philadelphia.

**ROYAL ACADEMY OF ARTS.**—Burlington House. For the best Painting in Oil, or Model and Design in Painting, Sculpture, and Architecture, the Gold Medal and the Discours of Presidents Reynolds, West, &c.; and for the best Copies of Drawings, &c., the Silver Medals, &c.

**SAINT JEAN D'ANGELY, FRANCE.**—The authorities of St. Jean d'Angely have decided on completing the Church commenced in the town by the Benedictines, but of which the works were stopped in 1789. Estimate 200,000 francs (8,000*l.*); the architect's honorarium to be equal to 4 per cent. The competition is confined to architects of Charente and the four adjoining Departments.

**SALISBURY.**—July 1.—Salisbury Municipal Charities.—The Building Committee are desirous of receiving Designs for Rebuilding Almshouses, for six aged Married Couples, and a Nurse or Matron. 10*l.* for the selected design. Mr. T. Harding, Canal, Salisbury.

**VIENNA, AUSTRIA.**—This Municipality require Designs, Plans, Estimates, &c., for the Erection of a New Town Hall. Open to all Europe. For Particulars, Austrian Consul-General, Paris.

**TOULOUSE, FRANCE.**—The Consistory of the Reformed Church of Toulouse invites architects to send in Designs for a Protestant Temple to be built in that town. The plot measures about 980 square metres. The church is to contain from 800 to 900 seats. Four places to be contained in the square of 1 m. 30 c. (51½ inches). Attached to the Church is to be a Consistory Library, and Porter's House. The drawings required are:—A General Plan, and Elevations of the Façades, Longitudinal and Transverse Sections on the scale of 0·01, a full Description of the Plan, and detailed Estimates of the Work. The total cost of the edifice, including Joiners', Iron, and, all other work, so as to render the church fit to receive its furniture, is not to exceed the sum of 150,000 francs (6,000*l.*). The Plans are to be sent in to the President of the Consistory of Toulouse before July 31, who will also give all desired particulars. The architect whose plans are placed first by the judges will be entrusted with the erection of the building, and receive, by way of honorarium, 5 per cent. on the total expenditure, up to 150,000 francs. If the amount exceeds that sum, the architect will have no commission on the excess. The author of the second-best plan to receive 1,200 francs; and of the third, 800 francs.

**LILLE, FRANCE.**—The Society of Arts, Science, and Agriculture, at Lille, invites architects to send in Plans for an Edifice to be erected in that town, for the double-purpose of exhibitions and public fêtes. The plot of ground traced out measures from 177 to 179 metres in length, by 87 to 89 metres in breadth. One of the rooms is required to be of sufficient size to contain 3,000 persons at a ball or other party, and another is to be capable of seating 1,500 people. The candidates are left at complete liberty with respect to the style and arrangement of the building, but the cost is not much to exceed the sum of 80,000*l.* The drawings required are two Plans, two Sections, and the *Local* Façade, to the scale of 0·005, and a finished view of the Main Façade, with a Descriptive Note; but the candidates may add what other drawings they please. The prize is 1,000 francs. A certain number of plans are to be selected and exhibited for twenty days. There are no conditions mentioned relative to the Construction of the Building, and, in fact, no reference made to a practical result. The drawings and documents are to be sent to the Secretary of the Society, at the Hôtel de Ville, by October 15 at latest.

# INDEX.

## Articles—

Abroad, Notes from, 199, 266, 314  
 Academy Catalogue, on Motto of the, 256  
 Accident, Great Eastern Railway, 165  
 Accidents to Buildings, 55  
 Acoustics, Architects and, 245  
 Air, good, is a supply possible in large cities, 224  
 Aix-la-Chapelle, Cloisters, 234  
 All Saints' Church, Upper Caldecote, Bedford, 66  
 Amateur Criticism, 63  
 Among the Bronze Monuments in Westminster Abbey, 292  
 Amsterdam Exhibition, the, 281  
     New Canal at, 22  
 An Architect, on the Duties of, 237, 249, 272  
 Ancient Lights, the Law and Science of, 804, 819, 328  
 Ancient Maps of Paris in the new Historical Museum, 317  
 Ancient Metal Work, 318  
 Annual Exhibition of Works of Art, Paris, 257  
 Antill's Stench Trap, 297  
 Archaeology, Irish, the Founder of, 150  
 Archaeological Society, the London and Middlesex, 49  
 Architect, on the Duties of an, 237  
     — or Engineer, can he withhold his Certificate? 102  
 Architects and Acoustics, 245  
     — and Engineers, Co-operation of, 4, 19, 38  
 Architectural and Engineering Progress made during the year 1868, 2  
 Architectural Association's Screen at the Exhibition, Conduit Street, 253  
 Architectural Association, 49, 91  
 Architectural Drawings, 24  
     — at the Institute of Painters in Water Colours, 215  
 Architectural Education, 75, 145, 157, and the Architectural Profession, 62  
     — in Paris, 138  
     — state of, 271  
 Architectural Examination, Voluntary, 189, 207  
 Architectural Exhibition, 244  
     — Drawings sent in to the forthcoming, 200  
     — Society, 29  
     — Society's Soirée, 245  
     — the Sketches of the, 314  
 Architectural Museum, the, 287  
 Architectural Publication Society, 297  
 Architecture in Belgium, 105  
 Architecture and Engineering, 154  
     — Art and, in Parliament, 173  
     — at the Royal Academy, 242  
     — Ceramic, 187  
     — Engineering, and Art, in Egypt, History of, 74  
     — Homeric, 88, 102  
     — in Manchester, 189  
     — Street, in Carlisle, 234  
     — Villa and Cottage, 318  
 Art-Exhibition, International, at Munich, 245  
 Art and Architecture in Parliament, 173  
 Art Exhibitions, 24  
 Art of the Goldsmith, the, 151  
 Art, the Coming School of, 318  
 Arthur Aschitel, Memoir of, 63  
 Art Union of London, 250  
 Arthur's Church, Renovation of, 259  
 Artists', Female, Exhibition, 91  
 Artists' General Benevolent Institution, 258  
 Art v. Architecture, 322  
 Aschitel, Arthur, Memoir of, 63  
 Associated Arts' Institute, 67, 80  
 At the New India Office, Our Rambler, 7, 23  
 At Runcorn, Our Rambler, 202  
 A Voice of Warning from Father Thames, 325  
 Balliol College, Oxford, 14, 46  
     — the New Buildings of, 6  
 Beasts, the Evangelistic, 179, 207  
 Beauvais Exhibition, the, 245  
 Belgium, Architecture in, 105  
 Belgavia, Our Rambler in, 89  
 Belleek Porcelain, 215  
 Berlin Cathedral Competition, 259, 206  
 Bibliothèque Impériale, Paris, New Reading Room of the, 40  
 Birmingham, New Bank Buildings in, 29  
     —the first Clubhouse at, 245  
 Bishopsmyton Parish Church, 293  
 Blackfriars Bridge, New, 114, 306  
 Block Houses, 164

## Articles—Continued.

Boxgrove Church, Sussex, 164  
 Bourges, South Door, 259  
 Bradford, the Oastler Monument at, 281  
 Bridge over the Moldau, 7  
 Bridges, Concrete, 24  
 Bridgnorth, St. Bernard's, 303  
 Bristol Cathedral, the North Porch, 104  
 British Architects, Royal Institute of, 17, 48, 285  
 Building Contracts, 66, 76, 90, 144  
 Building Contracts, Conditions of, 117, 131  
     —the Legal View, 317  
 Buildings, Accidents to, 55  
     — Metropolitan, Bill, 105  
     — on the Thames Embankment, 142  
 Building Trades' Dispute, the, 247  
     —the Strikes in the, 217, 305  
 Built to Sell, 168  
 Caissons for Pier-building—New Bridge at Copenhagen, 151  
 Can an Engineer or Architect withhold his Certificate, 102  
 Capitals, 115, 131  
 Carey-Street Site for a Palace of Industry, 45  
 Carisbrooke Church, Isle of Wight, 154  
 Carlisle, Street Architecture in, 234  
 Cathedral Competition, the Berlin, 259, 306  
 Cathedral of Santiago de Compostella, West Doorway, 247, 294  
 Cathedral of Tournai, 20  
 Cathedral Restoration, Salisbury, 245  
 Cause of Colliery Explosions, the, 188  
 Ceramic Architecture, 137  
 Chilmark Quarries of Wiltshire, the, 260  
 Chicago, House-Raising in, 285  
 Chicago Waterworks, the, 118  
 Chimney-Piece of the Town-Hall of Courtrai, 90  
 Christ Church Cathedral, Dublin, 31, 78, 154  
 Church Benches, 224  
 Church of St. Pierre, Lisieux, South Transept, 142  
 Church Restoration, 208  
 Civil and Mechanical Engineers' Society, 286, 333  
 Civil Engineering, on Architecture connected with the Structures of, 321  
 Civil Engineers, Society of, 50  
 Cleaning or Restoration, 289  
 Cloisters, Aix-la-Chapelle, 234  
 Club House, new Conservative, 238  
 Colchester, Fall of a Spire at, 23  
 Colliery Explosions, cause of, 188  
 Colliery Explosion, Fendale, 317  
 Columbia Market, Bethnal Green, 235  
 Coming School of Art, the, 313  
 Committee, Lord Elcho's, 243  
 Compensation, Practical, 25  
 Competition—Eaton Suburban Church, Norwich, 40  
 Competition, Botherham Hospital and Dispensary, 247  
 Concentration of the Courts of Law, 287  
 Conditions of Building Contracts, 117, 131  
     — Contract, 178  
 Conservative Club House, new, 238  
 Contemporary Art on the Continent—Exhibition of French and Flemish Pictures: Sixteenth Season, 187  
 Contracts, 97  
 Contracts, Building, 66, 76, 90, 144, 317  
 Contract, Conditions of, 117, 131, 178  
 Co-operation of Architects and Engineers, 4, 19, 38  
 Cork Cuvierian and Archaeological Society, 332  
 Cosmo III., Retrospective Review of the Travels of, 176, 303, 329  
 Country and Suburban Residences: Examples, 318  
 Court, Engineers at, 246  
 Courts of Law, concentration of the, 287  
 Criticism, Amateur, 63  
 Decoration, Dress and House, 321  
 Decorations, M. Lumet's, 190, 234  
 Dispute, the Building Trades', 247  
 Docks, New, at Greenock, 330  
 Doncaster Parish Church, 302  
 Double Villa at Langside, Glasgow, 318  
 Dover Castle, 161  
 Drainage of the Thames Valley, 140  
     — of Towns, the, 268  
 Drawings, Architectural, 24  
     — at the Institute of Painters in Water Colours, 215  
     — sent in to the forthcoming Architectural Exhibition, 200  
 Dress and House Decoration, 321  
 Dublin, Christ Church Cathedral, 31, 78, 154

## Articles—Continued.

Dudley Gallery, the, 79, 129  
 Dumfriesshire, Newtonaird House, 131  
 Dwellings, Improved, for the Industrial Classes, 192, 202  
     — Swiss Lake, 16  
 Education, Architectural, 75, 145, 157  
     — Architectural, in Paris, 138  
 'Elements of Architecture,' Sir H. Wotton's Review of, 34, 52  
 Embankment Site for the Law Courts, the, 213  
     — the, is it too small or not? 86  
 Encouragement of the Fine Arts, Society for the, 321  
 Engineering, Architecture and, 154  
     — College, the, Poonah, 119  
     — Sanitary, 9, 21  
 Engineer or Architect, can he withhold his Certificate? 102  
 Engineers at Court, 246  
 England in 1669: a Retrospective Review of the Travels of Cosmo III., 176, 303, 329  
 English School of Art, on the Progress and Present Condition of the, 51  
 Estimates for Public Works in the Present Year, 316  
 Evangelical Doctrines, the, 179, 207  
 Examples of, and Notes on Residences Recently Erected, 318  
 Exeter Diocesan Architectural Society, 333  
 Exhibition, Conduit Street, Architectural Association's Screen at the, 253  
     — of French and Flemish Pictures, 187, 232  
     — of the Society of Painters in Water-Colours, 233  
     — the Amsterdam, 281  
     — the Architectural, 244  
     — the Beauvais, 245  
     — the Royal Academy, 289  
 Explosions, Cause of Colliery, 188  
 Explosion, Fendale Colliery, 317  
 Extension of Poplar Workhouse, the, 223  
 Extraordinary Match—Lincoln's Inn v. All England, 114  
 Facts in Science and Art, the Year-book of, 309  
 Faraday, Memorial to, 328  
 Father Thames, a Voice of Warning from, 325  
 Female Artists' Exhibition, the, 91  
 Fendale Colliery Explosion, 317  
 Fine Arts' Copyright Act, 324  
     — the Works of, 241  
 Fine Arts, Society for the Encouragement of, 321  
     — the French Government and the, 315  
 First Club-house at Birmingham, 245  
 Flamboyant Architecture—Somme Valley, 74  
 Foreign Publications, Notes from, 139  
 Founder of Irish Archaeology, the, 150  
 Fowler, Mr., on the Suez Canal, 127  
 Freemasons' Hall, Opening of, 217  
     — Masons and, 230  
 French and Flemish Pictures, Exhibition of, 187, 232  
 Gas and Water: Wildnes—London Water, 282  
 Girders, Wrought-iron, 103  
 Goldsmith, the Art of the, 151  
 Good Air, is a supply possible in large cities? 224  
 Grammar School, Queen Elizabeth's, Kingston-on-Thames, 294  
 Grantham Church, the Restoration of, 222  
 Grant's Triumph, President, 274  
 Graphic Society, the, 92  
 Great Eastern Railway, Accident, 155  
 Great Pyramid, the, 156, 181  
 Greek Myths, Mr. Ruskin on, 154  
 Greenock, New Docks at, 330  
 Hammersmith Suspension Bridge—is it safe? 140  
 Handy-book of House-building, 5, 22, 50, 128, 167  
 Harbour, Kurrachee, 180  
 Hedenham, Norfolk, St. Peter's Church, 66  
 Hints on Household Taste in Furniture, Upholstery, and other details, 53  
 History of Architecture, Engineering, and Art in Egypt, 74  
     — Oil Painting, Materials for, 309  
 Holborn Valley, Our Rambler over the, 174  
 Home for Nursing, Middlesex Hospital, 281

## Articles—Continued.

Homeric Architecture, 68, 102  
 Homes of England, our Cottage, 268  
 Hospital and Dispensary (Rotherham), Competition, 247  
 House-Building, the Handy-book of, 5, 22, 50, 128, 167  
 Household Taste, Hints on, 53  
 House-Raising in Chicago, 285  
 Houses of Parliament, Our Rambler in and about the, 186  
 Improved Dwellings for the Industrial Classes, 192, 202  
 In and about the Houses of Parliament, Our Rambler, 186, 214  
 Industrial and Fine Arts Exhibition, South Staffordshire, 258  
     — Classes, Improved Dwellings for the, 192, 202  
 Inigo Jones, Utilisation of, 235  
 Institute of Civil Engineers, 67, 80, 250  
 Institute of Painters in Water-Colours, 255  
     — Royal, of British Architects, 17, 48, 285  
 Institute of Surveyors, 49, 68  
 International Art Exhibition at Munich, 245  
 Introduction, 1  
 Irish Archaeology, the Founder of, 150  
 Irish Railway Report, the, 51  
 Is a Supply of Good Air possible in large cities? 224  
 Is Hammersmith Suspension Bridge Safe? 140  
 Isle of Wight, Carisbrooke Church, 154  
 Is the Embankment Site too small or not? 86  
 Jade, Prussian War-Harbour of, 18  
 John L. Pettit, the late Rev., 10  
 Josiah Wedgwood, 197, 224  
 Kurrachee Harbour, 180  
 Lamet's, M., Decorations, 190, 234  
 Lancashire and Yorkshire, the Strikes in, 259  
 Langside, Glasgow, Double Villa at, 318  
 Law and Science of Ancient Lights, the, 804, 819, 328  
 Law-Compensation Case, 25  
 Law Courts, new Site of the, 230  
     — Site of the, 61  
     — the, as they are to be, 290  
     — the New, 81, 307  
     — the, 193  
     — the Site for the, 167  
 Legal View of Building Contracts, 317  
 Lennoxville, St. George's Church, 104  
 Limehouse-Basin, Improvements, 177  
 Lincoln's Inn against All England, 114  
 Liverpool Corporation Waterworks, the, 55  
     — Manure Wharves, Sandhills, 306  
     — Municipal Office, 308  
 London and Paris, 149, 200  
     — Bridge, 99  
     — Orphan Asylum, Watford, the, 330  
     — Art Union of, 250  
     — Water, 282  
 Lord Elcho's Committee, 243  
 Luncheon, our Little Bill for, 138  
 Manchester, Architecture in, 185  
     — Society of Architects, 332  
 Mansion at Posingworth, Sussex, 20  
 Manure Wharves, Liverpool, 306  
 Maps of Paris, Ancient, 317  
 Market, Columbia, Bethnal Green, 235  
 Marks's, Mr., Work at the Gaiety Theatre, 3  
 Masons and Freemasons, 230  
 Match Extraordinary: Lincoln's Inn against all England, 114  
 Materials for a History of Oil Painting, 309  
 Mediævalism, Modern, 176  
 Memoir of Arthur Aschitel, 63  
 Memorial to Faraday, 328  
 Metal Work, Ancient, 318  
 Metropolitan Asylums District, the, 168  
     — Board of Works, 144  
     — Buildings Bill, 105  
 Michael Angelo, the New, and the National Gallery, 234  
 Middlesex Hospital Home for Nursing, 281  
 Modern Mediævalism, 176  
 Munich, International Art Exhibition at, 245  
 Municipal Offices, the Liverpool, 308  
 Museum, the Architectural, 287  
 National Gallery and the New Michael Angelo, 234  
 New Bank Buildings in Birmingham, 29  
     — Blackfriars Bridge, 306  
     — Our Rambler at, 114  
     — Bridge at Copenhagen, 151  
     — Buildings of Balliol College, Oxford, 6

## —Continued.

- Canal at Amsterdam, 22  
 aethra of St. Finbarr, at Cork, 36  
 Conservative Club House, 268  
 Docks at Greenock, 330  
 Historical Museum, Paris, 317  
 India House, Our Rambler at, 7, 23  
 Law Courts, Mr. Tite on the, 65  
 —, Site of the, 197, 230  
 —, Shields' Report on, 166  
 —, 31, 85, 307  
 Market for Santiago, 179  
 Opera House, Paris, the, 293  
 Raffaele at South Kensington, the, 246  
 Reading-Room of the Bibliotheque, Impériale, Paris, 40  
 Road, proposed, near Truro, 282  
 Road-laying, 312  
 Newtonaird House, Dumfriesshire, 131  
 New Woolwich Workhouse, the, 260  
 North Porch, Bristol Cathedral, 104  
 Notes from Abroad, 199, 266, 314  
 — Foreign Publications, 139  
 Oastler Monument, the, at Bradford, 281  
 Obituary, 85  
 Objects discovered in Palestine, 315  
 Oil Painting, Materials for a History of, 309  
 On the Duties of an Architect, 237, 249, 272  
 On the Motto of the Academy Catalogue, 256  
 On the Progress and Present Condition of the English School of Art, 51  
 Opening of Freemasons' Hall, 217  
 — the Suez Canal, 87  
 Opening of the Wedgwood Memorial Institution, Burslem, 217  
 Our Cottage Homes of England, 268  
 Our Little Bill for Luncheon, 138  
 Our Soldiers, Setting them to Work, 203  
 Our Water Supply—Nantwich; Guildford, 235  
 Painters in Water Colours, Institute of, Architectural Drawings at, 255  
 — Society of, Exhibition of, 233  
 Paintings at the Royal Academy, the, 265  
 Palace of Industry, the Carey Street Site for a, 45  
 — Justice, Site of the, 29  
 Palestine, Objects Discovered in, 315  
 Paris Annual Exhibition of Works of Art, 257  
 Paris, London and, 149  
 — Statistics, 86  
 — the New Opera House, 293  
 Pericles, Greek Art before, 203  
 Picture Frames at the Royal Academy, 282, 296  
 — sent in to the Royal Academy, 200  
 — in progress for the Royal Academy, 166  
 Pier Building, caissons for 151  
 Poonah, the Engineering College, 119  
 Porcelain, Belleek, 215  
 Posingworth, Sussex, Mansion at, 20  
 — Manor, 190  
 Practical Compensation, 25  
 — the Liverpool Corporation Waterworks, 65  
 Poplar Workhouse, the Extension of, 223  
 Pre-historic Remains, 306  
 President Grant's Triumph, 274  
 Private View of the Royal Academy Exhibition, 232  
 Prizes at the Royal Academy, 10  
 Prizes, South Kensington, 39  
 Proposed New Roads near Truro, 282  
 — Tunnel under the Mersey, 37  
 Prussian War-harbour of Jade, 18  
 Public Works in Present Year, Estimate for, 316  
 Publication Society, Architectural, 297  
 Pyramid, the Great, 156, 181  
 Quarries of Wiltshire, the Chilmark, 260  
 Queen Elizabeth's Grammar School, Kingston-on-Thames, 294  
 Question—New Road-laying, 312  
 Raffaele, the New, at South Kensington, 246  
 Railway Report, the Irish, 54  
 Red-tape, 127  
 Remains, Pre-historic, 306  
 Renovation of Arthuret Church, 259  
 Restoration of Grantham Church, the, 222  
 Restoration or Cleaning?—the Countess of Richmond's Tomb, 280  
 Retrospective Review of Travels of Cosmo III., 176, 303, 329  
 — Review of Sir II. Wotton's 'Elements of Architecture,' 34, 52  
 Review of Greek Art before Pericles, 203  
 Road-Laying, new, 312  
 Roadways, Rock Asphalt for, 324  
 Rock Asphalt for Roadways, 324  
 Roof of the Royal Albert Hall, 296, 319  
 Rotherham Hospital and Dispensary competition, 247  
 Royal Academy, Architecture at the, 242  
 — Exhibition, Private View of the, 232  
 — Exhibition, the, 289  
 — Paintings at the, 265  
 — Picture Frames at the, 282, 296  
 — Pictures in Progress for the, 165  
 — Pictures sent in to the, 200  
 — Prizes at the, 10

## Articles—Continued.

- Royal Academy, the, 229, 263  
 Royal Albert Hall, Our Rambler at the, 278  
 — the Roof of the, 296, 319  
 Royal Geographical Society, 333  
 Royal Institute of British Architects, 17, 48, 119, 139, 222, 250, 285, 297, 332  
 — Metropolitan Buildings and Management Bill, 105  
 Runcorn, Our Rambler at, 303  
 Ruskin, Mr., 166  
 — on Flamboyant Architecture in the Somme Valley, 74  
 — on Greek Myths, 154  
 St. Bernard's, Bridgnorth, 303  
 St. Finbarr, at Cork, New Cathedral of, 36  
 St. George's Church, Lennoxville, 101  
 St. Michael's Mount on the Sea, Our Rambler at, 32  
 St. Olave's Church, Marygate, York, 282  
 St. Pancras Terminal, Our Rambler at, 77  
 St. Paul's Cathedral, 157  
 St. Peter's Church, Hedenham, Norfolk, 66  
 St. Pierre, Church of, South Transept, 142  
 St. Sebaldus, Nuremberg, the Shrine of, 302  
 St. Thomas's Hospital, 208  
 — Our Rambler at, 126  
 Salisbury Cathedral Restoration, 245  
 Sandhills, Liverpool Manure Wharves, 306  
 Sanitary Engineering, 9, 21  
 Santiago de Compostella, Cathedral of, West Doorway, 247, 294  
 — New Market for, 179  
 School of Art, the coming, 315  
 Science and Art, the Year-Book of Facts in, 309  
 Screen at the Exhibition, Conduit Street, Architectural Association, 255  
 Secretaryship of the Institute, 287  
 Setting our Soldiers to Work, 203  
 Shields, Mr., Report on New Law Courts' Site, 166  
 Shrine of St. Sebaldus, Nuremberg, 302  
 Sir Matthew Digby Wyatt, 30  
 Site, New, of the Law Courts, 230  
 Site for the Law Courts, the, 167  
 Site, New, Law Courts, Shields' Report on, 166  
 Site of the New Law Courts, 192  
 — Palace of Justice, 29  
 Societies—the Institution of Civil Engineers, 67, 80, 250  
 Societies—Royal Institute of British Architects, 17, 48, 119, 139, 222, 250, 286, 297, 332  
 Society of Civil Engineers, 50  
 — Painters in Water Colours, Exhibition of the, 233  
 Society for the Encouragement of the Fine Arts: on Architecture connected with Structures of Civil Engineering, 321  
 Soirée, Architectural Exhibition Society's, 245  
 South Door, Bourges, 259  
 South Esk River Bridge, 221, 234  
 Southern Thames Embankment, 264  
 South Kensington Museum, 148  
 — and M. Lameire's Drawings, 270  
 — Our Rambler at, 20  
 — Prizes, 39  
 — the New Raffaele at, 246  
 South Midland Institute of Mining, Civil, and Mechanical Engineers, 334  
 South Staffordshire Industrial and Fine Arts Exhibition, 258  
 South Transept, Church of St. Pierre, Lisieux, 142  
 Specimens of Wedgwood Ware, 207  
 State of Architectural Education, 271  
 Statistics, Paris, 86  
 Steam, the New Theory of, 267  
 Stench Trap, Antill's, 297  
 Strand Approaches to the Thames Embankment, 113  
 Street Architecture in Carlisle, 234  
 Strikes in Lancashire and Yorkshire, 259  
 — the Building Trade, the, 217, 305  
 Strikes, the, 294  
 Suez Canal, Mr. Fowler on the, 127  
 — Opening of the, 87  
 — the, 153  
 Surveyors, Institute of, 49, 68  
 Sussex, Boxgrove Church, 154  
 Swiss Lake Dwellings, 16  
 Taste, Household, Hints on, 53  
 Temples of Athens and the Churches of Magdala, 48  
 Terra Cotta, the Treatment of, 301  
 Thames Embankment, Our Rambler along the Site of the, 98  
 Thames Embankment, 113  
 Thames Valley, Drainage of the, 140  
 The Academy Catalogue, on the Motto of, 256  
 The Architectural Association, 49, 91  
 — Exhibition, 244, 280  
 The Artist, the Manufacturer, and the Tradesman, 125  
 The Bridges on the Thames—London Bridge, 99  
 The Countess of Richmond's Tomb, 280  
 The Edleship of London, 327  
 The Evangelistic Beasts, 179, 207

## Articles—Continued.

- The First Clubhouse at Birmingham, 245  
 The French Government and the Fine Arts, 315  
 The Gaiety Theatre, Mr. Marks's Work at, 3  
 The Great Pyramid, 156, 181  
 The Handy Book of House-building, 5, 22, 50, 128, 167  
 The Institute, the Secretaryship of, 287  
 The late John Pettit, 10  
 The Law and Science of Ancient Lights, By Homersham Cox, M.A., Barrister-at-Law, 304, 319, 338  
 The Law Courts, as they are to be, 290  
 —, New Site of the, 280  
 The London and Middlesex Archaeological Society, 49  
 — Orphan Asylum, Watford, 330  
 The Manufacturer, Artist, and Tradesman, 125  
 The Mersey, Proposed Tunnel under the, 37  
 The Molden, Bridge over, 7  
 The New Law Courts, 31, 85, 307  
 — the Solicitors, 326  
 The New Michael Angelo, the National Gallery and, 234  
 The New Theory of Steam, 267  
 The Plough Brewery, Wandsworth Road, 52  
 The Review, Our Rambler at, 163  
 The Roof of the Royal Albert Hall, 296, 319  
 The Royal Academy, Architecture at, 242  
 The Shrine of St. Sebaldus, Nuremberg, 302  
 The Sketches of the Architectural Exhibition, 314  
 The Society of Engineers, 334  
 The Speech of M. Thiers, 143  
 The Strikes, 294  
 The Student's Corner, 80  
 The Suez Canal, 153  
 The Thames Embankment and its Strand Approaches, 113  
 The Thames, the Bridges on, 99  
 The Tradesman, the Manufacturer, and the Artist, 125  
 The Usefulness of the Institute, 277  
 Thiers, M., the Speech of, 143  
 'Tite's Paintings,' by Messrs. W. B. Simpson & Co., 222  
 Tite, Mr., on the New Law Courts, 65  
 Tombs in Westminster Abbey, 310  
 To our Readers, 325  
 Journal, Cathedral of, 20  
 Town-Hall of Conrath, Chimney-piece of the, 90  
 Travels of Cosmo III., Review of, 176, 303, 329  
 Treatment of Terra Cotta, the, 301  
 Truro, Proposed New Roads near, 282  
 Turner's Landscapes, 216  
 Two Little Bills, 73  
 Usefulness of the Institute, 277  
 Upper Caldecote, Bedford—All Saints' Church, 66  
 Utilisation of Inigo Jones, 235  
 Villa and Cottage Architecture: Select Examples of Country and Suburban Residences recently Erected; with a full Descriptive Notice of each, 318  
 Voluntary Architectural Examination, 189, 207  
 Water Supply, our, 235  
 Waterworks, the Chicago, 118  
 — the Liverpool Corporation, 55  
 Watford, the London Orphan Asylum, 330  
 Widnes, Gas and Water, 282  
 Wedgwood Memorial Institute, Opening of the, 215  
 Wedgwood Memorial Institute, the, 204  
 — Josiah, 197, 224  
 — Ware, Specimens of, 207  
 Wendover Parish Church, 305  
 West Doorway, Cathedral of Santiago de Compostella, 247, 294  
 Westminster Abbey, Our Rambler among the Monuments, 282  
 — Tombs in, 310  
 — Bridge, Approaches to, 23  
 Workhouse, the New Woolwich, 260  
 Works in Hand, or shortly to be executed in France, 330  
 Works of Art, Paris Annual Exhibition of, 257  
 Works of Fine Art Copyright Act, the, 1869, 241  
 Works, Public, 1869, Estimates for, 316  
 Wrought-iron Girders, 103  
 Wyatt, Sir Matthew Digby, 30  
 Year-Book of Facts in Science and Art, the, 309
- Competitions, Contracts, Tenders, Appointments Vacant, &c.**—13, 28, 44, 60, 72, 84, 96, 112, 124, 135, 149, 300, 312, 324, 336, &c.
- Correspondence**—56, 81, 92, 106, 120, 132, 181, 224, 310  
 Architectural Education, 81  
 Balliol College, 81  
 Building Contracts, 106, 107  
 Church Benches, 224  
 Decay of Stone in Public Buildings, 57  
 Fire Escapes, 81  
 Is a Supply of Good Air possible in Large Cities? 224

## Correspondence—Continued.

- Josiah Wedgwood, 224  
 Nature of Gothic, the, 93  
 Ramsgate Surveyorship, 57  
 Removing Houses, 81  
 South Kensington Museum, 93  
 The Great Pyramid, 181  
 Tombs in Westminster Abbey, 310  
 Utilisation of Refuge, 81  
 Westminster Abbey, Tombs in, 310
- General**—12, 27, 42, 59, 70, 82, 94, 110, 123, 134, 148, 160, 171, 183, 193, 212, 227, 240, 252, 264, 276, 288, 299, 312, 324, 336  
 Abbey Church, the, 110  
 A good suggestion, 71  
 An Art Pupil, 43  
 Ancient Salspit at Weymouth, 227  
 Angel Hotel, Oxford, 196  
 Anglo-French Railway Bridge, 43  
 Antiquarian, 227  
 Architect's Responsibilities, 83  
 Art School, National Competition 312  
 Art Manufacture, 299  
 Bermuda Dock, 312  
 Birkenhead and Liverpool Railways, 110  
 Bridge, Proposed, Across the Mersey, 312  
 British Land Company, 123  
 Bucknell Church, 312  
 Building Trade at Bradford, the, 195  
 Building in New York, 312  
 Cavers at Guildford, 227  
 Chandlers and Gaseliers, 184  
 Chicago River Tunnel, 43  
 Church Building, 219  
 Churches, Preservation of, 240  
 Civil and Mechanical Engineers' Society, 352  
 Cologne Cathedral, 111  
 Court of Common Council, 336  
 Crossing the Straits of Dover, 184  
 Deep and Shallow Drainage, 71  
 Devonshire Bridges, 238  
 Discoveries at Fimber, 324  
 Discovery at Herculanum, 312  
 — Wolfscien, Switzerland, 312  
 — of Greek Antiquities, 59  
 — Old Scottish Coins, 227  
 Dock, Bermuda, 312  
 — Western, Hull, 312  
 Douling Church, Restoration of, 336  
 Drainage Works, Tewkesbury, 83  
 Dyce, Rev. Alexander, 312  
 Earthquake-proof Architecture, 172  
 Ely Cathedral, 312  
 Feversham Memorial, the, 288  
 Flint Implements, 276  
 Floods in the Thames, 110  
 Foreign Coal and Iron Trades, 71  
 — Trade of Belgium, 227  
 Free Library and Museum for Pabey, 252  
 Great Quarry at Pwllpant, the, 148  
 Hartley Institution, Southampton, 59  
 Herculanum, Discovery at, 312  
 Historical Figures in Canterbury Cathedral, 123  
 Hull Western Dock, 312  
 Indian Architecture, 228  
 Late Mr. Felix Slade, 43  
 Manchester, 27  
 Mersey, proposed Bridge across the, 312  
 Metropolitan Street Tramways, 212  
 Mr. Abner Wedgwood, 300  
 Model Mortuary, 12  
 Monument to Bishop Lonsdale, 264  
 — Humboldt, 160  
 Monumental Stones in Scotland, 252  
 National Competition—Art School, 312  
 New Blackfriars Bridge, 59  
 — Church, the, at Meole, Shrewsbury, 288  
 — Courts of Justice, the, 276  
 — Method of Transport, 123  
 — Painted Windows in Westminster Abbey, 70  
 — Palace of Justice, 83  
 — Park for Nottingham, 312  
 — Suburban Village, Brixton, 184  
 — Town Hall at Bradford, 300  
 — York, Building in, 312  
 Northern Architectural Association, 240  
 Nottingham New Park, 312  
 Opening of Southwark Park, 336  
 Pier, New, at Morecambe, 183  
 Preservation of Churches, 240  
 Proposed Bridge across the Mersey, 312  
 — Workmen's Exhibition of 1870, 336  
 Relics of Ancient London, 160  
 Restoration of Douling Church, 336  
 Rev. Alexander Dyce, 312  
 Roman Remains at Bath, 240  
 St. John's Chapel, Cambridge, 95  
 St. Michael's Church, Alnwick, 196  
 St. Nicholas Church, Grosmont, 27  
 Sewage of Metropolis, 70  
 Sewers' Rates, &c., 240  
 Site for the Law Courts, the, 288  
 Southwark Park, Opening of, 336  
 Spanish Inquisition, the, 300  
 Statue of the Queen for Montreal, 112  
 Strand Union New Workhouse, 310  
 Suez Canal, 312  
 Technical Instruction, 212  
 — Schools at Bradford, 123  
 The Royal Academy, 123  
 The Thames at Wapping, 172  
 Tower Subway, the, 148, 336  
 Town Teme Bridge, Tenbury, 83  
 Tunulus near Penrith, 184  
 Tunnel through Mont Denis, 172  
 Tunnelling under the Sea, 172  
 Victoria Ale Stores, Woolwich, 312  
 Wells Cathedral, 300



**General—Continued.**

Western Dock, Hull, 312  
 Wolfeden, Switzerland, Discovery at, 312  
 Woolwich, Victoria Ale Stores, 312  
 Worcester Cathedral Great Bell, 83

**Items.** 11, 26, 41, 58, 69, 82, 94, 108, 121, 133, 146, 158, 169, 182, 195, 211, 225, 239, 251, 264, 275, 288, 298, 311, 323, 335

Abbey Bells, the, of Rath, 170  
 Abyssinian Goldsmith's Work, 227  
 — Bellics, 211  
 Acoustical Experiments at South Kensington, 298  
 Aix-la-Chapelle, 323  
 Alma Tadema, Madame, 813  
 An Anniversary, 311  
 Ancient Pavements at Palermo, 122  
 Antiquities, Irish, 335  
 — of Paris, 94  
 Archaeological Discoveries in Italy, 171  
 — Discovery at Bayeux, 159  
 — Discovery at Jerusalem, 121  
 Architects, and their Private Practice, 147  
 Barnsley, Building Trade in, 239  
 Berlin Cathedral, 139  
 — Competition, 41  
 Blackburn Borough Surveyor v. Stones, 70  
 Bombay, 253  
 Bordeaux, 311  
 Brussels (the) Exhibition of Paintings, 183  
 Building Trade in Barnsley, 239  
 Canal, Isthmus of Corinth, 239  
 City of Cairo, 27  
 Clearing the Paris Sewers, 195  
 Cologne, 311  
 Competition for New Hôtel de Ville of Vienna, 12  
 Curious Composition, 110  
 Cutlers' Hall, Sheffield, 69  
 Darien Canal, 122  
 Decoration of Churches, Paris, 134  
 Desiccation of the Zuyder Zee, 147  
 Destruction of Durham Theatre, 159  
 Discovery at Westminster Abbey, 298  
 Doré Gallery, 239  
 Dumfries Infirmary Buildings, 147  
 Emperor's Prize, 109  
 Exhibition at Chartres, 109  
 Ex-Queen of Spain, 58  
 Explorations at Herculaneum, 121  
 Girdle Round the Earth, the, 299  
 Great Imperial Prize, the, 299  
 Hammer Smith Bridge, 146  
 Her Majesty's Theatre, 311  
 Highlanders of Scotland, 133  
 House Property in London and on the Continent, 239  
 India, 26  
 Indian Notes, 275, 311  
 — Railways, 226  
 Institute, Soirée and Dinner of the, 311  
 International Art-Exhibition at Brussels, 252  
 Irish Antiquities, 335  
 Isthmus of Corinth Canal, 239  
 'Judicious Restoration' in Belgium, 211  
 Kirkdale Cave, the, 323  
 London Water Supply, 94  
 Lungs of London, the, 298  
 Madame Alma Tadema, 312  
 Mr. E. R. Robson, 108  
 Mr. Street's new Design for the Law Courts, 288  
 Monuments in Westminster Abbey, 311  
 New Guildhall at Plymouth, 211  
 — Lamp-post in Paris, 41  
 — National Gallery, Pictures for the, 335  
 — Opera House of Paris, 159  
 — School at Washington, 159  
 Notes for Connoisseurs, 58, 195, 211, 251, 275  
 — from Germany, 183, 252  
 — from Paris, 299  
 — Indian, 311  
 — for Connoisseurs, 41  
 Opening of Team Valley Railway, 11  
 — of Wedgwood Memorial Institute, 211  
 Oriental China, 146  
 Palestine Exploration Fund, 110  
 Paris Annual Exhibition of Works of Art, 195  
 Pictures by Raphael, 182  
 — purchased for the National Gallery, 335  
 Piercing the Isthmus of Corinth, 226

**Items—Continued.**

Poplar and Stepney Sick Asylum Competition, 11  
 Preparation of Lime, 171  
 Preservation of Wood from decay, 41  
 Public Monuments, Statues, &c., 94  
 Railway and other Works to be undertaken shortly in France, 239  
 Railways in North America, 27  
 Railway Terminus at Berlin, 159  
 Right Use of Works of Art, 226  
 Roman Pavement, the, discovered in the City, 275  
 Rotherham Hospital Competition, 26, 239  
 Saint Gothard Railway, the, 323  
 St. Pancras Workhouse, 299  
 Sale of Architectural Drawings, 323  
 Sculpture at South Kensington, 133  
 Sketch of the Seine and Marne in Old Times, 226  
 Soirée and Dinner of the Institute, 311  
 — the, of the Institution of Civil Engineers, 288  
 Southern Thames Embankment, 11  
 South Kensington Museum, 159  
 Statue of D. Sassoon, 108  
 — Lord Palmerston, 171  
 — Steel Works, Swansea, 160  
 Stockholm Junction Railway, 41  
 Street Tramways, 147  
 Student's Corner, 26  
 Suez Canal, 122  
 Technical Education in Bavaria, 146  
 Thames, Embankment, the, 298  
 The Architectural Museum, 109  
 — Brandenburg Gate at Berlin, 170  
 — Ecole des Beaux-Arts, Paris, 182  
 — Louvre, 171  
 — New City Hotel, Bristol, 58  
 Town Hall, Wareham, 69  
 Trafalgar Square, 285  
 Visit of Working Men's Clubs to Blackfriars Bridge, 264  
 Westminster Abbey, Monuments in, 311  
 Works shortly to be undertaken in France and Belgium, 299

**Legal**—56, 82, 107, 120, 208, 223, 237, 248, 262, 273, 310, 320  
 Ager v. Paraire, 320  
 An Architect Suing for Church Building Account, 237  
 Buck v. Wigmore, 223  
 Charge of Conspiracy, the, in the Brick Trade, 273  
 Cornish v. Hall, 248  
 Davis v. Taylor, 310  
 Dr. Evans v. Slack & Smith, 262  
 Dowling v. Hill, 248  
 Ex parte Walker, in re Graves, 320  
 Farrer v. Commissioners of London Sewers, 274  
 Heath v. Bucknall & Co., 223  
 Hinchliffe v. the Queen, 310  
 Important from Australia, 237  
 In Re the London Permanent Benefit Building Society, 121  
 In Re T. G. A. Palmer, 208  
 Lord Derby v. Bury Improvement Commissioners, 274  
 Millwall Canal Company v. Kelk, 120  
 Maltby v. Ware, 320  
 Pearson v. Plincknet and Others, 121, 223  
 Reg v. Lovibend, 320  
 Ridgway v. Graves, 310  
 Scanlan v. Craig, 107  
 Staunton v. the Local Board of Gainsborough, 223  
 Strond and Another v. Abery, 263  
 Thorn & Co. v. Metropolitan Board of Works, 25

**Meetings of Societies**—43, 69, 71, 83, 95, 111, 123, 134, 148, 172, 186, 212, 228, 240, 252, 264, 276, 283, 300, 312, 324

**New Buildings and Restorations**—25, 40, 57, 69, 93, 108, 121, 132, 145, 157, 168, 181, 194, 209, 225, 238, 251, 263, 275, 287, 310, 322, 334  
 Abergavenny Butter Market, 311  
 Academy of Music, Vienna, 194  
 All Saints' Church, Hastings, 158  
 Alton, Hants.—Building Progress at, 238  
 A Wesleyan 'High Church,' 210  
 Bengal High Court, the, 225  
 Bristol and Gloucester Cathedrals, 69  
 Building Progress at Alton, 238  
 Cathedral of Batisbon, 41  
 Central Pacific Railway Works, 225  
 Charing Cross Theatre, the new, 334  
 Chester Cathedral, 108

**New Buildings, &c.—Continued.**

Chipping Sodbury Church, 311  
 Church of St. Chad, Haggerston, 238  
 — Building, 275  
 — Extension at Sheffield, 93  
 — New, at Holloway, 209  
 — St. Mary, Saxlingham, 26  
 Co-operative Hall at Bury, 57  
 Countess of Huntingdon's New Church, Staffs., 298  
 Fever Hospital, New, for Stockton, 238  
 Frankfurt Cathedral, 26  
 General Council in St. Peter's, 181  
 Gloucester Cathedral, 310  
 Grammar School, New, at Doncaster, 210  
 Grand Pump Room Hotel, Bath, Opening of, 325  
 Great Northern Railway Church at Peterborough, 310  
 Great Skelton Viaduct, the, 132  
 Hardings Church, Northants, 121  
 Hargrave Church, Bury St. Edmund's, 121  
 Hexham Abbey Restoration, 108  
 Industrial Schools at Leavesden, 298  
 Keble College, 287  
 Lecture Hall, New, at Cavendish, 69  
 Malvern New Club House, 311  
 New Cathedral in Sydney, Australia, 145  
 — Charing Cross Theatre, 334  
 — Cemetery, proposed, at Stockton-on-Tees, 238  
 — Church at Blackburn, 93  
 — Gatesgill, 25  
 — Lewisham, 298  
 — Fever Hospital for Stockton, 238  
 — Great Northern Railway Hotel at Leeds, 322  
 — Militia Barracks at Aberystwith, 57  
 — Offices of the Poplar District Board of Works, 287  
 — Roman Catholic Church at Sunbury-on-Thames, 287  
 — Smithfield, the, at Hanley, Staffs., 251  
 — Town Hall for Warrington, 157  
 — Unitarian Chapel, the, Todmorden, 263  
 — Viaduct on Midland Extension to Barnsley, 133  
 — Wesleyan Chapel, Alsager, Staffs., 298  
 — Schools at Wolstanton, 181  
 Opening of Grand Pump Room Hotel, Bath, 335  
 — the New Church at Sawrey, 275  
 Operative House at Vienna, new, 57  
 Padiham Church, Lancashire, 93  
 Parish Church of Wash, Doncaster, 168  
 Pensford Church, Re-opening of, 335  
 Pier, New, at Clevedon, 194  
 Poplar Union Workhouse, 169  
 Proposed New Cemetery at Stockton-on-Tees, 238  
 Preston New Workhouse, 25  
 Public Buildings at Abergavenny, 41  
 Rebuilding of St. Andrew's Church, Hereford, 238  
 Richmond Congregational Chapel, 263  
 Runcorn Viaduct, 181  
 St. Andrew's Church, Hertford, 238  
 St. Ann's Church, Warrington, 145  
 — School, Birkenhead, 94  
 St. Chad, Haggerston, 238  
 St. James's Church, Hereford, 297  
 St. John the Evangelist, near Ellesmere, 310  
 St. John's Church, Holmside, 181  
 St. Jude's, Wolverhampton, 251  
 St. Luke's New Schools, Gloucester, 25  
 — Parochial Schools, Gloucester, 287  
 St. Margaret's Church, Durham, 108  
 St. Mary Magdalen, Ripon, 121  
 St. Mary de Lode Church, Gloster, 40  
 Severn Waterworks, 311  
 Station, New, N. E. Railway, at Leeds, 194  
 Stockton-on-Tees, Proposed New Cemetery at, 238  
 Wilford Church, Nottingham, 40  
 Wilmslow New Schools, 310  
 Worcester Cathedral Restoration, 181

**Notes on Novelties**—133, 145, 182, 269  
 Antill's Stench Trap, 297  
 Bacon's Warming Apparatus, 145  
 Bicknell's Window Pulley, 133  
 Flooring Tiles and Slabs, 209  
 Pether's Diaper Brickwork, 146  
 Pitt's Moulding for Picture-hanging, 182  
 Pott's Ventilating Cornice, 182  
 Ransome's Patent Concrete Stone, 209

**Our Rambler—**

Along the Site of the Thames Embankment, 98  
 Along the Southern Thames Embankment, 254  
 Among the Bronze Monuments in Westminster Abbey, 292  
 At Runcorn, 303  
 At St. Michael's Mount on the Sea, 32  
 At St. Pancras Terminus, 77  
 At St. Thomas's Hospital, 126  
 At South Kensington, 20  
 At the New India Office—Fall of a Spire at Colchester—Approaches to Westminster Bridge—Concrete Bridges, 23  
 At the Review, 163  
 At the Royal Albert Hall, 278  
 In and about the Houses of Parliament, 186, 214  
 In Belgravia, 89  
 On New Blackfriars Bridge, 114  
 Over the Holborn Valley, 174

**Parliamentary**—120, 132, 167, 189, 208, 217, 236, 247, 261, 309, 320, 331  
 Architects, Irish Diocesan, 236  
 Asylum, the Caterham, 236  
 Buckingham Palace Guard-Room, 331  
 Caterham Asylum, 236  
 Clerks of Royal Engineer Department, 331  
 — Works, 310  
 Copyright of Designs Bill, 320  
 County Court, Gravesend, 287  
 Courts of Justice, 309  
 — (New Site), 261  
 Diocesan Architects, Irish, 236  
 District Asylums, 167  
 Durham County Courts, 217  
 Ecclesiastical Dilapidations Bill, 247  
 Embankment, the Southern, 236  
 Fine Arts' Copyright Bill, 248  
 Gravesend County Court, 287  
 Greenwich Hospital, 237  
 Irish Diocesan Architects, 236  
 — Monuments, 217  
 Kensington Sick Asylum District, 217  
 Ladies' Galleries, the, 331  
 Law Courts, the New, 237, 218, 320, 331  
 London Sewage, 310  
 Malta, New Port and Docks in, 237  
 Metropolitan Railway Bill, 217  
 Military Labour, 309  
 Municipal Government of the Metropolis, 320  
 New Law Courts, 237, 248, 326, 331  
 New Port and Docks in Malta, 237  
 Palace Yard Station, 167  
 Royal Engineer Department, Clerks of, 331  
 Ryde Pier, 331  
 Site of the New Law Courts, 217  
 Southern Embankment, the, 236  
 Statues in Palace Yard, the, 320  
 Suburban Commons, 332  
 Temple Collection, the, 236  
 The Ladies' Galleries, 331  
 Union of Army Offices, 236  
 Ventilation of the House, 331  
 Waterloo and Whitehall Railway, 217

**Questions and Answers**—95, 123, 148, 196, 212, 228, 276

**Reviews**—  
 Arts Décoratifs à toutes les Époques (E. Livre), 24  
 Atchley's Builders' Price Book, 69  
 Correspondence relating to the Site of the New Law Courts, 120  
 Greek Art before Pericles (M. Beulc), 203  
 Hints on Household Taste (C. L. Eastlake), 53  
 Italian Sculptors (C. C. Perkins), 190  
 Laxton's Builders' Price Book, 69  
 Les Fricas du Parthénon (A. Aroza), 24  
 Materials for a History of Oil-Painters (C. L. Eastlake), 309  
 Personal Recollections of English Engineers, 35  
 Sprague's Pocket Diary and Architects Memorandum Book, 69  
 The Railways of India (E. Davidson R.E.), 226  
 The Year-Book of Facts (J. Timbs), 309  
 Tree and Serpent Worship (J. Ferguson), 208

**Societies**—4 67  
 285, 297, 321 332

## INDEX OF ILLUSTRATIONS.

\* \* THE LITHOGRAPHED ILLUSTRATIONS WILL BE FOUND OPPOSITE TO THE PAGES QUOTED.

- |  |  |   |
|--|--|---|
| <p>Aix-la-Chapelle, Cloisters, 284<br/>                 All Saints' Church, Upper Caldecote, Bedford, 66<br/>                 Ancient Metal Work, 318<br/>                 Balliol College, Oxford, New Buildings of, 6<br/>                 Berlin Cathedral Competition, the, Designs for, 259, 306<br/>                 Bourges Cathedral, South Door, 238<br/>                 Boxgrove Church, Sussex, 154<br/>                 Brewery, Plough, Wandsworth Road, 52<br/>                 Bridges on the Thames (several illustrations), 101<br/>                 Bristol Cathedral, the North Porch, 105<br/>                 Buildings on the Thames Embankment, 142<br/>                 Caissons for Pier-Building—New Bridge at Copenhagen, 152<br/>                 Capitals (several), 115, 121<br/>                 Carisbrooke Church, Isle of Wight, 154<br/>                 Cathedral Competition, the Berlin, 259, 306<br/>                 Cathedral of Santiago de Compostella—West Doorway, 247, 294<br/>                 Cathedral Church of St. Finbar, Cork (W. Burges, Architect), 179<br/>                 Cathedral of Tournai, Belgium, 21<br/>                 Chicago Water Works (2 illustrations), 118<br/>                 Chimney-Piece of the Town-Hall of Courtrai, Belgium, 91<br/>                 Christ Church Cathedral, Dublin, 78, 154<br/>                 Church of St. Pierre, Lesieux, South Transept, 143<br/>                 Cloisters, Aix-la-Chapelle, 284<br/>                 Decorations, M. Lamelre's, at South Kensington, 190, 234, 271<br/>                 Double Villa at Langside, Glasgow (A. &amp; G. Thomson, Architects, Glasgow), 318<br/>                 Dover Castle (3 illustrations), 166<br/>                 Dublin, Christ Church Cathedral, 78, 154<br/>                 Dumfries-shire, Newtonaird House, 130<br/>                 Engineering College, Poonah, 119<br/>                 Evangelistic Beasts, the</p> | <p>Examples of Wedgwood Ware, 205<br/>                 Greenock, New Docks at, 330<br/>                 Hedenham, Norfolk—St. Peter's Church, 66<br/>                 Isle of Wight, Carisbrooke Church, 154<br/>                 Kurrachee Harbour, 131<br/>                 Langside, Glasgow—Double Villa at, 318<br/>                 Law Courts, the New, 307<br/>                 Lennoxville, St. George's Church, 104<br/>                 Liverpool, Municipal Offices, 283<br/>                 London Orphan Asylum, Watford (H. Dawson, Architect), 330<br/>                 Mansion at Possingworth, Sussex, 20, 190<br/>                 Market, New, for Santiago, 179<br/>                 Mersey, Proposed Tunnel under, 37<br/>                 Metal-Work, Ancient, 318<br/>                 M. Lamelre's Decorations, 190, 236, 271<br/>                 Moldau, at Prague, Suspension Bridge over, 7<br/>                 Municipal Offices, Liverpool, 283<br/>                 New Bridge at Copenhagen, 152<br/>                 New Buildings of Balliol College, Oxford, 6<br/>                 New Cathedral of St. Finbar, at Cork, 35<br/>                 New Docks at Greenock, 330<br/>                 New Law Courts, 90, 91, 307<br/>                 New Market for Santiago (3 illustrations), 179<br/>                 Newtonaird House, Dumfries-shire, 130<br/>                 North Porch, Bristol Cathedral, 105<br/>                 Picture Frames at the Royal Academy, 282, 295<br/>                 Pier Building, Caissons for, 152<br/>                 Plough Brewery, Wandsworth Road, 52<br/>                 Poonah, the Engineering College, 119<br/>                 Portion of Frieze representing the Crusade, from interior decoration of a Church, by Mons. C. Lamelre, 271<br/>                 Carlovignians, now exhibiting at South Kensington Museum, 190</p> | <p>Possingworth Manor, Sussex, Mansion at, 20, 190<br/>                 Proposed Tunnel under the Mersey, 37<br/>                 Roof of the Royal Albert Hall, 294<br/>                 Royal Academy, Picture Frames at the, 282, 295<br/>                 Royal Albert Hall, the Roof of the, 294<br/>                 St. Finbar, at Cork, New Cathedral of, 35<br/>                 — George's Church, Lennoxville, Canada, 104<br/>                 — Peter's Church, Hedenham, Norfolk, 66<br/>                 — Pierre, Lesieux, Church of, South Transept, 143<br/>                 Sanctuary of a Church, from Drawings by Mons. C. Lamelre, 270<br/>                 Santiago, New Market for, 179<br/>                 — de Compostella, West Doorway of Cathedral of, 294<br/>                 South Door, Bourges Cathedral, 238<br/>                 — — — — — Esk River Bridge, 221, 254<br/>                 — — — — — Transept, Church of St. Pierre, Lesieux, 143<br/>                 Suspension Bridge over the Moldau, at Prague, 7<br/>                 Sussex, Boxgrove Church, 154<br/>                 Thames Embankment, Buildings on the (2 illustrations), 142<br/>                 Thames Embankment and its Strand Approaches, 119<br/>                 Tile Paintings, by W. B. Simpson &amp; Sons, 270<br/>                 Tournai Cathedral, Belgium, 21<br/>                 Town-Hall of Courtrai, Chimney-piece of the, 91<br/>                 Upper Caldecote, Bedford, All Saints' Church, 66<br/>                 Water Works, the, Chicago, 118<br/>                 Watford, the London Orphan Asylum, 330<br/>                 Wedgwood Memorial Institute, the (2 page examples), 204<br/>                 — — — — — Ware, Examples of, 205<br/>                 West Doorway, Cathedral of Santiago de Compostella, 247, 294</p> |
|--|--|---|















