Wednesday, January 16, 1924. Vol. LIX. No. 1515.

THE ARCHITECTS' JOURNAL & Architectural Engineer

With which is incorporated "The Builders' Journal."

UPON WESTMINSTER BRIDGE.
(Sept. 3, 1802.)

Earth has not anything to show more fair:
Dull would he be of soul who could pass by
A sight so touching in its majesty:
This City now doth like a garment wear

The beauty of the morning: silent, bare,
Ships, towers, domes, theatres, and temples lie
Open unto the fields, and to the sky,—
All bright and glittering in the smokeless air.

Never did sun more beautifully steep
In his first splendour valley, rock, or hill;
Ne'er saw I, never felt, a calm so deep!

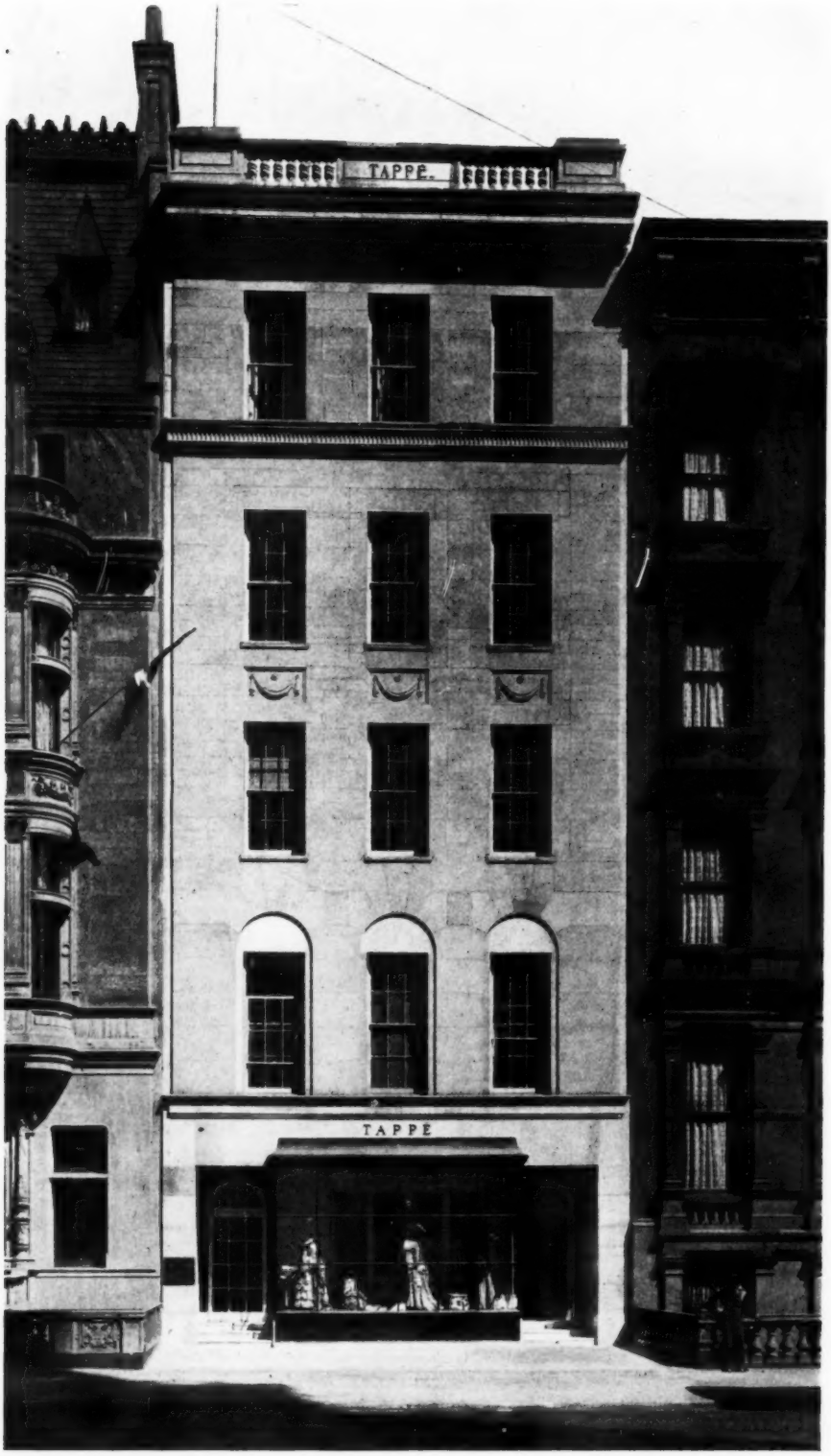
The river glideth at its own sweet will:
Dear God! the very houses seem asleep;
And all that mighty heart is lying still!

W. WORDSWORTH.

27-29 Tothill Street, Westminster, S.W.1.

Modern American Architecture. 42.—A Shop Front in West 57th Street, New York

Kenneth M. Murchison, Architect



If New York shopkeepers have not been first, they have at least been second in the desire for good shop fronts, and the shops in Fifth Avenue and its neighbourhood rival those of the Rue de la Paix in Paris.

THE

ARCHITECTS' JOURNAL

27-29 Tothill Street, Westminster, S.W.1.

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Back to Tradition

THE death of Sir William Chambers coincided with a break in architectural tradition from which there has as yet been no real recovery. Chambers defended the traditions of Palladianism right up to his death, viewing with honour the so-called outrages of Soane, whom he had earlier admired and befriended. But the seeds of dissolution had already been sown, and Chambers refused to acknowledge the inevitable. Walpole's house on Strawberry Hill, and Beckford's at Fonthill, were prophetic signs of the coming changes, and around Stuart and Revett there crystallized the suspended aspirations of the day. Then, too, contemporary affairs were in a state of flux. There was the fall of Lord North's Ministry, and there was the French Revolution; and the architectural tradition which had flourished for about a hundred and fifty years, from Wren to Chambers, crumbled, and was no more. The tide of the classic revival swept all before it, proudly bearing the Elgin marbles on its flood to repose in Smirke's fit shrine at Bloomsbury, and causing, too, the Temple of the Winds to arise, like some strange, incongruous apparition of a pagan god, but to the service of Christian ritual, upon St. Pancras Church. Scarcely had the classicists begun their reign than their supremacy was challenged by the Gothicists, and to this conflict confusion was added by the astylar tendencies of Barry. Then, as if with diabolical intent, the great storm of industrialism burst over the country, sweeping all before it in a ruined confusion, so that men clung here and there to any shred that came to hand—Classic, Gothic, Astylar, Flemish, Byzantine—and from out this black, chaotic whirlpool the ill-shapen desire for period architecture arose and stalked the land. For it became apparent that if architects could revive this or that style according to their own fancy, they could do so equally effectively at the behest of a client. So there began a general picking and choosing for various coverings from out the old architectural wardrobes, into which, hitherto, nobody had bothered to investigate, all being, quite rightly, too, busy with their own immediate affairs. And so, not only would they have a house decked out in this or that apparel, but they would go farther and show their superb discrimination by having each room dressed differently; the baronial dining-room, the Jacobean hall, the Queen Anne drawing-room, the Louis XV boudoir, the oriental smoking-room, and the Tudor gallery.

At first there may have been a certain novelty and excitement in the period craze, to which a stimulus was given, too, by the growth of museums. Amidst the grime and sordidness that was fast enveloping everything, the appeal of the past, with its associations, its glamour, its romance, and its picturesqueness, was not to be ignored, and it seemed, for a moment, that an environment, even if it were limited to a single room, would bring something of the ease, the grace, the barbarity, or the splendour of past epochs into present life. It is interesting to note that the intellectual recreations of last century were essentially romantic: Scott among the novelists, Tennyson among the poets, leading up towards the pre-Raphaelites, are typical; and anachronisms are a powerful aid to romance.

Viewed from a certain aspect, therefore, the growth of period work seems right and inevitable. Nevertheless, it was disastrous, for it gave rise to false ideas and false standards, and the past was admired for the associations and sensations which it evoked rather than for any intrinsic merit which it may have had. There was no longer any consistent idea of abstract beauty, since all absolute standards were obscured. The evil naturally spread with rapidity, and demand and supply, as so often happens, stimulated one another, and furniture makers and decorators "specialized" in reproductions, and prided themselves in the accuracy of their imitations. To-day, so firmly ingrained is the habit become, that it is difficult to see how it is to be broken. Yet every serious architect, artist, and craftsman must deplore the present state of affairs. There are signs, however, that contemporary work may in time supplant this continual imitation and reproduction of the past. Two things are needed: co-operation on the part of all those who produce—artists, craftsmen, and tradesmen—and determination on their part to encourage and to exploit only good original work, and intelligent patronage. The necessity for both these conditions was emphasized by Sir Edwin Lutyens a few weeks ago in a Press interview, in connection with the recent Decorators' Exhibition. "Each trade ought to know and understand what all the others are doing, and I look forward to the time when exhibitions will be held in which all crafts and trades work together to produce a cumulative effect of righteousness."

As to architecture, it would seem that there is a possibility that a junction may be effected with the past, and that a definite and coherent tradition will once more emerge. The attention which the work of the Late Georgian period is receiving is a healthy sign, for was it not at this period that the old tradition finally and completely broke down? To go back to it, therefore, is but to pick up a dropped thread, so that the never-ending pattern of architectural development may be properly continued. It is no exact imitation or reproduction that is needful, but rather a process of sensitive grafting which will, for the most part, ignore the intervening years of chaos. Here there is to be found, too, something which is altogether compatible with a reviving sense of civic dignity, for the Georgian architecture is essentially good-mannered, and does not for ever seek to draw attention to itself. As to contemporary furniture and equipment, here much good work is being produced, which, unfortunately, receives inadequate recognition, but a system of co-operation and co-ordination

would, we think, soon break down the existing prejudice against good and original work.

A house must be considered as a whole in which everything has its relative importance, including the furniture, textiles, and even the glass, china, and linen. This does not mean to say that anyone having a new house must dispense with all his possessions and acquire new and more harmonious ones. It does mean, however, that merely to design a house without any consideration of its ultimate furnishings, without which it remains incomplete, is a mistake. Here architects more than anyone else can be of use in showing that the home should reflect the ideas and the mode of the day. A man would be shocked if it were suggested to him that he should go to his work clothed as a sixteenth-century courtier, that he should visit the theatre in powdered wig and sword. Yet, often enough, the manner in which he decorates and furnishes his home is analogous with such conduct.

It is to be hoped that we are on the threshold of a new and virile art epoch. The present age is not lacking in ideas, neither is it lacking in good workmanship. But the present organization is still unable to break down three-quarters of a century of prejudice. When this has been effected, both architecture and the arts which serve it will be liberated and the age will bear its own rich blossom.

Academic Dress

At a business meeting of the R.I.B.A. last week it was decided to go ahead with the Academic Dress proposal; so it is to be assumed that before long we may expect to see members proudly arrayed in all the panoply of skirts and biretta. But shall we? There may possibly be a few architects who would feel — perhaps actually gain — an added dignity from the presence of these clinging garments, but there can be no doubt that opinion in the profession generally is opposed to the innovation. To the great majority of members Academic Dress would be an embarrassment. The wearing of it would certainly have to be optional, else life to any modest or sensitive man must become intolerable. We cannot but feel, however, that the setting aside of the considered judgment of the Council by a small and unrepresentative meeting of members at Conduit Street is a somewhat undemocratic proceeding, entirely out of harmony with the spirit that should rightly animate the governance of a liberal institution such as the R.I.B.A. Is a mere handful of members, with a voting majority of three, to be allowed to force upon the thousands who have had no say in the matter, an innovation of such consequence as that of Academic Dress? The only satisfactory way of deciding a proposal of this kind—one to which there is good ground for believing that the great majority of members is entirely opposed—is to make it the subject of a referendum.

The New President of the R.S.A.

A further public recognition of the status of architecture is manifest in the election of Mr. George Washington Browne to the presidency of the Royal Scottish Academy. With Sir Aston Webb already in office at the Royal Academy, both the premier British art institutions are now led by architects. This is as much a compliment to the architectural profession as it is a personal distinction for the gentlemen concerned. Too long has art meant nothing more than the individualistic pursuits of painting and sculpture; and it is not so long ago that the very idea of a president from any but these callings was regarded askance. The architect precedent is now firmly established, and it will operate as much to the renown of the two academies as it will to that of the art of architecture itself. Mr. Washington Browne, of whose career some particulars are given elsewhere in this issue, is to be congratulated equally with the Royal Scottish Academy upon his election to the presidential office.

Art and the Public

Sir Llewellyn Smith's forthcoming series of lectures at the London School of Economics on "The Economic Laws of Art Production" will introduce to public notice an aspect of art that is seldom touched upon. To a great proportion of the British public it will probably come as a surprise that art has an economic side at all. To many respectable citizens art is a vague sort of superfluity with which misguided people occupy their spare time. To many who do appreciate the economic side, the term "art" means nothing more than the easel picture or a piece of sculpture—an expensive luxury to be indulged in occasionally as finances permit. The idea that art is universal and touches life at every point is understood by few. Art, indeed, is "caviare to the general," and for this unhappy state of affairs we have mostly to blame the popular Press, with its excessive pre-occupation with so-called "news values." Any mention of art in certain papers is conditional upon sensational or personal interest; while many of the more responsible newspapers restrict their notice of the subject to the West End art galleries, thus confirming a widespread impression that art is something precious that you must pay to see. This illusion has hitherto been carefully fostered by charging for admission to public art galleries on certain days of the week, though we are glad to note that in the case of the National Gallery this very misguided policy is shortly to be abandoned. In spite of all hindrances, however, a large section of the public somehow continues to be genuinely interested in art, and notably in architecture. The great success of the Architecture Club's Exhibition in different parts of the country is still remembered. A more recent instance is the exhibition of the competition designs for the D.I.C. House and the Masonic Temple at the Manchester Art Gallery, which was attended by more than eleven thousand persons during a fortnight's run. By persistent and properly directed Press publicity, and by means of lectures and exhibitions, the great body of the public may in time be brought to a rational understanding of the meaning of art. Sir Llewellyn Smith's original method of approach should stimulate a new and widespread interest in the subject.

The Spreading Suburbs

With the tube railways throwing their tentacles ever farther and farther out into the home counties, the green country as surely recedes further and further away from the Metropolis. People who are not yet middle aged can remember the time when such places as Hampstead, Herne Hill, or Wimbledon were literally "in the wilds"—as rural in character as places fifty miles out now are; when it took as long to get to Brixton or Streatham as it now does to Brighton. Even to-day there are still spots within ten miles of London that are virtually as rural and unspoiled as they were a hundred years ago. Such a place is the little village of Morden in Surrey, to which the South London tube is now in process of being extended. It is saddening to think that within the next few years the fresh green country around must be covered with bricks and mortar. The growth in population and the enormous improvement in travelling facilities have combined to provide the present generation with as knotty a development problem as could well be imagined. If it is impossible to arrest suburban growth (and so it must be unless artificial restrictions a imposed, which can only defer the evil day of coming to grips with the problem) it is at least possible to regulate it. Foresight among local authorities, combined with expert town-planning advice and assistance, can preserve for the environs of London much of their still unspoiled beauty. All who have the best interests of London at heart should spare no effort in bringing home to the responsible authorities the necessity for ordering the growth of their areas according to a preconceived and enlightened plan. What yet remains green must never be allowed to become a repetition of Tooting or Willesden.

Architectural Travel

Edited by F. R. Yerbury, Secretary of the Architectural Association

4.—Germany. (2) South (*Concluded*)

By GORDON H. G. HOLT

IN the first article it was pointed out how tenacious and complete had been, round the year 1810 or so, the classic revival; the Parthenon, especially, attracted architects. What we started doing on the Calton Hill, at Edinburgh, was actually and completely done at Regensburg. The "Walhalla" was built as a German National Monument and Temple of Fame in 1830. The temple is on the crown of a slope above the Danube, and is approached by ascending a great outer staircase of 250 marble steps. Its dimensions vary slightly from those of the Parthenon, but externally the order is an exact copy executed in white limestone. It was designed by Leo von Klenze.

The modern phase—from 1850 to our days—as in other countries, has registered its failures and triumphs. The material at hand here is so enormous that it is impossible to review it, however succinctly. It is enough to point to the energy and self-confidence of the German nation—with all its vices and qualities, its coarseness, its repellent materialism, its iron will, its vitality and its sure adaptability—to get an idea of the wealth and variety of these triumphs and failures. The period spanning the years 1880 to 1910 is, of course, made painful and uncouth. "L'Art nouveau" was certainly responsible for ghastly atrocities, more bombastic, if less meretricious and inane, than the French ones. Since then, however, a methodical enquiry into the requirements needed by each class of buildings and a growing scientific efficiency have strangled this movement. And now only an inhibitive coarseness and a rather fatal and turgid ethical mysticism stand in the way of a new, powerful, and lasting German renaissance in architecture.

So it may not be too rash a prophecy to state that within fifty years Germany will be one of the most powerful centres of significant and honest architecture, one not so readily given over to hypocritical credos and to the incessant erection of so many feeble and sickening shams—always a sign of mental rot and of bewildered lethargy. The reason for this is not far to seek; on a whole, a German architect is better equipped and better educated than most (if we except the Dutch, Scandinavian, and Austrian), the German people is better educated; it thinks more and displays more energy. The paralysing tendency to shelter behind tradition and precedent clogs its progress far less.

One result of this combination of courageous initiative on the one hand, and of scientific equipment on the other, has led this nation to the considered opinion that in the matter of municipal architecture, for instance, a really able, forceful, original architect should be put in charge of the buildings and schemes controlled and erected by municipalities. In England, as in France, the town surveyor or town engineer are the big noise; the architect is just called in at times. In Germany it is the other way round, and is one of the reasons why a tour through that country will afford the student many opportunities to se vast municipal undertakings given thoughtful, ingenious, and architectural shape. The drab and narrow-chested hybrid too often obtaining right of light here is, over there, replaced by a strong, wilful, and often handsome entity inviting criticism certainly, but not the disdainful or impatient shrug of shoulders. Fritz Schumacher,* Bruno Taut, Bruno Paul, Eric Mendelsohn, the late von Seidl, Peter Behrens, Hanz Poelzig, Georg Metzendorf, Prof. Albinmüller, are names to remember in that connection. With them, as, indeed, with all truly big architects, a discriminate regard for the past glories does not blind them to the magnificent possibilities of present and future problems, each calling for its own solution and interpretation. They remember, with Schiller, that

Das Alte stürzt, es äudert sich die Zeit,
Und neues Leben blüht aus den Ruinen.

The old falls, time changes, and new life blossoms out of the ruins.

NOTE.—Anyone intending to travel through Germany for the specific purpose of studying its architecture and town planning should become conversant less with the development and examples of the various "styles" of its buildings—though it has its importance—than with the actual lay-out of those towns worth a stay. This done, a list of the various types of buildings might be drawn up and filled in with the available information concerning their plan, date, and name of architect. One thing generally leads to another, and once the name of the architect is known it is easy enough to look up other works of his. The authorities on the subject are not difficult to get hold of. It may be said that every large town has at one time or another provoked learned and enthusiastic writers to bring out monographs and treatises bearing on them. Often a society or a municipal body has undertaken an exhaustive survey of their architectural treasures, and the outcome of their researches should be sought.* Take Münich, for instance. Beside a plethora of monographs and general studies, the "Bavarian Society of Architects and Engineers" compiled an extremely handy and complete survey on Münich and its buildings." † True, it stops with the year 1912, but it gives not only a clear list of its mediæval buildings, with photos and plans, but also of all notable modern buildings, from a Palace of Justice to a tram shelter. Furthermore, it gives an additional map of Münich and its environs, and much tabulated and indexed matter. This is the kind of book to get hold of and study. It will save much time.

Another useful source of information is that of Architectural Schools and Technical Colleges. The Technische Hochshule of Dresden, for instance, has had, since 1912, a Laboratory for Architectural Acoustics attached to it, where the latest information and progress of that science can be sought.

The Technical School of Darmstadt is also very good, especially in regard to materials. Models are permanently exhibited of plaster and cement work, of combinations of marble and other hard stones. Colour-effects are also tried on walls and artificial lighting is given many trials, and the various systems of lighting museums and halls, clinics and workshops are not only formulated, but carried into tentative practice. Armed with a proper introduction a foreign architect is afforded every facility to see all this. More often than not the questions of the visitor are answered in excellent English.

The problem of hotel accommodation, railway fares, and the best local lines to use for reaching out-of-the-way places, should be mentioned in an article of this character, but, unfortunately, it is impossible to give any reliable information because Germany is now so disorganized that prices vary from day to day, and the railway services are entirely altered. In the Ruhr the French run their own trains still, and most subsidiary lines exist no longer, or barely so. In North and Central Germany the general service is also on a precarious

* This eminent architect has just completed a very ambitious and thorough town-planning scheme for Cologne, which will relieve its overcrowded centre of some of the pressure and congestion now strangling it. This scheme swings round half the Ring periphery and involves a new station and piazza and many large church and public buildings, with garden cities in the offing.

* In Westphalia the Wëstfalische Kommission für Heimatschutz occasionally brings out valuable monographs. The latest one is "Die Meister von Schloss Horst im Broiche," by Richard Klapheck.

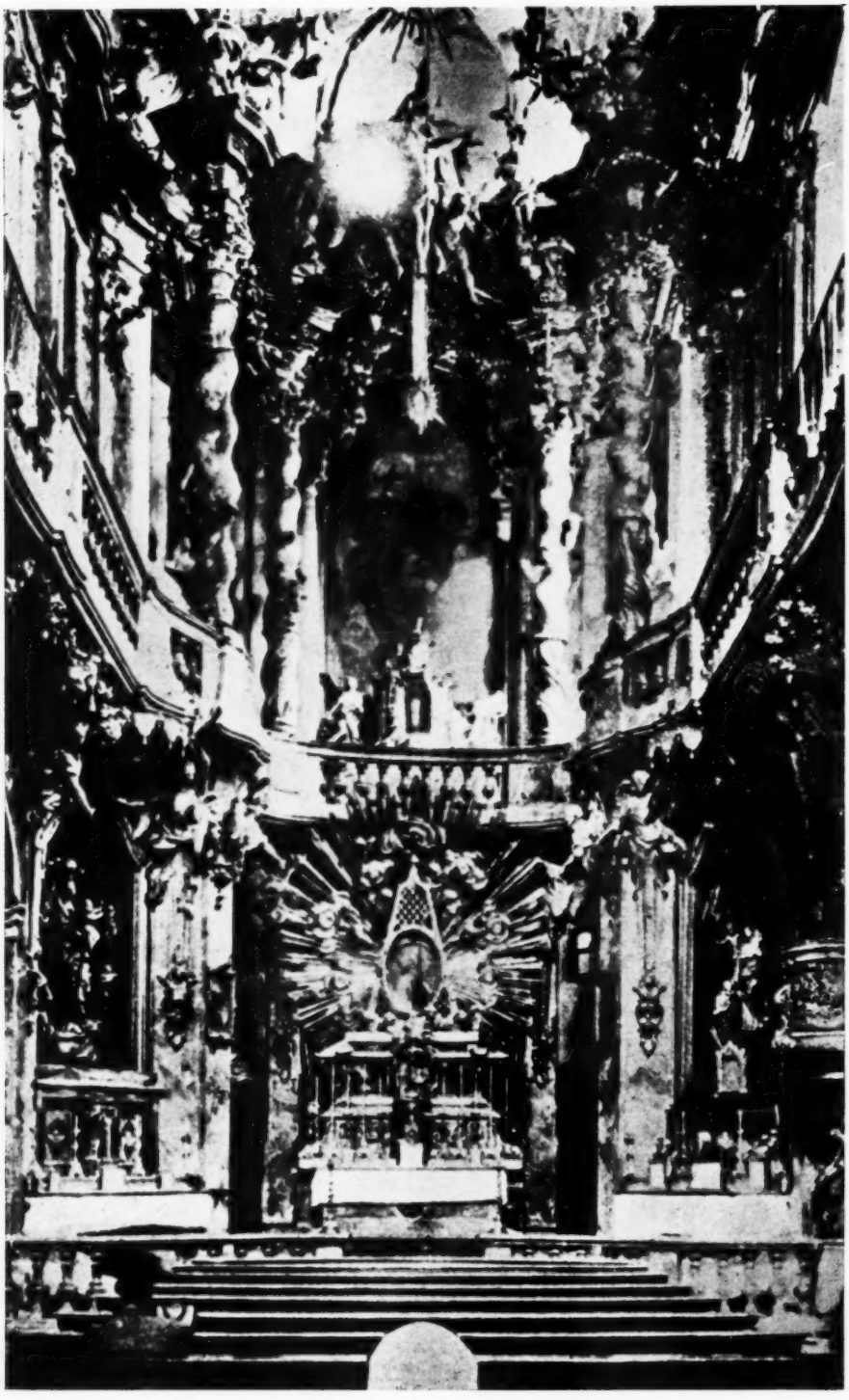
† "München und seine Bauten," Münich, 1912. F. Bruckmann, A.G.

NUREMBURG: DÜRER'S HOUSE.

Photos: F. R. Yerbury.

ROTHENBURG

CASTLE ERBACH, FURSTENAU, IN ODENWALD.
(14th to 17th Century.)



THE INTERIOR OF ST. JOHANNES NEPORNUK CHURCH, MUNICH.

Photos: F. R. Yerbury.

HEIDELBURG: THE BRIDGE OVER THE NECKAR.

ROTHENBURG.

RENAISSANCE TOMBSTONE IN THE OLD BERGEN CEMETERY.

footing, on account of the coal shortage. The student will have to find out on the spot how and where to stay, and how best to travel.

The situation, however, has slowly improved during the last two months and, given no further political or economical upheaval, it will no doubt be possible to travel in and cut of Germany in conditions tolerably similar to those obtaining a couple of years ago.

Appended is an abridged list of some notable recent buildings erected in South Germany :—

1. Liebig-Oberrealschule, Frankfurt a. M., by Moritz, Architect.
2. Konig-Ludwig Universität, Münich, by German Bestelmeyer.
3. Maximiliangymnasium, Münich, by Hoepfel.
4. Schickhardtshule, at Stuttgart, by Pantle.
5. Falkerschule, at Stuttgart, by Pantle.
6. Das Bayerische Nationalmuseum, Münich, by Gabriel von Seidl.
7. Das Deutsche Museum, Münich, by Gabriel von Seidl.
8. Kunstansstellungsgebäude, Stuttgart, by Theod. Fisher.
9. Bühuenhaus Theater, Cologne, by H. van de Velde.
10. Turbinenhaus der Firma Peter Harkort and Sohn, Wetter on der Ruhr, by Taut Brothers and Hoffmann.
11. Ruckversicherungs-Gesellschaft, Münich, by Bieher and Hollweck.

11A. Warehouses and Works of the Frankfurter Gasgesellschaft, Frankfurt, by Peter Behrens.

12. Rheinische Metallwaren-und-Maschinenfabrik, Düsseldorf, by William Kreis and K. A. Jüngst.

12A. Ausstellungshalle der Dinoswerke in Essen, by Baumeister Jung.

13. "Fortuna" Electric Works, Cologne.

13A. Buttner-Werke A.G. Uerdingen a. Rh., by F. A. Breuhaus.

14. Markhalle, Stuttgart, by M. Elsaesser.

14A. New Railway Station at Leipzig (one of the largest in Europe with a span of 32 metres).

15. Machinenfabrik Augsburg, Nüremberg, by Ludwig Ruff.
16. Offices of Gebruder Schöndorff, Düsseldorf, by Phil. Schäfer.

16A. Bankgebände des Barmer Bank-vereins, Cologne.

17. Mausoleum at Regensburg, by German Bestelmeyer.
18. Cemetery Münchener-Friedhofs-Anlagen, Münich, by Hans Grässels.
19. Cemetery Waldfriedhof, Stuttgart, by Pantle.

(For two long and well-illustrated articles on "Funerary Monuments in Germany" and "Jewish Cemeteries and Monuments in Germany," see pp. 225 to 260, vol. 19, and p. 391, vol. 19, of the review "Berliner Architekturwelt.")

20. Kurhaus, at Baden-Baden, by Stürzenecker.

20A. Neubauten in Bad Kissingen, by Max Littmann.

21. Cabaret "Bonbonnière," Münich, by Peter Dauzer.

21A. Shop Geschäftshaus Schröder and Baum, Dortmund, by Adolf Ott.

22. Stadthalle at Cassell, by Hummell and Rothe.
23. Stadthalle at Hanover, by Scholer and P. Bonatz.
24. Customs House, Münich, by Richard Schachner.
25. Kaiser Wilhelm Monument, Coblenz.
26. Stone and Concrete Sluices on the Neckar, by E. Högg.
27. Public Baths, New Cologne, by H. Best.
28. Disinfection Hospital, New Cologne.
29. Cinema "Apollo," Karlsruhe, by Hermann Spieler.
30. Margarethen-Höhe Housing Scheme, Essen, by Georg Metzendorf.
31. Kolonie Canten der Zeche Viktoria-Mathias, Essen, by Oskar Künhenn and Büssing.
32. Siedlung aus Nordfriedhof, Cologne, by Wilhelm Riphahn.
33. Miethaüsergruppe, Darmstadt, by Albinmüller.
34. Arbeiter-Wohnhaus, Kolonie III, Wiesdorf.
35. Siedlung Alfredshof, Essen, by R. Schmohl.
36. Städtis he Kleinhaussiedlung, Hanover-Laatzen.
37. Siedlung at Cologne-Bickendorf, by Wilhelm Riphahn.

(There are many more of these "Siedlungen" or Housing Schemes, but the above are the most important. They are usually on a vast scale, and often display a civic or village centre.)

38. Gartensiedlung Köln-Birkendorf, by F. A. Breuhaus.
39. Siedlung Essen, by Josef Kings.

39A. Royal Anatomical Institute, Münich.

40. Royal Psychiatrical Clinic, Münich.
41. General Hospital, Düsseldorf.
42. Burgerspital, Frankfurt.
43. Lindenburg Hospital, Cologne.
44. Third Hospital, Münich,
45. General Hospital, Nüremberg.

In North Germany the following hospitals should be visited :—

Eppendorf Hospital, Hamburg. Virchow Hospital, Berlin, by Ludwig Hoffmann. The most up-to-date hospital in Germany. West End Hospital, Charlottenburg. Johannstadt Hospital, Dresden. Royal Charité Hospital, Berlin. St. Georg Hospital, Hamburg. Auguste Victoria Hospital, Schöneberg.

NOTE.—For more detailed information on the housing problem in Germany, see article bearing directly on that subject in the July 31, 1918, issue of this JOURNAL.

LIST OF BOOKS DEALING WITH THE ARCHITECTURE OF SOUTH GERMANY.

"Jahrbuch der Münchner Kunst" (yearly). (Benjamin Harz, Berlin.)

Julius Baum : "Gotische Bildwerke Schwabeus." (Benno Filser, Stuttgart, 1921.) (Gothic sculpture.)

E. Haufstaengl : Hans Stethaimer. (K. W. Hiersemann, Leipzig, 1911.) (Study of Late Gothic in Old Bavaria.)

F. F. Leitschuh : "Strassburg." (E. U. Seemann, Leipzig, 1903.)

Adolf Fuelner : "Münchner Barockskulptur." (Riehn und Reusch, Munich, 1922.)

Max Picard : "Mittelalterliche Holzfiguren." (E. Rentsch, Zurich, 1920.) (Carved wood sculpture.)

H. Reiners : "Rheinische Baudenkmäler." (B. Kühlenkunst-u. Verlagsanstalt, M. Gladbach, 1921.)

Richard Klapheck : "Dit Bankunst aus Nieder Rhein." (E. Wasmutt, A. G., Berlin, 1919, 2 vols.)

'Bayerischen Architekten und Ingenieur-Verein : München und seine Banken." (F. Bruckmann, München, 1912.)

Eugen Lüthgen : "Gotische Plastik in den Rheinlanden." (F. Cohen, Bonn, 1921.)

C. Giedion-Welcker : "Bayrische Rokokoplastik." (O. C. Recht, München, 1922.) (Bavarian sculpture.)

Old Architecture of Rhineland and South Westphalia.

Otto Schell : "Altbergische Möbel." (P. Vorsteher, Godesberg, 1921.)

Prof. Werdelmann : "Altbergische Haustüren. "(Ditto, 1921.)

Prof. Wilh. Kreis : "Altbergische Innenarchitektur." (Ditto, 1921.)

Frof. F. W. Bredt : "Altbergische Grabmacher." (Ditto, 1921.)

Max Hauffmann : "Geschichte der Virlichen Bankunst in Bayern-Schwaben und Franken, 1550–1780." (F. Schmitt, Münich, 1921.)

[Previous articles in this series appeared in our issues for March 21, June 13, July 11, August 8, and October 17, 1923.]

The Principles of Architectural Composition.—2

By HOWARD ROBERTSON, S.A.D.G., Principal A.A. School of Architecture

THE consideration of unity leads to an examination of the requirements of design necessary for its maintenance, and to the study of the manner in which a composition may be arranged in such a way that the designer will not be restricted to the use of merely a single unit or element, and may yet proportion a group of elements in a manner ensuring that coherence in the expression of his idea will not be sacrificed. In order that unity in composition should be maintained it is necessary that some central or focal idea in the composition should be clearly apparent, and should dominate the conception. We will call it, for convenience, the dominant. The dominant may consist of one single unit or element, or it may consist of a plurality of elements of varying sizes which form a dominating group. It is the relation of these elements to each other, and to the composition as a whole, which we call *proportion*, and it is a correct scheme of proportion in mass and detail which determines the unity or otherwise of a composition.

The rules of proportion are not capable of mathematical formulation by any method yet devised, and their appreciation and understanding are the cherished possession of the trained artist. The conditions of every problem in art are infinitely varied, and no formula can cover these variations which are themselves subject to the variations of the human mind and personality. It is possible, however, to indicate certain proportions which result in producing certain definite effects, and the employment of which have a direct bearing on the task of composition.

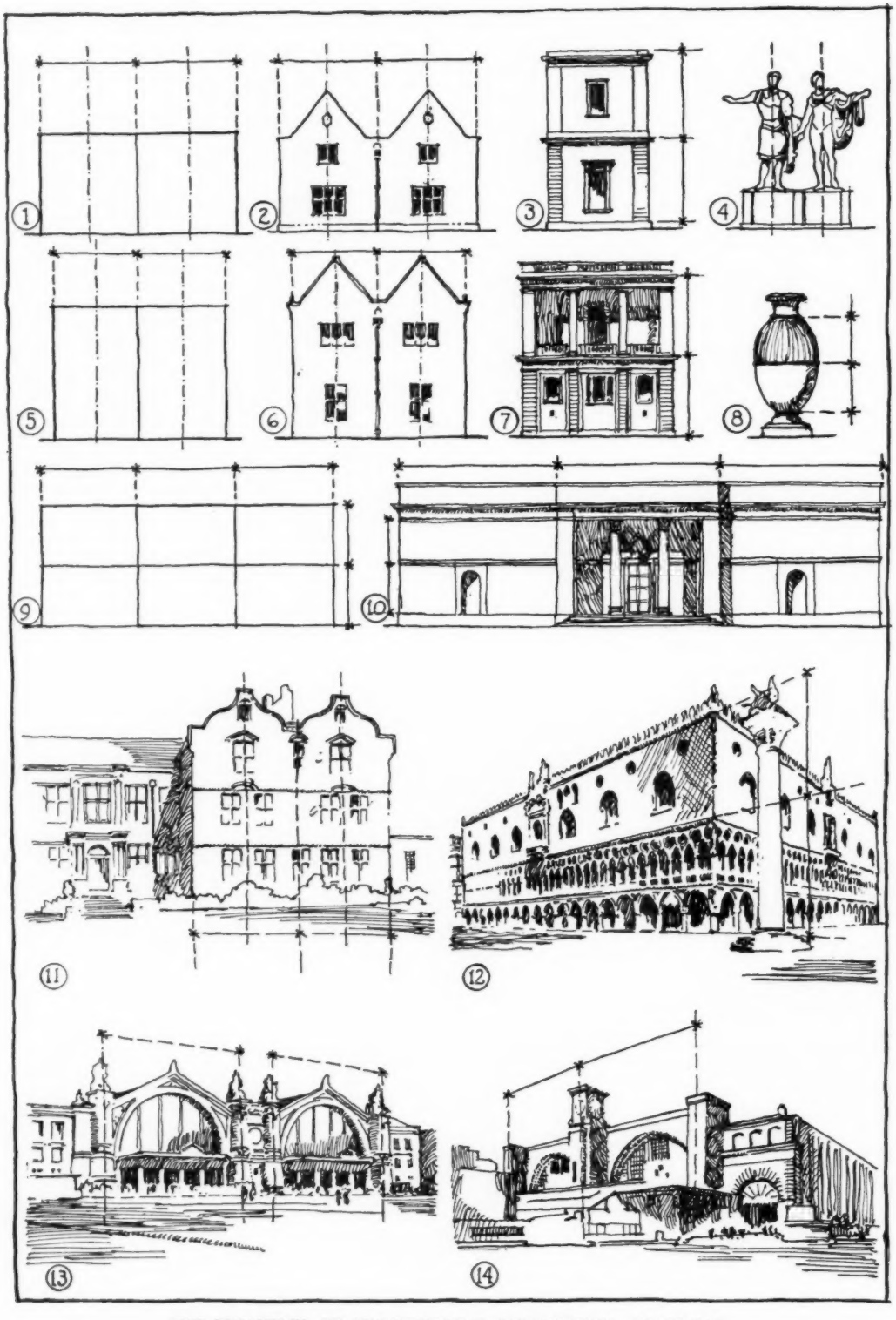
Let us suppose in considering a certain element or unit of form, that we create in it a line of division which will divide it into two parts thus suggesting the creation of two elements. These elements may be equal or unequal, and, as we have already stated, their ratio of size the one to the other, and to the unit as a whole, constitutes their *proportion*. If the division is into two equal parts, we have equality of proportion, and a tendency for our unit to be split in twain, thus weakening the impression of the original unity. The effect will be more marked according to the original proportions of the unit. If, for example, we have assumed a rectangle, the long side of which is twice the length of the short side, the division into two parts gives a resultant figure of two squares in juxtaposition (Fig. 1). The eye, accustomed readily to grasp simple shapes, immediately detects the presence of the two squares, each of which tends to become a definite unit, with the result that the unity of the original rectangle has disappeared, and has become a duality, both members of the duality being of equal value, and, therefore, competing with each other as objects of interest. We have, therefore, arrived at a proportion of subdivision which has succeeded in destroying unity, and has split up the original conception into two parts, eliminating the "dominant," and vitally weakening the composition (Figs. 2, 3, and 4). If, however, the original rectangle had been of such proportions that the subdivision resulted in two figures of less definite shape, less easily grasped by the eye as units, the bad effect would have still been present, but to a smaller degree (Figs. 5 and 6).

It is not necessary that the object which we are considering should be of symmetrical shape for the effect of its subdivision to be noticeable, the same effect of competition and weakening of unity being apparent, for example, in the case of a vase which has a fillet placed around its centre (Fig. 8). In such an instance, however, the difference of form in the masses which result from the subdivision, lessens the effect of duality, and prevents the eye from grasping it so readily. A similar effect of attenuating the appearance of equality may be attained by applying to one of the competing masses a difference of treatment or surface texture, which will affect its apparent "weight" as a mass (Figs. 7 and 12).

It has been sometimes held (cf. Trystan Edwards: "The Things Which are Seen") that any object having a proportion which admits of a ready subdivision into two definite units, such as the rectangle composed of a double square, is in itself inherently weak, it being suggested that the eye will automatically form such a subdivision, conveying a mental suggestion of duality. An instance of this would be the well-known example of the rectangular door opening having a proportion in height to breadth of 2 to 1. (It is further claimed by some writers that in addition the shape is uninteresting æsthetically on account of the monotony which the easily detected ratio of proportion conveys.)

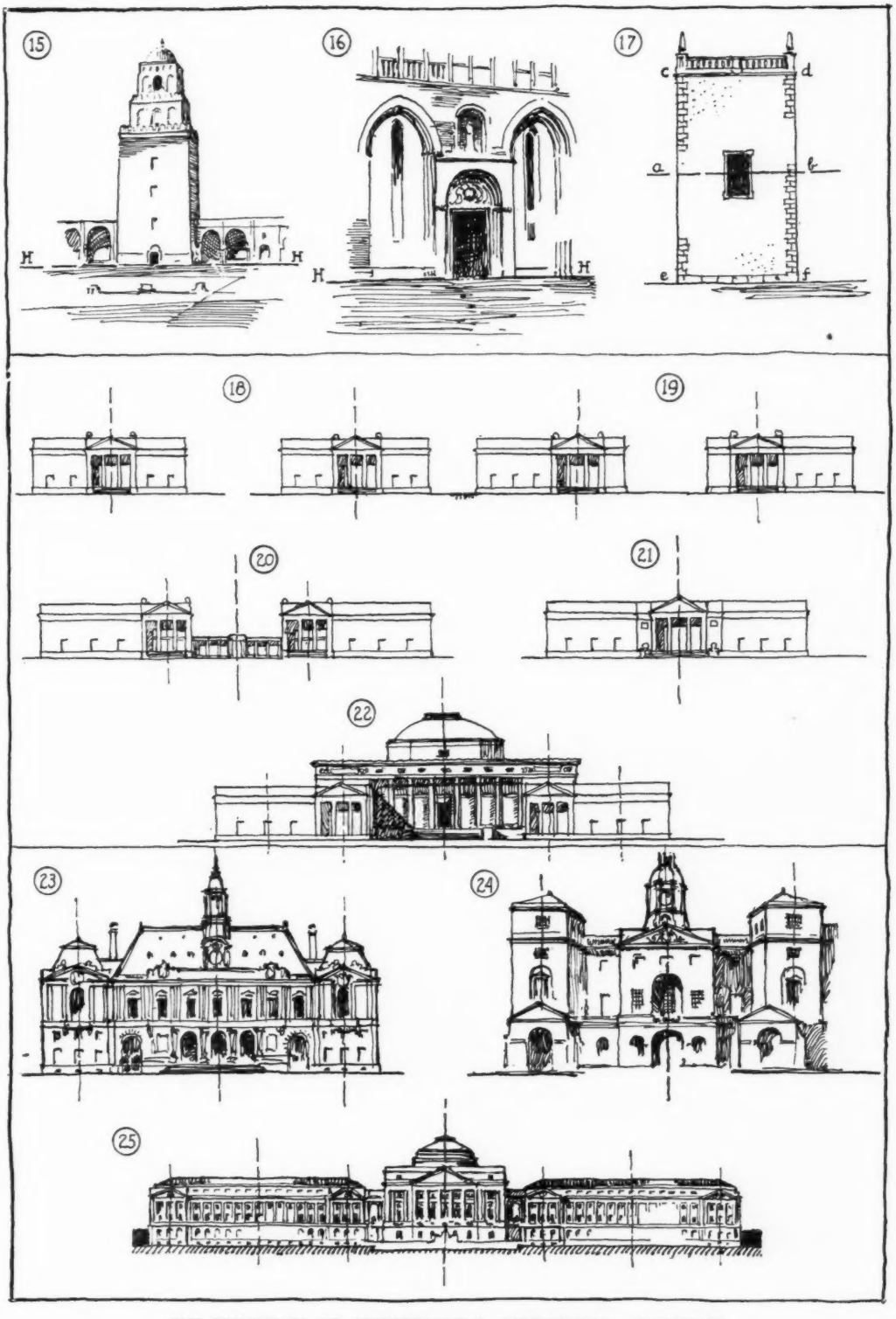
Such conclusions, however, take little account of other factors, which have an influence on the actual proportional ratio. An architectural element, such as a door, a window, the wall or ceiling of a room, has a distinct sense of direction or position, one might also say of movement, in regard to the eye of the spectator. The appearance of the doorway is affected by the fact that its threshold is on the ground, or upon a step, that its sides or jambs are contained by abutting wall surfaces, at right angles to the plane of the ground, and that the space of wall above the lintel may differ in weight, mass, or texture, from those containing the two jambs. This setting must be considered in viewing the doorway itself, and assists in stressing or diminishing the effect of vertically or horizontally which the proportions of the opening may produce *per se*. A large mass of masonry above the door will produce a crushing effect, tending to diminish by weight the vertical proportions (Fig. 15). In Fig. 16 the narrow vertical jambs and the arched head accompany the effect of verticality in the door and accentuate it. The presence of the ground line again tends to stabilize the composition on the line H H, and the eye does not instinctively seek the median division whose presence would create duality in the doorway as a unit. Should, however, the composition represent an opening in a wall space bounded by *c d e f* (Fig. 17), the obvious symmetry round *a b* would be much more apparent, and the danger of duality might arise. It seems open to question whether the eye does actually create mental impressions of divisions which are unfortunate, though it may suggest them if the general design lends itself to a decomposition into dualities. It is argued, for instance, that the proportions of the well-known "double cube" room are bad for this reason, and yet these proportions are recognized to have produced effects very generally accepted as satisfactory in practice. (The reason for this we will discuss in a later chapter.)

Effects of duality and competition produced by the equality of masses, such as those of walls, floors, and ceiling surfaces, are mitigated by the position of the spectator, whose eye can never be in a position to see them all at the same time and at the same angle. Wall, floor, and ceiling have also a different position in space, and the architectural "tying in" of walls to ceiling will make these "read together" instead of competing as would two equal surfaces on the same plane, one on each side of a horizontal or vertical axis. That repetition of actual physical dimensions very often does produce an unsatisfactory effect has been proved by experience, but the conditions where such repetition occurs vary infinitely, and the result may be different in each case. The street of Kingsway has been cited (cf. Trystan Edwards: "What is the Matter with the Kingsway?" "Architecture," March, 1923), as producing an unhappy effect on account of the height of its buildings approximating to the width of the street, producing equality in proportion and destroying the dominant in this composition of street and buildings. But here the case is scarcely the same



THE PRINCIPLES OF ARCHITECTURAL COMPOSITION: DIAGRAMS.

Figs. 1, 2, 3, and 4 illustrate the destruction of Unity by competing Dualities.
Figs. 5 and 6. Effect of Duality lessened where shapes are less strongly marked.
Figs. 7 and 8. Duality lessened by differences of tone and texture.
Figs. 9 and 10. Competition and destruction of Unity through equalities in a plural composition.
Fig. 11. Tendency towards Duality in the Treasurer's House, York.
Fig. 12. The Doge's Palace, Venice. Competition between ground and first stories lessened by contrast of treatment.
Fig. 13. The Station, Tours. A marked Duality.
Fig. 14. King's Cross Station, London. A more successful attempt to overcome Duality.



THE PRINCIPLES OF ARCHITECTURAL COMPOSITION: DIAGRAMS.

Fig. 15. Minaret of the Grand Mosque, Kairouan. The apparent proportions of door opening affected by surrounding crushing mass.
Fig. 16. Basilica di S. Antonio, Padua. The verticality of the doorway accentuated by accompanying verticals.
Fig. 17. Tendency towards Duality in proportion of window increased by conditions of its setting.
Fig. 18. Duality.
Fig. 19. Duality lessened by focussing interest towards centre.
Fig. 20. Unity produced by a "link" element.
Fig. 21. Complete Unity.
Fig. 22. The two original elements unified by the introduction of a Dominant third element.
Figs. 23, 24, 25. The use of the Dominant to provide Unity in compositions of Plural elements. (The Hotel de Ville, Tours; Horse Guards, Whitehall, London; Design for U.S. Department of Agriculture, Washington, U.S.A.)

as that of an internal room having equality of dimensions between walls and ceiling. The ceiling of the room ties the walls together, thus stressing the impression that the room is a unity. The sky above London leaves the two groups of buildings on either side of Kingsway isolated merely as two vertical masses, of almost unlimited length, standing on a horizontal plane, unattached to each other, and severally competing in height with the width of the thoroughfare.

The presence of duality, the splitting up and weakening of unity, is one of the most common defects in architectural composition. It is a rule of the grammar of composition that absolute duality should be avoided, and that no composition should consist only of two equal and detached elements which compete with each other and form in reality two individual and similar compositions set side by side, each with its own axis of symmetry or centre of interest.* A composition such as that produced by the two equal buildings in Fig. 18 has balance, but also dual centres of interest, and it is necessary to examine by what means a feeling of unity may be restored.

The natural inclination is to bind the two buildings together in such a way that they may form a unity, thus eliminating the two centres of interest and creating one centre for the whole. The link which we may introduce becomes a third element in the composition, an element which actually exists, or the presence of which may be implied by suggestion, though in this case the feeling of unity will be less frank and complete. The obtaining of unity will be assisted by any device which tends to shift the existing dual centres of interest in directions bringing them closer together, that is towards the position which would be occupied by the link element if such existed. A shifting of the two centre motifs on the buildings shown in Fig. 18 towards the centre of the composition would assist in this object, and the effect would be shown in Fig. 19, viz., to produce two elements which were *complementary* to each other and which do not have such strongly marked and independent axes of symmetry and centres of interest as those in Fig. 18. Such an effect in composition exists in Wren's Greenwich Hospital as it stands at present (cf. "The Things Which are Seen"), but while the suggestion of unity is improved, it is not as complete as would be the case were it possible to merge the two complementary buildings one into the other (Fig. 21), or introduce a third element to complete the composition and make of it what amounts to a single unit (Fig. 20).

As an alternative to a composition resulting in a single unit, it is equally possible to retain the original two buildings, each with its independent centre of interest, and to unify them by the introduction of a third building which will completely *dominate* them, having the necessary mass and importance to create a unique and much stronger centre, to which the original centres become subservient (Fig. 22). We have in this case a composition formed of a plurality of elements in which there are three centres of interest, but the central one of which forms the necessary *dominant* to produce unity. The exact relationship of the elements in such a composition becomes a matter of proportion, and cannot be determined other than by cultivation of the æsthetic sense, though we have the general guidance of the rule that the proportions must be such that there will be no competition or hesitation resulting from equalities, and that the dominant must frankly dominate. *In effect, it is a golden rule in proportion that there must be no hesitation or weakness.* A happy proportion will be such that it appears inevitable and unalterable, and it is therefore indispensable that proportions be unhesitatingly expressed.

* We are enunciating this rule in a broad sense, for it is of course not without its exceptions. A duality may be intentionally introduced on account of its very weakness, to split up, for example, some element in the composition which might otherwise be overpowering. An example approximating to such a case is that of the Treasurer's House at York (Fig. 11). If the projecting wing had been treated as a perfect unit it might have been overpowering. Here is a case where too great strength might have upset the balance of the composition.

[The foreword to this article appeared in last week's issue of the JOURNAL.]

(To be continued.)

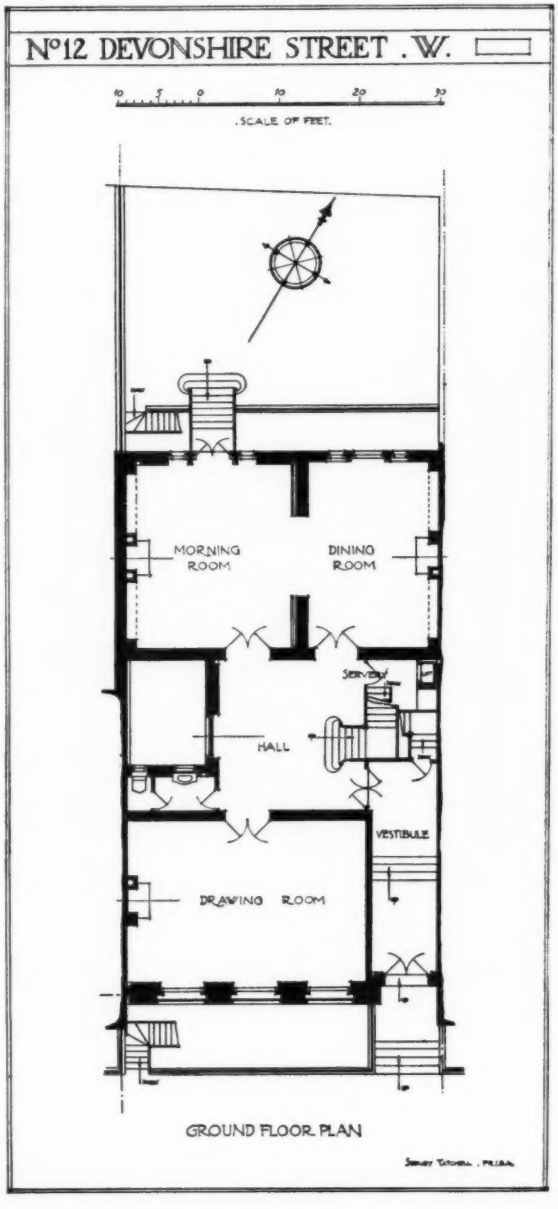
A Town House in Devonshire Street

Sydney Tatchell, F.R.I.B.A., Architect

To-day town houses are more likely to be pulled down than put up, and there are few that have not passed out of the occupancy of their original owners. Apart from the erection of large blocks of flats, the town houses erected since the war can be counted almost upon the fingers of both hands.

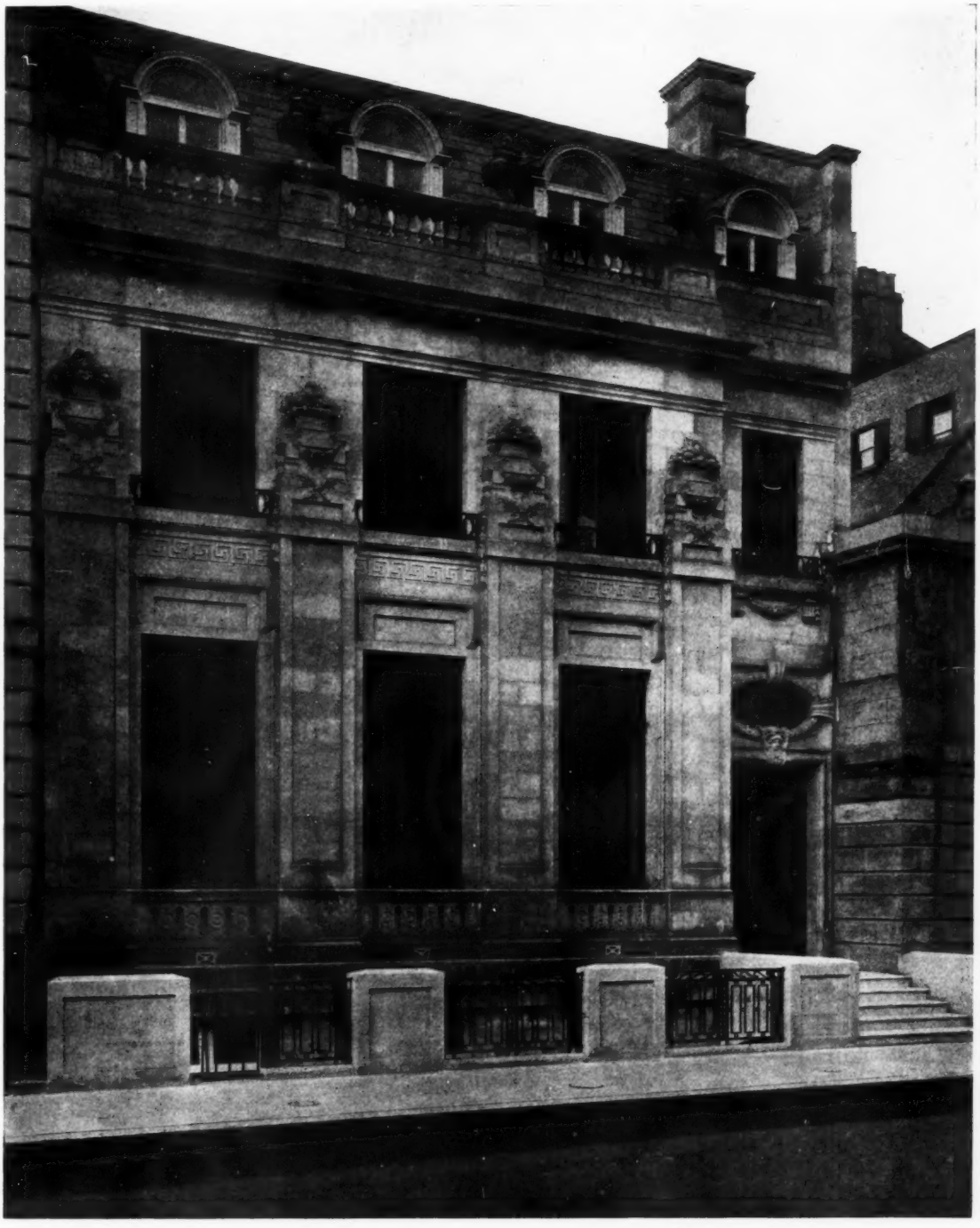
The house illustrated is No. 12 Devonshire Street, and it was designed to afford a spacious entrance and large reception rooms. The façade, which is French in feeling, is very broad and imposing, and is a departure from the modest fronts of the older London houses which usually reveal nothing of the spaciousness and magnificence of their interiors. The front is executed in Portland stone, Mr. A. J. Thorpe being responsible for the carving. A water-colour drawing of the building was hung at the Royal Academy in 1915.

Messrs. James Smith and Sons, Ltd., of New Bond Street, were the General Contractors; Messrs. Jeffreys & Co., Ltd., installed the heating apparatus.



Modern Domestic Architecture. 72.—No. 12 Devonshire Street, W.

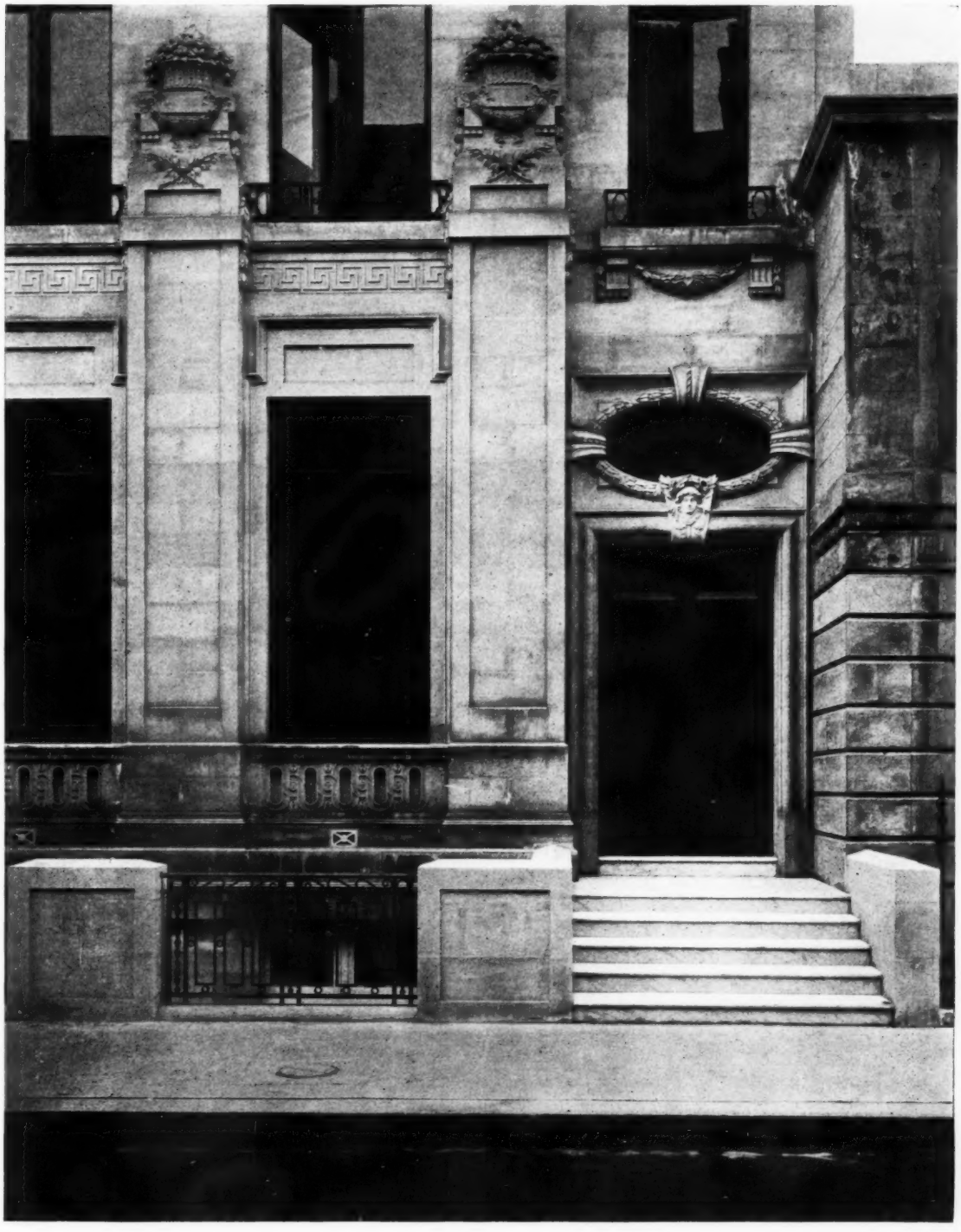
Sydney Tatchell, F.R.I.B.A., Architect



The broad façade of this town house, with its French feeling, is rather more imposing than the usual London residence, whose front often seems to have been designed to conceal, rather than indicate, the interior splendour. It is executed in Portland stone.

Modern Domestic Architecture. 73.—No. 12 Devonshire Street, W.

Sydney Tatchell, F.R.I.B.A., Architect



(*See Notes on page 152.*)

An American Architect on Bush House

MR. IRVING K. POND, writing in the "Journal of the American Institute of Architects," says that sometimes he has felt that the kindliness with which the British accept more or less favourably certain American professional methods and designs, is due, now and then, more to the fact that they are American than from the exhibition of a fine sense of discrimination. As a case in point he cites Bush House. He says: Once again, as it seems to me, our brothers have, in their desire to be kindly, lost a bit of their sense of proportion.

Extravagant praise has been lavished on this particular structure by editors of the architectural Press and by others, and, I repeat, for slight reason, it seems to me, other than that it is an American product; and small compliment it is to us and to our real achievements. Its grandiose portal, wasting space to no good purpose, is the only typically American feature about it. My own feeling is that externally it is barren and distinctly lacking in any element of charm. Its fenestration does not proclaim the office building. (I take it that is its intended use.) It may be all right in seasons of London fog, when lights have to be burned anyway, but I have known beautiful sunshine in London, when its warmth and light would be acceptable in even a commercial interior.

Our kindly critics argue that Bush House does not overpower (the word needs definition) St. Mary-le-Strand, but rather that it acts as a foil to bring out the beauty of the church; and a photograph with the church in the immediate foreground is offered in evidence. I think, at this distance, I can trust my feelings and imagination as far as I can the distorting lens which magnifies objects in the foreground and diminishes those in the background. I rather suspect that when the two flanking wings of Bush House are erected, St. Mary-le-Strand, in so far as any power of self-assertion is involved, will be in the situation of the mother partridge upon which the benign elephant had inadvertently trodden. Is it the box-like piling up of diminishing masses—I am thinking of Bush House with its completed tower—that the English find particularly pleasing? One sees the feature so frequently along London streets, especially those trodden by the late Sir Christopher. Somehow that principle in design never greatly appealed to me.

Mock-Turtle or Guile Defended

By CLOUGH and A. WILLIAMS-ELLIS

MOST practising architects have come across the set of opinions which can be expressed by a single instance: "That sham marble is an abomination." But we believe that the feeling against architectural shams is largely due to false analogy. On the surface it hardly sounds quite nice to encourage shams in any sphere, and so for a long time the doctrine of "honest ornament" was never contraverted.

But it is surely arguable that unless building is to be chiefly a matter of plutocratic display, cheap shams, where they can be made to produce the necessary effects, must logically be preferable to the expensive reality. The difficulty will, naturally, be found to be, that in practice shams are unfortunately too often inadequate, and the use of a bad sham may obviously coarsen the palate. But the prejudice which exists against them is often independent of merit.

Just before the war the author was to put in a set of six sienna marble columns in the hall of a big new house. He naturally proposed scagliola, which is sometimes thought preferable to natural marble, because its "grain" can be controlled. The only way in which it can be distinguished from what it imitates is by tapping it. The cost in England is a fraction of the real thing.

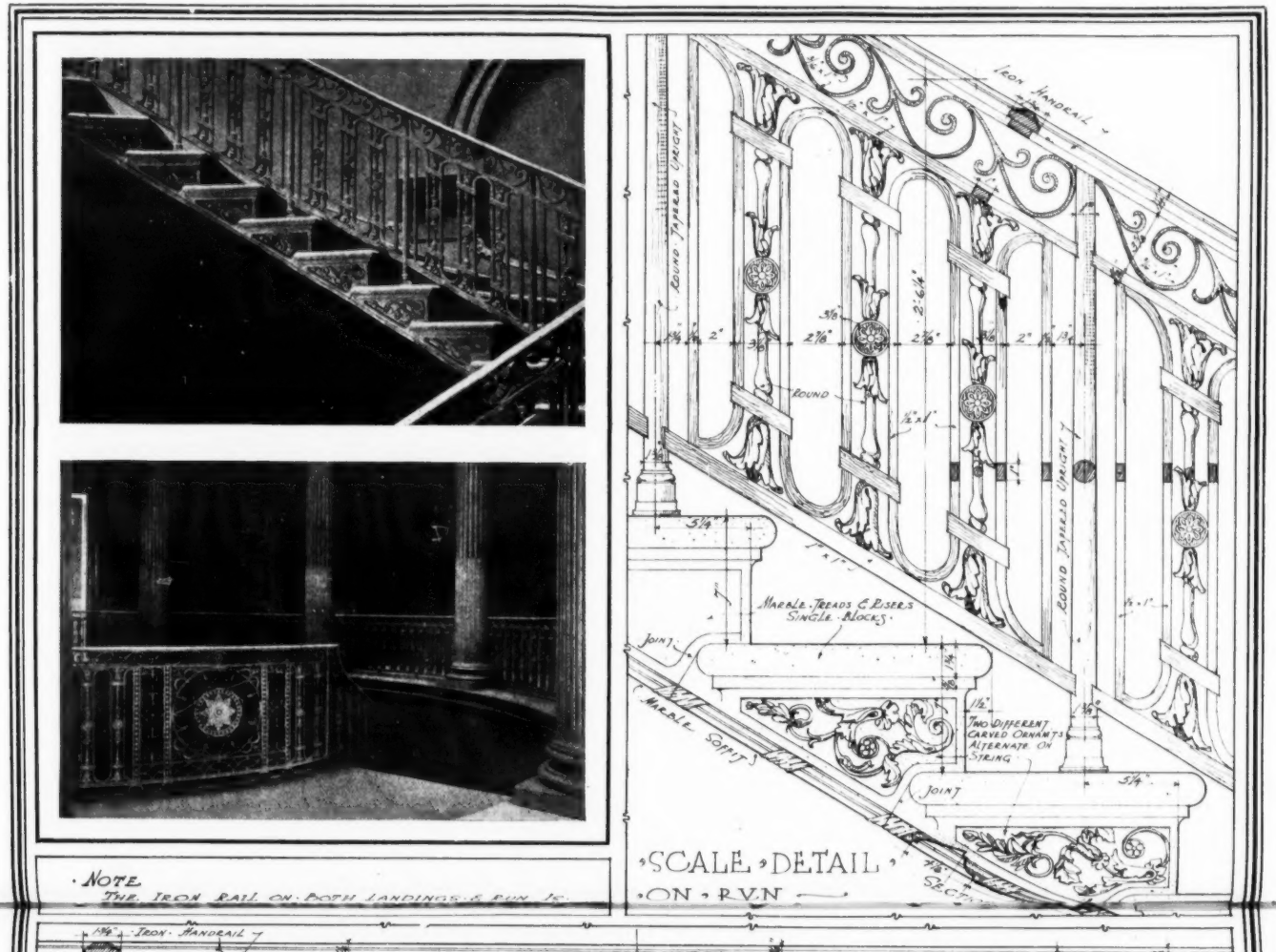
But the client was a man of strict views, and it was with the very greatest difficulty that he could be persuaded to agree to the use of anything that was not genuine. He felt that to have pillars that looked exactly like marble but which were not marble, put him in a false position. He would have agreed with Ruskin, who declared that much of our pleasure in the sight of, say, lapis or porphory, came from a knowledge that it was rare, and that to procure it involved great labour. To use a synthetic, unlaborious form of such a material seemed to him to be to take credit for work one had not done. But surely such a view will very soon involve us in admiring the work of the handless artist who paints with his toes, or the man who carved the Lord's Prayer on the head of a pin? Can a piece of carving in soapstone be less good than the same design done in granite only because it was more easily worked? Surely not. The granite cannot properly be admired for qualities which it has not got. You may infer, you cannot see the labour spent upon it. Granite will, in practice, often be superior because in the harder material the edges of the carving will be sharper, but the extra labour is neither here nor there.

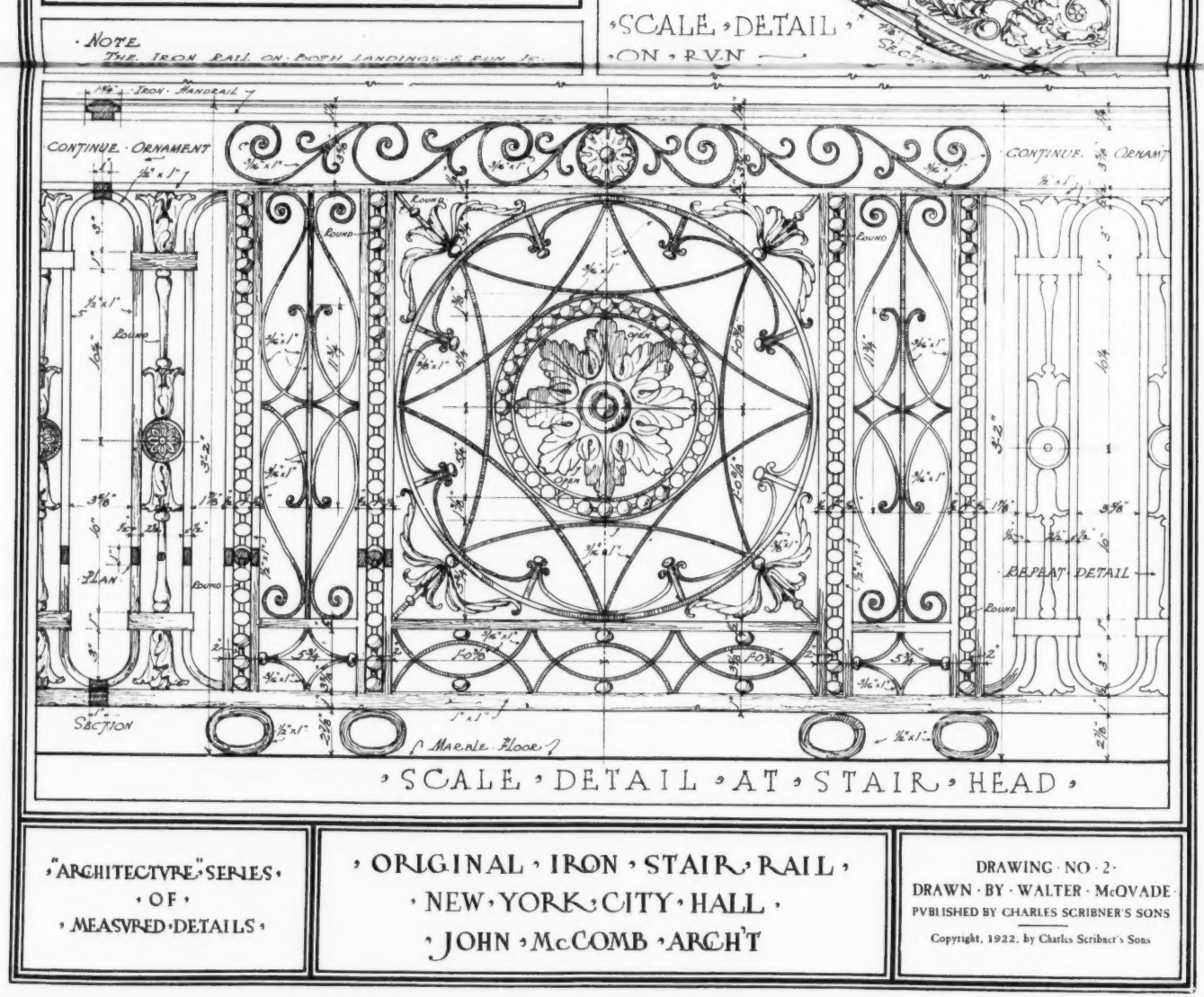
It is an odd thing, but we never try to apply these standards to literature. For a dull passage in an essay the reader will very probably hold it no excuse that the author had influenza when he wrote it, and that its composition, therefore, cost him tears of blood. A work of art, bad or good, is a thing in itself to be judged ruthlessly, by its own standards. Barbellion's diary is not valuable because it was so hard for so sick a man to write it, nor "Paradise Lost" because Milton was blind. Their value is intrinsic. A poem is not beautiful because the poet has chosen to write it in a difficult metre; nor does the sweat of men and horses hauling columns from the quarry add one jot to the lustre of the marble.

It would, of course, be easy, and even perhaps entertaining, to combat the taste for "the real thing" in the Ruskin manner. We could denounce it as gross, materialistic, snobbish, plutocratic, and unchristian—dismissing it finally as an æsthetic fit only for a Nero. It might, however, be more to the point to try and see whether there is anything in it at all. There are clearly dangers about the use of an imitation. The first is, as we have said, that a bad, yet would-be realistic, imitation of marble or bronze, may coarsen the æsthetic palate much in the same way that it is coarsened by bad three-colour reproductions of good pictures. The second is that sham jewels tend not to be so well set as real ones. If he uses sham materials the architect must make up his mind to treat them with just as much care and respect as if they were real. He may even have to use more. For instance, in certain positions paint on glass can be used most effectively for marble. But the architect—supposing he wants to produce an effect of marble—must be sure not to plan his design so that a different lighting, or close approach, destroys the illusion. Of course, in most cases he will not desire an illusion of marble or bronze at all, but only an allusion to them, where he will use a sort of free rendering that will give him an equivalent effect of colour and surface and will recall the associations of the real material.

Architectural Details. 49.—Original Iron Stair Rail, New York City Hall

John McComb, Architect. Measured and Drawn by Walter McQuade





The above plate is reproduced from the "Architecture" series of Measured Details, a notice of which appears on page 172.

An Architect-President of the Royal Scottish Academy

The Election of Mr. Washington Browne

MR. G. WASHINGTON BROWNE, R.S.A., the well-known Edinburgh architect, was, at an assembly of academicians held last week, elected president of the academy in succession to Sir James Lawton Wingate, resigned. Three other members were nominated: Mr. J. Pittendrigh Macgillivray, Edinburgh, sculptor; Mr. James Paterson, Edinburgh; and Mr. J. Whitelaw Hamilton, Glasgow, artists. The final vote for the presidency was between Mr. Washington Browne and Mr. Macgillivray, but it was afterwards agreed to make the election unanimous. This is the first time in the history of the academy that any member other than a painter has been elected president, and by Mr. Washington Browne's election both the Royal Academy and the Royal Scottish Academy have architects at their head.

Mr. Washington Browne, who is in his seventy-first year, was born in Glasgow in 1853, and received his early training there. He afterwards went to London, where he served under one or two architects of distinction and gained the Pugin Travelling Studentship in 1878, being the first Scotsman to secure the honour. On returning to Scotland he became a partner with Dr. Rowand Anderson, and afterwards designed, himself, the Edinburgh Public Library and the Sick Children's Hospital. He has made a special study of library planning and construction, and besides erecting several libraries throughout the country has acted as adviser and assessor to library committees. Mr. Browne entered into partnership with Mr. J. M. Dick Peddie, and the firm erected a considerable number of banks and insurance company buildings. Among the buildings of this description with which the firm's name is identified are those of the Standard Life Assurance Company, in George Street, Edinburgh, the offices of the Scottish Provident Institution, and of the Scottish Equitable Life Assurance Society, both in St. Andrew Square, Edinburgh.

Mr. Browne was elected an Associate of the Royal Scottish Academy in 1892, and a member in 1901. In 1917 he served as treasurer. He was president of the Royal Edinburgh Architectural Association from 1884 to 1886. One of his most recent works was the designing of the Scottish National Memorial to King Edward at Holyrood, which the King unveiled in the autumn of 1922.

The late Mr. Clutton-Brock

WE deeply regret to announce the death of Mr. Arthur Clutton-Brock of the Red House, Godalming, at the age of fifty-five. In him the public lose a critic of art and letters and an essayist of remarkable range and power.

Mr. Clutton-Brock was art critic of "The Times" until his retirement a few months ago owing to ill-health. Born in 1868, and educated at Eton and New College, Oxford, he was called to the Bar in 1893, but after some ten years abandoned practice in order to devote himself to literature and journalism. He was for two years literary editor of "The Speaker," and was art critic of "The Tribune" during the brief term of its existence. He joined the staff of "The Times" in 1906. He was the author of a number of widely-read works on literature, art, and religion, among them being "Shelley, the Man and the Poet," "Thoughts on the War," "Simpson's Choice: An Essay on the Future Life," "Studies in Christianity," "Essays on Art," and "Essays on Books." He leaves a widow and three sons, having married in 1903 Evelyn Alice Vernon-Harcourt, a cousin of Sir William Harcourt.

In an appreciative notice in "The Times" a writer says: Clutton-Brock's interests were many, and his enjoyment of them Hazlittian. As an undergraduate, he would talk, pipe in mouth, by the hour about poetry, music, painting; and everything that he said—even the wilful and extravagant things—gave evidence of his delight in the subject, his independent study of it, and the original thought which came in maturity to be his strongest weapon. Later in life he added gardening to his pleasures. His gardens, first at Farncombe, near Godalming, and then at the Red House, Godalming, were not intended to be "show-places." He rather enjoyed making them out to be more unkempt than they were. But he loved flowers with the same original and experimental passion as he felt for books and music and pictures; and the articles on gardening which he wrote for "The Times" (early series were collected in a little book) were something new in their directness, their adventurousness, their combination of practical advice and experience with good literary expression of the writer's joy in his successes and interest in his failures.

On Morris he wrote a book (1914) which is, perhaps, the best piece of sympathetic criticism of Morris, as artist and as socialist, that has been written; and the influence of Morris's ideas may be traced in all his many pronouncements on art in general, and on its relation to life, politics, and religion. His little work on some cathedrals of Northern France is perhaps the purest example of his criticism and of his English prose.

A Great Writer of the Press

The London correspondent of "The Manchester Guardian" writes: Only those intimately acquainted with the journalism of our time can estimate what a loss—what an irreparable loss—is the death of Mr. Clutton-Brock. We have many writers on æsthetics, but a great weakness of our time is an absence of writers concerned with the humanism of art. All our chief art critics save Clutton-Brock seem to conceive art as a separate thing from life, or at any rate show no great concern to relate the concept and function of art with the life of the time in which it flowers. He was to that extent on the side of Ruskin and Morris, the latter of whom exercised continued influence throughout his life.

Clutton-Brock was at once the most persuasive and didactic of critics. He created the eye of sensibility in thousands of readers. He was wrong now and then, but most of his judgments—some of them very unpopular at the time—would be accepted now as right. In the test cases of Walter Greave, Stanley Spencer, Epstein, Duncan Grant, and Lamb he was ahead of the times, and he helped everyone to see the quality and character of their gifts. In personal argument he was almost impossible to resist. His arguments were pointed with the most unexpected and arresting images, and he had a way of piercing the stoutest armour by his engaging candour and deep reinforcements of learning and mental experience.

Modern Domestic Architecture. 74.—A House at Hagley

Gerald McMichael, A.R.I.B.A., Architect

A GENERAL VIEW.

PLAN OF THE GROUND AND BEDROOM FLOORS.

This house was built with cavity walls having brindled brick facings; the roof was covered with Hartshill hand-made tiles. All the windows are standard iron windows let into wooden frames painted white. Inside an old oak staircase with turned balusters was fixed, and added considerably to the general effect in the hall. The work was carried out by Mr. W. T. Harmon, of Oldswinford.

The Taunton School War Memorial Competition

A Criticism of the Designs

Taunton School is to be congratulated upon the response to its invitation for competitive designs for its war memorial, which is soon to materialize in the form of a building to add to the equipment of the school. In this case an art and science block was required, at the cost of £10,000. Forty-three designs were submitted, from which the assessor, Mr. Robert Atkinson, F.R.I.B.A., in collaboration with Mr. Howard Robertson, S.A.D.G., made the following awards :

First (£100)—Mr. E. Vincent Harris, 29 St. James's Square, S.W.1.

Second (£50)—Mr. A. C. Pickford, 33 Calbourne Road, S.W.12.

The designs submitted by the following competitors were commended : Messrs. William and T. R. Milburn, Sunderland; Messrs. R. S. Dixon and N. D. Quick, Letchworth; Messrs. Gordon H. G. Holt and Verner O. Rees, W.C.1; Messrs. Cooke and Harrison, W.C.1; and Messrs. Willink and Dod, Liverpool.

The winning design, which was illustrated in our last issue, is an able solution of the problem. Due emphasis has been given to the memorial character of the building by a central hall approached by a vestibule, and lighted by an oriel window. The memorial tablet faces the main entrance, and the desired "focus" will be well secured by the symmetrical planning, and the double flight of stairs leading to the second story. All the accommodation asked for has been skilfully provided by two two-story blocks, linked together by the hall. The question of lighting has been carefully studied throughout, and the handling of the top-lights without destructive results to the elevation is distinctly clever. The front and end elevations respectively (the latter in this instance being important) are symmetrical and harmonize admirably with the existing group of buildings. The mistake of a dominating central feature made by some of the competitors has been avoided.

The winner of the second premium has solved the problem very differently by arranging the accommodation on three floors. We consider the memorial loggia an unnecessary expense in view of the fact that the additional accommodation which was desired has not been given. The two upper floors are approached by a single 4 ft. staircase, which we think inadequate.

Messrs. William and T. R. Milburn have made a successful effort to "departmentalize" by placing the art room alone on the second floor, and the physical and chemical departments on respective floors below. This plan would appear to be good, but it works out rather too expensively. The elevations are suitable, but we doubt whether roughcast is appropriate for a building of this class.

Messrs. Holt and Rees have submitted two good designs, one for a two-story, and the other for a three-story, block. The plan of the latter, which we think more satisfactory than the other, is similar to that of Messrs. Milburn. The elevations show a powerful brick treatment with an interesting grouping of windows.

Messrs. Willink and Dod have sent in a striking set of drawings, beautifully rendered in the Beaux-Arts manner. A refined study in eighteenth-century work is, however, hardly in keeping with the other buildings of the group. The pitch of the roof is, we think, rather too flat for the lofty flèche. It is incredible that such a building could be erected at 11½d. per foot cube. Compared with this, the design by Messrs. Dixon and Quick appears somewhat weak, but it is a more successful effort to provide a balance to the plain Georgian left wing. The plan is symmetrical and well thought out, but the scheme generally lacks inspiration, and fails as a memorial to fallen heroes.

It is obvious that many of the designs are wide of the mark as to cost.

After going through the whole collection of drawings we return to those of Mr. Vincent Harris with the firm conviction that he has grasped the essential points of the problem and has succeeded in presenting to Taunton School the building they require.

Sounds in Cathedrals

In addition to the short report of Mr. Hope Bagenal's lecture on acoustics at the Scientific Novelties Exhibition, which we published in the JOURNAL last week, we now give the following notes :—

Mr. Hope Bagenal said that it was important for the general public to dismiss popular notions on the subject and to formulate requirements that were not conflicting. It was not possible, for instance, to get good chamber music effects in the Albert Hall, nor was it easy to design a building that should be equally good both for choral music and for the speaking voice. It might happen to anyone that he or she be called upon to speak in public. Speech was a progression of syllables, and if the syllables were distinctly emphasized the words would look after themselves. Good hearing was dependent at least as much upon the speaker as upon the auditorium.

Some speakers preferred open-air conditions, and some speakers preferred church conditions. Here at the outset was a fundamental distinction. It was a distinction between the man who liked to rely upon his own voice for power, and who liked the distinctness of syllables experienced in the open-air, and the man who preferred the reinforcement given to his voice by a building, even at the expense of good articulation. Corresponding to these two preferences there were two types of auditory, namely, the Greek theatre, embodying open-air conditions, and the Gothic cathedral, embodying extreme church conditions. In the Greek theatre people could listen to dialogue at 200 ft. When we consider that the remotest seat in His Majesty's Theatre is 95 ft. from the stage this must appear as a great achievement. Good hearing in a building, therefore, is not quite a scientific novelty. On the other hand, the Gothic cathedral, converse of the Greek theatre, developed choral music to its highest achievement in the polyphonic music of Vittoria, Palestrina, and the great English masters. Mediæval music was the direct outcome of the acoustic conditions of the cathedral. This music can be heard any day at Westminster Cathedral. It is different from modern music in having no strict time element and does not proceed by beats. The long reverberation of the church is part and parcel of the musical effect. In a large cathedral the reverberation may be five seconds for a syllable, or ten seconds for a note on the organ. The rate of speech is roughly four syllables a second. This means that in a lively sermon in a cathedral syllables assemble on the ear twenty at a time. New preachers in St. Paul's Cathedral used to be warned that their sermons must consist of only half the number of words that they would use in a parish church. It is not possible in a cathedral to get both distinct utterance and, at the same time, fine tone effects of the best choral music. In the Greek theatre, on the other hand, the reverberation was quite short. The voice was reinforced only by useful reflecting surfaces behind the stage and in front of the stage. The hard-paved orchestra space not continuously occupied by the chorus was a most useful reflector. Its value can be experienced at any performance in the Greek theatre at Bradfield College. All sound reaching the audience was absorbed and not returned, and the open-air roof was also 100 per cent. absorbing. It was when the classical theatre attained the enormous dimensions of the Alexandrian and Roman period that the strain on the voice caused difficulties. Hence the acoustic vases. Our only evidence for *echeia*, or acoustic vases, is the work of Vitruvius, but reinforcement of tones by enclosed volumes of air is perfectly right in principle. The expectation seems to have been that one or other of the vases, designed to respond to notes in the musical scale, would reinforce the vowel-sound of the actor.

The Practical Design of Steel Beams and Pillars in Buildings.—4

The Use of Manufacturers' Handbooks

By W. BASIL SCOTT, M.I.Struct.E.

IN article No. 2 of this series (October 17, 1923) I commented on the utility of manufacturers' handbooks, and stated that a knowledge of statics enabled these to be used to best advantage. At the same time I admitted the possibility of sections being selected from these books without a knowledge of statics being involved, and at the request of a number of readers this article has been written to illustrate what can be done in this way.

The general principle is that the various concentrated and partially distributed forms of loading on steel beams in buildings may be transformed by means of the diagrams and simple formulæ of the manufacturers' handbooks into equivalent uniformly distributed loads so that sections may then be selected directly from the tables. Also, that the tables may be used to check the efficiency of the sections selected as regards deflection, shear, rivet pitch, and, in addition, economy.

An equivalent uniformly distributed load is a uniformly distributed load that will produce a maximum bending moment of the same value as that produced by a given system of concentrated or partially distributed loads or any combination of these.

The majority of the manufacturers' handbooks include diagrams and formulæ showing how the maximum bending moments due to various systems of loading may be calculated.

Let M = maximum bending moment.
Let W = load.
Let L = span.

Then for a uniformly distributed load :— $M = \frac{WL}{8}$

Whence $W = \frac{8M}{L}$

This formula shows that if M, the maximum bending moment for any system of loading, is known it is only necessary to multiply it by 8 and divide the product by L, the span, in order to arrive at W, which is the value of the equivalent uniformly distributed load.

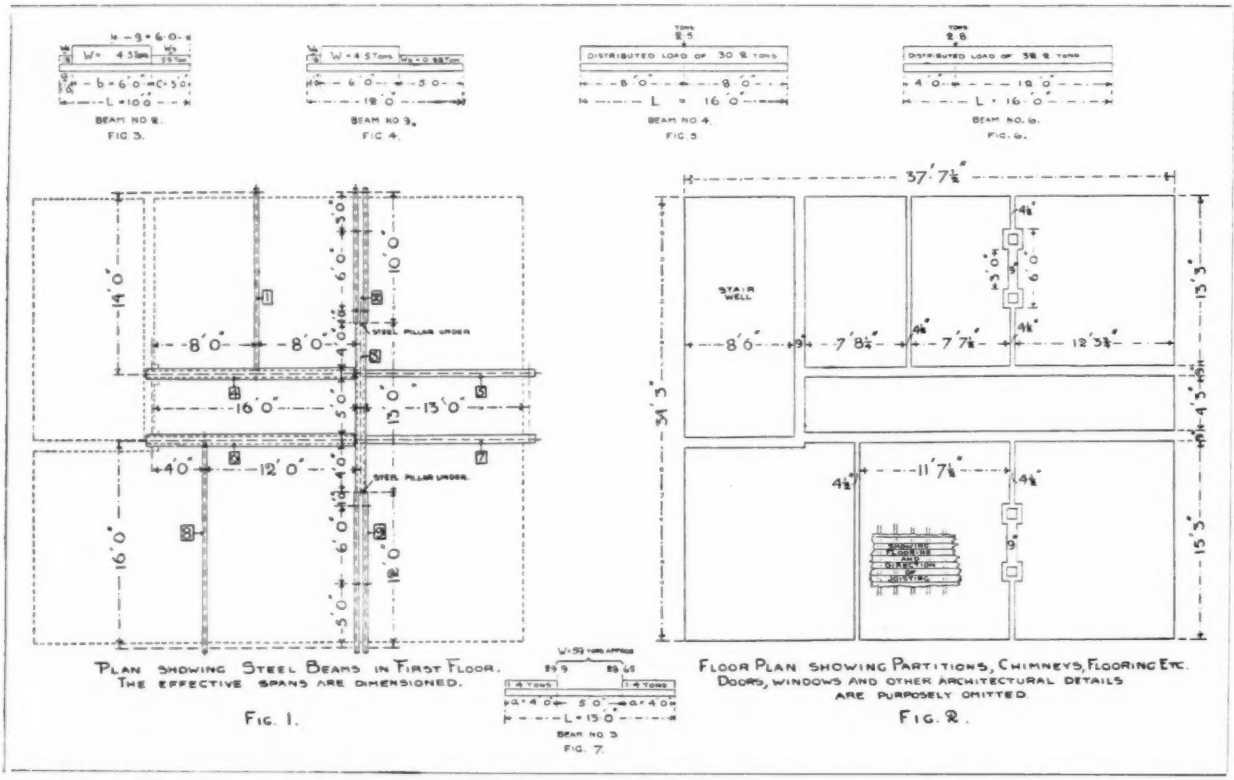
B, W, and L must be in the same units of measurement. If M is in foot-tons then L must be in feet, and the answer W is found in tons. If L, the span, is in inches, then M must be in inch-tons, and so on.

With some of the simpler forms of loading the equivalent uniformly distributed load may be found directly without the intermediate step of calculating the bending moment. Formulæ for these simple conversions are also to be found in manufacturers' handbooks.

In an arrangement of steel beams supporting and supported by each other, it is necessary to calculate the value of the proportion of loading transmitted from one beam to another, as such proportion, termed a reaction, becomes a concentrated load on the beam supporting it.

Reactions are calculated, for any system of loading, by a simple application of the law of the lever; and, again, the method is illustrated in the manufacturers' handbooks.

If the system of loading is symmetrical, relative to the centre of the span of a beam, the reaction at each end of the beam is equal to half of the total load.



THE DESIGN OF STEEL BEAMS AND PILLARS : DIAGRAMS.

If the loading is heavy and the spans are short, it is necessary to know the values of the reactions to check the strength of the beam for shear, and, in the case of a compound girder, for rivet pitch.

In ordinary circumstances, if the span of a beam does not exceed 24 times its depth, and the working stress does not exceed 7.5 tons per sq. in., corresponding to a factor of safety of 4, it is accepted generally that the deflection due to a uniformly distributed load will not be excessive, its value being approximately $\frac{1}{260}$th of an inch per foot of span; but if ceilings are to be plastered it is better that the span should not exceed 20 times the depth of the beam. The amount of the deflection of a beam over a given span is variable in accordance with the amount and the manner of the loading. Perhaps it is not generally recognized that all beams of equal depth and span, stressed to the same working stress by similar loading, will show the same amount of deflection, irrespective of their areas, and that the only ways, two in number, by which the deflection can be reduced are either to lower the stress by an increase of area at the cost of economy, or to increase the depth if architectural considerations permit.

In structural steelwork the term "span" is properly understood to mean the "effective span" or the distance between the centres of bearings and not the "clear span" or distance between walls or pillars. In practice, however, the calculations for loads in ordinary buildings are not taken out to such a degree of accuracy that it is necessary to make nice distinctions between the two definitions of the term.

A Practical Example.

All these principles just mentioned are dealt with in the following example :—

Consider a two-story building with flat roof, ground floor clear except for stair well and two steel pillars; upper floor divided into rooms by brick partitions; the steelwork supports the first floor and the partitions, which latter in their turn support the roof; the external walls are self-supporting and also support their proportion of floor and roof.

This does not constitute a building of steel skeleton construction within the meaning of the London County Council (General Powers) Act, 1909.

Fig. 2 shows the walls and partitions, also the wood joisting and flooring. Fig. 1 shows the beams in the first floor and the positions of the two steel pillars. It is to be noted that the beam arrangement is devised for the sole purpose of indicating different methods of loading; but, on the other hand, no preliminary calculations were made to ensure the easy selection of suitable sections.

The undernoted load data is assumed :—

Flat roof.—Inclusive dead and live load = 1 cwt. per sup. ft.
First floor.—Inclusive dead and live load = 1½ cwt. per sup. ft.
Partitions, parallel to joisting, 4½ in. thick = ½ cwt. per sup. ft.
Partitions, crossing joisting, 9 in. thick = 1 cwt. per sup. ft.
Chimneys, 6 ft. wide average 13½ in. thick = 1½ cwt. per sup. ft.
Chimneys, height = 20 ft.
Partitions, ,, = 14 ft.
,, length = effective span of beam under.
,, no deductions for doors.
Steel beams.—The effective span includes half the length of the wall bearing.
,, Ends simply supported.
,, Working stresses, tension = 7·5 tons per sq. in.
,, ,, ,, compression = 7·5 tons per sq. in.
,, ,, ,, shear = 5·5 tons per sq. in.
,, Factor of safety = 4.
,, Deflection not to exceed $\frac{1}{260}$th of an inch per foot of span.

The formulæ and sections of beams have been selected from the handbook of Messrs. Redpath, Brown & Co., Ltd., to which the references to page numbers in the following are applicable.

The reference letters B.S.B. mean British Standard Beam.

Fig. 1 : Beam plan.—Commencing at top left-hand corner, give each beam a consecutive reference number.

Note the following kinds of loading :—

Beams 1, 5, 7, and 8.—Loading, uniformly distributed.

Beams 2 and 9.—Loading, unequally and unsymmetrically distributed.

Beam 4.—Loading, combination of uniformly distributed and centrally concentrated.

Beam 5.—Loading, combination of uniformly distributed and concentrated out of centre.

Beam 3.—Loading, combination of concentrated and partially distributed disposed symmetrically.

Beam No. 1 : Span = 14 ft.—This beam, being parallel to the joisting, gets no load from floor or roof, but only a uniformly distributed load from the 4½ in. brick partition. Partition, 14 ft. high × 14 ft. long @ ½ cwt. = 98 cwts. = 4·9 tons.

Pages 18 and 19, B.S.B. 12.—H beam, 8 in. × 4 in. @ 18 pds. per foot will support 4·9 tons distributed over 14 ft. span. The table of safe loads is based on our specified data. The section is suitable, therefore, as regards load. The span is 21 times the depth, therefore it is within our deflection limit. This limit is also indicated on the table by the zig-zag line. If desired, the amount of deflection may be calculated by the formula in the footnote to the table. Let δ = deflection in inches; K = deflection coefficient; and L = span in feet; then $\delta = KL^3 = \cdot 002344 \times 196 =$ 0·46 of an inch, or a shade less than $\frac{1}{260}$th of an inch per foot of span. In practice, with such small beams, it is sufficiently accurate to take the first three or four figures of the deflection coefficient.

For shear, as there is no qualifying note to the tables of safe loads for simple H beams, it may be assumed that the webs of the beams are strong enough for the tabulated loads, but this may be checked. See formula, page 271, and table, page 272. The last column on the latter page shows the maximum uniformly distributed load that each section of H beam is strong enough to support without danger of the web buckling. For the H beam 8 in. × 4 in. the maximum is 17·4 tons, a very ample margin over the actual load of 4·9 tons. Note that this is not the allowable reaction or concentrated load, which is one-half of the distributed load, or of any symmetrical arrangement.

The reaction or concentrated load transmitted from beam No. 1 to beam No. 4 is 4·9 ÷ 2 = 2·5 tons. Relative diagrams and formulæ for the calculation of reactions are given on pages 258–263 inclusive. For the above :

$$\text{Reaction} = P = Q = \frac{W}{2}$$

In the various formulæ of these pages of the handbook the superimposed load and the weight of the steel beam are distinguished by the symbols W_A and W_B. In our case we assume that the floor and roof loads are sufficient to include the weight of the steelwork, so that we neglect the term or symbol W_B, and call the load in tons W or W^1, W^2, etc., if required.

It is merely a coincidence that the load of 4·9 tons on beam No. 1 agrees exactly with the load tabulated for the H beam 8 in. × 4 in. selected.

Beam No. 2. Span = 10 ft.—This beam supports unequally and unsymmetrically distributed loads from partitions and chimney. (See Fig. 3.)

Partition—$2W_2$ = 14 ft. × 1 ft. × ½ cwt. = 7 cwt = 0·35 ton.
Chimney—$2W$ = 20 ft. × 6 ft. × 1½ ,, = 180 ,, = 9·00 ,,
Partition—$2W_3$ = 14 ft. × 3 ft. × ½ ,, = 21 ,, = 1·05 ,,

As there will be two H beams, side by side, to suit the 18 in. width of jambs, the loads on each H beam will be half of the above. Therefore W^2 = 0·18 ton; W = 4·5 ton; W^3 = 0·53 ton.

Before direct reference can be made to the tables in the handbook it is necessary to arrive at an equivalent distributed load value.

In the first place loads W_2 and W_3, being near the bearings and also being small in proportion to load W, an approximation is allowable.

Neglect loads W_2 and W_3, therefore, and increase load W to 5 tons.

Pages 258–259. Diagrams 5, 5a.

$$\text{Maximum bending moment} = Mx = \frac{Wag}{L} + \frac{Wbg^2}{2L^2}$$

$$= \frac{5 \times 1 \times 6}{10} + \frac{5 \times 6 \times 6 \times 6}{2 \times 10 \times 10} = 3 + 5{\cdot}4 = 8{\cdot}4 \text{ foot tons.}$$

The rule for equivalent distributed load from maximum bending moment appears on page 263 (c) method 3, whence :

$$\text{Equiv. Distbd. Tabular Load} = Wt = \frac{8Mx}{L} = \frac{8 \times 8{\cdot}4}{10}$$

$= 6{\cdot}72$ tons.

Page 18, B.S.B. 12.—H beam 8 in. × 4 in. @ 18 pds. per foot will support 6.9 tons distributed over 10 ft. span. Therefore beam No. 2 will consist of 2 H beams 8 in. × 4 in. @ 18 pds.

It is unnecessary to repeat the method for deflection and shear.

For reaction or load transmitted to steel pillar see page 262.

$$R = \frac{0{\cdot}53 \times 1{\cdot}5 + 4{\cdot}5 \times 6{\cdot}0 + 0{\cdot}18 \times 9{\cdot}5}{10} = 2{\cdot}95 \text{ tons.}$$

Beam No. 3 cannot be calculated before Nos. 4, 5, 6, and 7, which it supports, and beam No. 6 is dependent on No. 8. We could calculate No. 4 at present, but as No. 6 looks similar to it we will take them together. For the same reason beams Nos. 5 and 7 will be considered together. This brings us to beam No. 9, and as it is similar to beam No. 2, just calculated, we will take it next.

Beam No. 9, span = 12 ft. (See Fig. 4.)

Partition—$2W_2$ = 14 ft. × 1 ft. × $\frac{1}{2}$ cwt. = 7 cwt. = 0·35 ton
Chimney—2W = 20 ft. × 6 ft. × $1\frac{1}{2}$,, = 180 ,, = 9·00 ,,
Partition—$2W_3$ = 14 ft. × 5 ft. × $\frac{1}{2}$,, = 35 ,, = 1·75 ,,

Therefore, for each H beam, W^2 = 0·18 ton, W = 4·5 tons, W^3 = 0·88 ton.

Note that loads W^2 and W are the same as for beam No. 2; load W_3 is 0·35 of a ton greater, and also that the span is 2 ft. greater.

(Page 18.) The equivalent distributed load for each H beam No. 2 was found to be 6·72 tons, obviously, therefore, the H beam 8 in. × 4 in. @ 18 pds., although suitable there, will not do in this case as its safe load on 12 ft. span is only 5·8 tons.

Reading up the table, the next heavier beam of the same depth is B.S.B. 13. H beam 8 in. × 5 in. @ 28 pds. per foot, for which the safe load on 12 ft. span is 9.3 tons. The actual total load on each beam No. 9 is 0·18 + 4·5 + 0·88 = 5·56 tons. The weight of the chimney (the heaviest portion of the load) works out at three-quarters of a ton per foot run, so that if it ran the whole length of the beam the total distributed load would be exactly 9 tons. It follows that B.S.B. 13 H beam 8 in. × 5 in. @ 28 pds. is of ample strength. It is suitable also for the reason that its depth is the same as that of beam No. 2.

Reading still higher up the table we notice that B.S.B. 15 H beam 9 in. × 4 in. @ 21 pds. per foot will support 7·5 tons on a span of 12 ft. Does this give a sufficient margin over the actual partially distributed load of 5·56 tons. We can decide in this manner—the difference between the actual and the equivalent loads as calculated for beam No. 2 is roughly 30 per cent. Adding 30 per cent. or 1·7 tons to 5·56 tons we get 7·26 tons, so that the 9 in. × 4 in. is just right for strength.

The exact method of calculating the maximum bending moment for loading such as that on beams Nos. 2 and 9 is somewhat beyond the scope of this article, but it is more satisfactory and quicker than the foregoing.

Beam No. 8, span = 16 ft.
Uniformly distributed load from partition only.
Partition : 14 ft. × 16 ft. × $\frac{1}{2}$ cwt. = 112 cwts. = 5·6 tons.

Page 18. B.S.B. 15. H beam 9 in. × 4 in. @ 21 pds. per foot. Safe load = 5·6 tons.

B.S.B. 13. H beam 8 in. × 5 in. @ 28 pds. per foot. Safe load = 7·0 tons.

Either section is suitable as regards load, shear, and deflection. Preference may be given to the 8 in. × 5 in., although it is heavier, if it is desired to keep the same depth as that of Nos. 1, 2, and 9.

The reaction or load transmitted to beam No. 6 is 5·6 ÷ 2 = 2·8 tons.

Beam No. 4, span = 16 ft. (See Fig. 5.)
This beam supports :—
(1) Uniformly distributed load from floor.
(2) ,, ,, ,, ,, partition.
(3) ,, ,, ,, ,, roof by partition.
(4) Concentrated central ,, ,, beam No. 1.

$$\text{Roof and floor area supported each} = \frac{14{\cdot}0 + 5{\cdot}0}{2} \times 16{\cdot}0$$

$= 152$ sup. ft.

Roof .. 152 sup. ft. @ 1 cwt. = 152 cwt. = 7·6 tons
Partition, 14 ft. × 16 ft. @ 1 ,, = 224 ,, = 11·2 ,,
Floor .. 152 sup. ft. @ $1\frac{1}{2}$,, = 228 ,, = 11·4 ,,

Total uniformly distributed load = 30·2
From Beam No. 1. Central load of 2·5 tons = equivalent distributed load of .. .. 5·0 ,,

Total equivalent uniformly distributed load = 35·2 ,,

Page 24.

Girder 181A, composed of 1 H beam 15 in. × 5 in. with 1–9 in. × $\frac{5}{8}$ in. plate on each flange. Weight per foot = $82\frac{1}{2}$ pds. Safe distributed load = 38·4 tons over 16 ft. span. Alternative :—

Girder 140A, composed of 1 H beam 14 in. × 6*b* with 1–10 in. × $\frac{1}{2}$ in. plate on each flange. Weight per foot = $82\frac{1}{2}$ pds. Safe distributed load = 36·4 tons over 16 ft. span.

Rivets, $\frac{3}{4}$ in. diameter at 6 in. pitch.

Either girder is suitable as regards load, shear, deflection, and rivet pitch, each being within the limits indicated in the tables by the zig-zag lines and italics.

Note that while both girders are of the same weight per foot, the deeper girder is stronger. The choice between the two will be decided by the section designed for No. 3 and the level of the connection to the latter.

Pages 60–67. These tables might be termed "efficiency" or "economy" tables, the tabulated values of the "maximum moments of resistance in foot-tons" being an index to these desiderata.

The girders appear in the fourteenth and nineteenth lines of the right-hand table on page 66.

Note that no other girders of equal or less weight per foot have an equal or higher "moment of resistance," therefore the sections selected are economical.

Beam No. 6, span = 16 ft. (See Fig. 6.)

The loading on this beam is similar to that on beam No. 4, but the area of roof and floor supported is slightly larger and the concentrated load transmitted by beam No. 8 is not central.

Calculate first, the equivalent uniformly distributed load corresponding to the concentrated load of 2·8 tons.

Pages 258–259. Diagrams (3) and (3*a*).

$$Wt = \frac{4ab \times 2W}{L^2}$$

$$= \frac{4 \times 4 \times 12 \times 2 \times 2{\cdot}8}{16 \times 16} = 4{\cdot}2 \text{ tons.}$$

$$\text{Roof and floor area supported each} = \frac{16{\cdot}0 + 5{\cdot}0}{2} \times 16{\cdot}0$$

$= 168$ sup. ft.

Roof .. 168 sup. ft. @ 1 cwt. = 168 cwt. = 8·4 tons
Partition, 14 ft. × 16 ft. @ 1 ,, = 224 ,, = 11·2 ,,
Floor .. 168 sup. ft. @ $1\frac{1}{2}$,, = 252 ,, = 12·6 ,,

Total uniformly distributed load .. = 32·2 ,,
From Beam No. 8, equivalent distributed .. = 4·2 ,,

Total equivalent uniformly distributed load = 36·4 ,,

Either of the girders selected for beam No. 4 are equally suitable also in this case.

Beam No. 5, span=13 ft.

Uniformly distributed load from roof, partition, and floor.

Roof .. 9 ft. 6 in.×13 ft.×1 cwt.=123·5 cwt.= 6·2 tons
Partition, 14 ft. 0 in.×13 ft.×1 „ =182·0 „ = 9·1 „
Floor .. 9 ft. 6 in.×13 ft.×1½ „ =185·3 „ = 9·3 „

Total uniformly distributed load .. =24·6 „

Page 16.—The actual span of 13 ft. is not given in the tables, but as the safe load varies directly as the span, a choice of methods is available for obtaining the information required.

(1) Choose a section that will carry a slightly greater load over 14-ft. span. Divide its load for 1-ft. span, as given on page 17, by the actual span of 13 ft. The quotient is the required safe load.

Thus: B.S.B. 24. H beam 14 in.×6*b* @ 47 pds. per foot.
Safe load on 1 ft. span=314·7 tons.
„ „ 13 ft. „ =314.7÷13=24·2 tons.

(2) Take the mean of the loads for spans 12 ft. and 14 ft. Thus, for the same section:—

(31·7+27·2)÷2=24·3 tons on 13 ft.

(3) Take half the load on twice the span. Thus, for the same section:—

Safe load on 26 ft. span 12·1 tons×2=24·2 tons.

By each method the H beam 14 in.×6*b* @ 47 pds. is suitable.

Possibly the third method is the quickest, but if it is used it may be necessary, for certain values of load and span, to refer back in the tables to the nearest span less than the actual to make sure that the shear limit is not exceeded. Should a doubtful case arise, the tables of minimum spans and maximum loads on pages 272–273, already mentioned, may be referred to. This will appear more clearly when we deal with beam No. 3.

Beam No. 7, span=13 ft.

The procedure is exactly the same as that for beam No. 5.

Roof .. 10 ft. 6 in.×13 ft.×1 cwt.=136·5 cwt.= 6·8 tons
Partition, 14 ft. 0 in.×13 ft.×1 „ =182·0 „ = 9·1 „
Floors .. 10 ft. 6 in.×13 ft.×1½ „ =204·8 „ = 10·2 „

Total uniformly distributed load .. =26·1 „

Page 16. B.S.B. 24. H beam 14 in.×6*a* @ 57 pds. Safe load=29·2 tons.

Beam No. 3, span=13 ft. (See Fig. 7.)

This beam supports concentrated loads from beams Nos. 4, 5, 6, and 7, in addition to partially distributed partition loads at each end.

We must first calculate the amount of concentrated load transmitted through beam 6 from beam 8.

Pages 258–259. Diagrams (3) and (3b).

$$\text{Load transmitted to beam No. 3} = Q = \frac{Wa}{L} = \frac{2{\cdot}8 \times 4}{16} = 0{\cdot}7 \text{ ton.}$$

There are two pairs of concentrated loads disposed symmetrically relative to the centre of span.

½ uniform load from beam No. 4=15·10 tons
½ central „ „ „ „ 4= 1·25 „
½ total „ „ „ „ 5=12·30 „

28·65 tons

½ uniform load from beam No. 6=16·10 tons
Reaction „ „ „ „ 6= 0·70 „
½ total „ „ „ „ 7=13·10 „

29·90 tons

Total of concentrated loads =58·55 „

These form two pairs of nearly equal value, therefore diagram and formula page 258 (4) may be used.

Equivalent uniformly distributed load:—

$$= Wt = \frac{4Wa}{L} = \frac{4 \times 59 \times 4}{13} = 72{\cdot}6 \text{ tons.}$$

The partition load at each end=14·0×4·0=½ cwt.=1·4 tons, therefore two partition loads=2·8 tons.

The partition loads might almost be neglected, but if each is considered as a concentrated load of half its actual value, the preceding formula may be used again.

Therefore equivalent distributed partition load

$$= \frac{4 \times 1{\cdot}4 \times 4}{13} = 1{\cdot}7 \text{ tons.}$$

Therefore total equivalent uniformly distributed load =72·6+1·7=74·3 tons.

Page 22. Refer provisionally to 74·3÷2=37·2 tons on 26 ft., and note sections as under.

Girder 223A, composed of 1-H beam 16×6 in. with 1-10×⅞ in. plate on each flange. Weight per foot 124 pds. Safe load on 13 ft. span=38·9×2=77·8 tons.

Girder 204A, composed of 1-H beam 15×6 in. with plates on each flange to form 10×1 in. (say each 2-10×½ in.). Weight per foot 129½ pds. Safe load=39·3×2=78·6 tons.

Page 24. Girder 186A, composed of 1-H beam 15×5 in. with plates on each flange to form 9×1¼ in. (say each 2-9×⅝ in.). Weight per foot 121 pds. Safe load=38·0×2 =76·0 tons.

Of these three sections the last is the lightest. The load is sufficient and the depth is ample for deflection, but questions of shear and rivet pitch arise with it.

The actual load on the girder, not the equivalent distributed load, is 58·55 tons. As the loading is practically symmetrical, the maximum reaction and vertical shear which occurs at each end bearing is equal to half of the total load, viz., 29·3 tons.

Page 272. For a single 15×5 H beam (the fact that its flanges are plated does not affect its web strength) the maximum allowable reaction or concentrated load is only 23·9 tons. For this reason, therefore, girder 186A is unsuitable unless suitable stiffeners are inserted from each end to underneath the concentrated loads.

Girder 204A is heavier than girder 223A, therefore if the latter is suitable there is no need to consider the former.

Girder 223A. The maximum allowable reaction or concentrated load is 34·1 tons, so that no stiffeners are required.

Rivet Pitch.—On page 22 the ordinary riveting is given as ¾ in. dia. at 6 in. pitch.

See page 51. The minimum span for this riveting is stated to be 17·5 ft. and our span is only 13 ft. The minimum span is calculated for the full distributed load of 77·8 tons, but we have sufficient indication that special riveting is necessary. For horizontal shear per foot run in each flange divide the reaction 29·3 tons by the depth of the H beam in feet=1·4 (approx.). Result= 21 tons shear. Allow 2½ tons per each ¾ in. rivet, therefore 8 rivets per foot run are required. In 6 in. pitch there are only 4 rivets per foot run, therefore the pitch should be decreased to 3 in. between the concentrated loads and the girder ends. A more exact method of calculation is used for the tables, but the above suffices for a rough check.

Pillars.—Both pillars will be made alike. The slightly heavier load is from beams Nos. 3 and 9. These beams may be arranged so that the load on the pillar is concentric not eccentric. Assume 30 tons from beam No. 1 and 7 tons from beam No. 9; total concentric load 37 tons.

Height of pillar=15 ft.

Pages 122–125. Moncrieff Formula, both ends flat.

Section suitable for load:—18J.10×6 @ 42 pds.

Pages 122L–125L. London County Council Formula.

The same section of H beam is found suitable for the condition of "both ends fixed."

Details of variations of working stresses, deflection limitations, connections, etc., will be dealt with in a future article.

[The previous articles in this series appeared in our issues for September 5, October 17, and November 14.]

Contemporary Art

Birmingham Exhibition by the Art Circle and the Easel Club.

Art waxes strong in the provinces these days, for here, even in this grim industrial Birmingham, we have three or four exhibitions every year. This does not seem many compared with the London deluge, but when one considers the relative importance of the two cities as art centres, Birmingham's three exhibitions per year is a great achievement. Besides, the enthusiasm is wonderful, for there are some four hundred artists living in and around Birmingham who exhibit every year, and their standard is by no means provincial. Even the famous London men would be proud to have painted, for instance, R. Radcliffe Carter's "A Cotswold Valley," a picture possessing the qualities of a great landscape, and painted in a broad free style that is superbly successful. The artist has also caught that ethereal early-morning atmosphere which belongs only to hills and valleys. Such pictures are the finest moods of art because they refresh the soul and lead men to Nature. Of similar excellence is the same artist's "Summer Noon," a ploughed field with shadowed banks and hedges on the left foreground. Here again the true atmosphere of the scene is suggested : the rich, sweet-smelling earth and the noonday sunlight. Henry W. Adams' "Twilight, Sovereign of one Peaceful Hour," is another picture full of atmosphere. It suggests an infinite depth of that peaceful mystery which is the quality of twilight. "The Bending Tree," by Edward Steel Harpur, is less happy in effect. It is an imaginative fairylike forest composition, which, however, fails to achieve the ethereality of fairyland.

The few architect-painters who are members of these societies are producing work of fast-rising standard and interest. "The Church of St. Nicholas, Ghent," by James Swan, F.R.I.B.A., is a picture a little faulty in drawing, but very pleasant in rendering, though a trifle overworked. John Cotton, F.R.I.B.A., also has several interesting architectural studies. Indeed, architectural subjects seem to be well in favour. Several etchings by J. Alfred Swatkins depict quaint street scenes, but his composition is too casual; more careful massing is required to give that vigorous and dominating quality which should be the most interesting property of an etching, however delicate. The water-colour of "Grimshaw Hall, Knowle," by Edith E. Matthews, is marred by the nauseating brilliance and clarity of the colour. It is an old English manor set in an eastern atmosphere; the incongruity is decidedly unpleasant. By a curious coincidence the paintings of scenes in Venice by W. E. Wigley reverse this proceeding, for his Venetian canals and buildings are most grey and English.

There is nothing so easy to paint and so trying to gaze upon as a bad portrait; I was therefore relieved to find the portraits, generally, of exceptional excellence. Bernard Munns exhibits four or five in different stages of finish. The finished one, "Sir Oliver Lodge," is very flat and dull; the face is set in a wilderness of musty colour, which serves no purpose except to fill the canvas, for it certainly has no atmospheric qualities. The other three are labelled as mere studies and sketches, but they are beautifully virile and real. Merrett Hodges, "A Portrait of My Mother," is very fine, but the composition is rather marred by the distracting detail on the side of the chair. B. Fleetwood Walker's "The Schoolboy" is a good portrait in that luridly bright method that sometimes tempts the painter too far. The background is most certainly overdone; it has a rich, unearthly atmosphere that really spoils the portrait.

Of other forms of art : there is some beautiful jewellery by W. T. Blackwood and Miss A. Stern; some morocco and vellum bookbinding, most tempting to the heart of a bibliophile, by F. G. Garrett; and two excellent glazed earthenware statuettes by E. R. Bevan.

EDGAR LUCAS.

Devon and Dorset at the Redfern Gallery.

Shy farms and small stone bridges; wind and weather studies and broad expanses of calm country afford J. Blair Leighton an opportunity of proving himself something more than a portrait painter. He is a modern, and in these water-colour drawings of the country on the borders of Devon and Dorset he ranges himself with the new men, such as Ethelbert White, but does not go quite so far in the newer technique. He can seize the truth this school strives for however, and present it in a most pleasing fashion. Anyone who knows the strip of southern shore marked by the great landslip between Seaton and Lyme Regis and its cliff-top scenery just beyond, will not need the aid of titles in recognizing such scenes as the Axe Valley, Uplyme, Combpyne, and Charmouth : the artist with his distinctive new style has presented these old scenes in a new, recognizable and convincing fashion, which is true to nature on the one hand and progressive on the other, according with the fresh inspirations of to-day. The broad treatment of the farm buildings in "Bindon," and "The River, Maldon," and the clear, true atmosphere over the wide expanse surrounding "The Farm, Axe Valley," show how well the new methods can render scenes which have been painted in the tradition for years without number. To maintain his reputation as a portraitist, some few large drawings of men and women are included, as well as some figure studies and all these add their testimony to the efficacy of the artist's vision and power of presentation.

The Untutored Hand at the Independent Gallery.

The idea of the untutored savage, held so condescendingly during the eighteenth century and well on into the nineteenth, has died out. Negro and other native sculpture, craft-work, and painting are now accepted, as are these things in the civilized States both of the past and of the present. Ethnology has taught a good deal, but a better understanding of what is meant by art has taught more. It is realized that the greatest art is the most artificial representation that the hand of one man can make for the edification of the eye of another. It is realized, on the other hand, that there are in the productions of the natural man, no merely negligible forms, but only low forms. The study of these low forms is now the basis of much fruitful psychology and this is being applied in simple form as part of the new pedagogy. The results are undeniable, for the child if left to itself is but an untutored savage and will draw as the bushman draws, and this spontaneous uprising of the art instinct should be left to develop in the natural way. Girls up to the age of sixteen years at the Dudley High School have the good fortune to be art-mistressed by M. Richardson, a lady who leaves them severely alone. The result is the production of hundreds of bushmen, cave-dwellers, and negro drawings, which are prompted by ideas, and lead to actual representations by means of known objects. The hand is left untutored, only the mind is exercised and developed. Some of the drawings are horrible, some few quite beautiful, but the great thing that emerges after a study of both sorts is that the art instinct has been definitely stimulated. It is a great thing because it does not lead to the making of many artists, but rather to the development of the appreciation of the value of form : form graphic, plastic, and decorative. Moreover it is the way to begin, even for a future artist. Many of the greatest have been shepherds and engineers, and have become Giottos, and Michelangelos; the skill of their hands having developed as their brains increased their convolutions and their brain-cells multiplied their active functioning. Formal drawing may well come afterwards when great buildings and great statues have to be made, but for all the little girls in high schools this way of making them care for art is the best, because it is the natural way.

KINETON PARKES.

Law Reports

Rights to Water

Powell v. *Barlow.*

December 17. Chancery Division. Before Mr. Justice Eve.

In this case, Mr. A. Powell, of Lucksall Fornhope, Hereford, sought a declaration against Mr. W. Barlow, of Wessington Court, near Hereford, that he (plaintiff) was entitled to certain water rights in a close that had been purchased for the pasturage of cattle.

Mr. Gover, K.C., and Mr. E. J. Hecksher appeared for plaintiff, and Mr. Roope Reeve, K.C., and Mr. Spens for the defendant.

The case for the plaintiff was that he bought the close from the predecessor in title at an auction, and the condition under which he bought was alleged to be that there should be a supply of water from the pond in the manor house and park to water his cattle. At a later date the defendant bought the manor house and park and cut off the supply, with the result that plaintiff had to take his cattle to water some distance away from the close. Plaintiff alleged that he was entitled through the conditions of sale and by the fact that the previous tenant had a right of supply of water and to the continuance of the same. It was admitted that the vendor had occupied both the close and the house and park and had a stop tap as against the supply to plaintiff, but the case for the latter was that as the previous tenant obtained the right of supply he under the purchase was entitled to the same privilege which the vendor had given to the previous tenant.

His lordship held that he was bound by the conditions of sale, which gave the right of a supply of water to the plaintiff on defendant's purchase from the original vendor, and he gave judgment for plaintiff for the relief asked.

Right of Way: Question of Loss

Swan v. *Sinclair.*

December 21. Court of Appeal. Before the Master of the Rolls and Lords Justices Warrington and Sargant.

This was an appeal from a judgment of Mr. Justice P. O. Lawrence, sitting in the Chancery Division, who found in favour of the defendant.

Mr. Jenkins, K.C. (with him Mr. J. E. Harman), for the appellant; the plaintiff stated that the short point at issue was whether where a row of houses and gardens had been sold in separate lots with a covenant that a strip of 15 ft. at the foot of each garden should, at the expense of the purchasers, and as soon as possible, be cut off and formed into a roadway leading into a street at right angles to the property; and when, during fifty years, nothing had been done to make the roadway or enforce the covenant, the right to claim the right of way had been lost by abandonment.

Proceeding, counsel said in 1871 a row of houses and shops in Essex Road, Islington, were put up to auction in lots, and one of the conditions of sale was that a strip of land, 15 ft. in width, being the rear of the back gardens of the lots, should be formed into a roadway leading into Church Road, which bounded the side of Lot 1, at right angles to Essex Road. The condition stipulated that the purchasers should, as soon as possible, form the roadway, removing such part of their garden fences as might be necessary from the 15 ft. strip; and the original conveyances to the purchasers expressed that the several lots were subject to and with the benefit of the right of way along the intended roadway. In 1871 all the lots were separated from each other by fences, extending to the rear of the gardens, across the intended 15 ft. strip, and a brick wall separated Lot 1 (including the intended strip) from Church Road.

The plaintiff was the freeholder of Lots 2 and 3, which he had acquired in 1911 by a conveyance, which expressed that they had the benefit of the right of way. His father, in 1873, had acquired a lease of Lot 1, expiring in 1922, and in 1883 he levelled up the garden of Lot 1, so as to form a drop of 6 ft. between that garden and Lot 2 over the 15 ft. strip, a fence being subsequently erected to prevent slipping over the drop. The plaintiff himself became the lessee of Lot 1 in 1904, and in 1919, in contemplation of the end of the lease, he desired to build a garage at the rear of Lots 2 and 3, to take the place of the garage he had constructed at the rear of Lot 1; and for this purpose he levelled up the rear of the gardens of Lots 2 and 3 to reach the level of the rear of Lot 1, and, shortly before the lease expired, pulled down part of the brick wall which separated Lot 1 from Church Road, so as to make an opening along the 15 ft. strip, and erected gates. The defendant acquired the freehold of Lot 1 in 1922, and erected a wall across the strip between Lots 1 and 2. The plaintiff then brought the action, claiming the right of way along the strip as originally proposed. Counsel said after hearing the evidence, Mr. Justice Lawrence found that no attempt had ever been made to form the roadway, and none of the fences had ever been taken down with that purpose in view, and further that the plaintiff had acquiesced in the obstructions, the easement had long been abandoned. He also came to the conclusion that the levelling up the strip in Lot 1 so as to cause a drop to Lot 2, was not consistent with the right claimed.

Mr. Owen Thompson, K.C., argued the case for the respondent.

The court, by a majority, the Master of the Rolls dissenting, dismissed the appeal, with costs.

Lord Justice Warrington said it appeared that from 1871 to 1922 no single owner of any of the houses comprised in the sale had used the intended right of way, nor had any of the cross walls or fences separating the several back gardens been permanently removed. In particular, a 6 ft. brick wall separating No. 318 from No. 320, and a similar brick wall separating 316 from Church Road, were allowed to remain. No objection to these obstructions was made by the plaintiff's predecessors in title or by any of the other persons interested in the maintenance of the right of way. The filling up of the garden at the back of No. 316 to a height of 6 ft. above the adjoining garden and the building of a retaining wall in 1883 seemed to him (his lordship) to indicate a definite intention on the part of the defendant's predecessors in title to render impassable the 15 ft. for an indefinite period, probably on the assumption that the road had even then been abandoned. The plaintiff never took any steps to use the right of way until a few days before the expiration of the lease of 1873, when he demolished the boundary wall, levelling the ground behind it, and making an opening in the wall bordering Church Road, drove a motor-car from that road to the back of 320 and 322, where he said he intended to make a garage.

It was evident that the rights claimed were abandoned and had now ceased to exist.

Lord Justice Sargant concurred.

The Master of the Rolls dissented.

A New Thames Tunnel

The Government has authorized the appointment of an engineer to make an official survey and to prepare plans and estimates for the construction of a road tunnel under the Thames between Gravesend and Tilbury. The tunnel will involve a large scheme of road construction and will connect a great new east and west highway north of London (crossing all the main roads from the north) with the new highways in Kent. It will therefore bring the whole of Kent in direct communication with the north and west without the necessity of traffic passing through the metropolitan area. The engineer appointed to carry out the survey is Sir Maurice Fitzmaurice, who was engaged on the Blackwall Tunnel and was engineer of the Rotherhithe Tunnel and the tramways subway under Kingsway.

Architecture in the Lay Press

The Changing Strand

When the housebreaker gets to work, new views of old London often strike the eye through the ruins of demolished houses. For the first time for generations it is now possible to see the Royal Chapel of the Savoy from the Strand. Terry's Theatre, built only in the 'eighties, lies in ruins at the foot of Savoy Steps, the narrow passage that leads from the Strand to Church Row. In a few months the new Strand will rise above the stunted tower of the old Savoy Chapel, and this unfamiliar view will disappear behind modern buildings. The new view is better seen from the top of a bus, but the best view of the Chapel and its surrounding ruins is got from Savoy Buildings, the passage leading out of the Strand which used to be known as Fountain Court.—"The Daily News."

Beauty and By-laws

Beauty and by-laws do not at any time live very happily side by side. The few towns like Chester which have none, may have slums, though not very many, but they still retain some of the beauty which a good building tradition alone can give. Model by-laws destroy tradition, destroy independent design, and for all small town property put architects out of work.

Anyone could now build to satisfy the authority, because everyone was told how. Hence arose the standard minimum little house and the jerry builder who dealt in them as others dealt in peas or potatoes. Why go for an architect, why have any thoughtful designs at all? Copy the model by-laws, and all will be well. Your plans are bound to be passed. They were, and the result is what we see—minimum roads, minimum houses, maximum repetition, and maximum vulgarity.

You may ask why the latter? The answer is because the jerry builder was not wholly a bad man. It would have been much better if he had been. He had just a little conscience, and that was represented by the decorated bay window, and the stained glass over the front door. I use the past tense, for he has practically gone, clever man that he was in many respects, and has retired probably to a multiple edition of his own residences, all gables and conceit, at Bournemouth, or some similar place. But before he went he left his indelible mark on all our towns where there is a belt of his work, one to six miles wide, as a permanent memorial to his pre-war faith in model by-laws.—Professor C. H. Reilly in "The Weekly Westminster."

Shop Fronts

While Regent Street has lost its precious name as a piece of architecture, some of the new buildings in it might have been welcomed elsewhere; but during the year under review nothing very important has been added there. A noticeable thing is that while the shopkeepers complained of Norman Shaw's and other rebuilding schemes, as providing too little window space, there are several striking examples now of the merchants themselves commissioning an architect to design shop fronts and interiors of a more fastidious kind than their own block had provided. In several cases the actual window space is reduced by marble or metal surrounds to make the contents look the more precious. In upper Regent Street, at the corner of Great Castle Street, the medium-sized round-headed shop windows of a perfumer are further reduced by a wood framework in green and gold, in the Empire manner, like a Rue St. Honoré shop where Josephine bought her scent. It is an amusing and charming conceit, outside and inside, which Mr. Arthur Davis must have delighted to design. This architect has also given us a most tastefully designed boot-shop front and interior with a surprising effect of spaciousness in small space. Messrs. Yates, Cook, and Darbyshire have produced an elegant corner shop with a deep black marble surround, and good metal framework that much enhances the very choice hats and wraps posed in the windows. One of the features of the year, indeed, has been the more expert consideration given to the shop front. One feels that if the rebuilding of Regent Street were now only being considered, instead of being completed, we should have a prospect of a worthy successor of the polite old thoroughfare.—J. B. in "The Manchester Guardian."

Sixteenth-century Regent Street

Regent Street grows daily more exciting, and it is now possible, as more hoardings have been taken down, to survey the progress of the surprising sixteenth-century manor house which has been solidly reared in Argyll Place. The now visible façade is full of interest. The timbers, from old ships, are here and there beautifully carved. There is some stone carving, too, and a long gallery such as London ladies must have leaned from to see Queen Elizabeth go to the City, and the house has been crowned by clusters of pleasantly elaborate red chimneys, like those of the Tudor part of Hampton Court. This reconstruction of the sixteenth century sits so solidly, and already looks so familiar, that I dare say I shall live to hear it described as the authentic town house of Anne of Cleves or something of the sort. Why not, since I have heard the old houses in Holborn pointed out to a bus passenger as "Pretty, but, of course, just an imitation of the old style"?—"Evening Standard."

Changing London

The coming of the house-breaker to Waterloo Place marks a further stage in the transformation of London and the disappearance of still more of the work of Nash, who, if he could revisit Regent Street to-day, might justly pause in his admiration to inquire what had happened to our sense of architectural unity. But a Londoner returning after an absence of even thirty years would find little to remind him of the London he had left. Not only buildings, but whole streets and even areas, have changed their character. When he had accustomed himself to the County Hall and a transformed Oxford Street and offices in Victoria Street, what would he make of Aldwych, where, on the site of some of the most dismal slums in London, there has arisen what is rapidly becoming a new business quarter? And the transition period has scarcely begun. Already Southampton Row is refurbishing itself and promising to rival Kingsway in spacious dignity. Even the Strand, which defies so much that would be for its good, is being gradually widened and its shabbiness offset by modern buildings; and the ancient distinction between the South-Eastern and the Brighton Railway stations at Victoria will be removed by their projected fusion into a single terminus. These changes in the outward face of London are not all clear gain. But the loss in elegance is made up in convenience and the curiously impressive dignity of modern commercial architecture.—"The Westminster Gazette."

Architectural Shams

To the Editor of "The Times."

SIR,—Your correspondent in the article "Old Cottages and a New House," though he does it in a light vein, is voicing the sentiments of every lover of the country when he inveighs against the vulgarity and sham, to say nothing of the bad architectural design, of many a modern house and cottage that is being erected (one can hardly use the word built) in the suburbs and rural districts. Unfortunately the members of the Architecture Club are law-abiding citizens, or no doubt they would lay plans for the destruction of these eyesores.

The tragedy is that the builders of these sham half-timber and "Olde Englysshe" bungalows and houses are probably striving to reach an artistic standard, but are too ignorant to know that a lie and a sham in building is as vulgar and unworthy as it would be in their own personal conduct.—Oswald P. Milne.

Competition News

The New Headquarters of the Society of Friends.

The design by Mr. Hubert Lidbetter, A.R.I.B.A., has been placed first in the competition for the new London headquarters of the Society of Friends.

"Lay-out" of the Bull Green Site, Halifax.

The plan of the Civic Committee of the Halifax Rotary Club has been awarded first place in the competition, promoted by the Halifax Corporation, for the lay-out of the Bull Green site, and of land within a radius of about a quarter of a mile from the centre of the town.

The "Country Life" Modern Room Decoration Competition.

The jury, in making their award in this competition, say: "We have examined the designs sent in for a hall and dining-room and a bedroom to be decorated and furnished in the Palace of Arts, British Empire Exhibition, as typical of the work of 1924. The problem of the bedroom seems to have evoked little interest, and the level of the designs sent in was not high enough to justify the award of first prize to any design.

"The second prize we award to Mr. Fred Cohen, 57 Acacia Road, N.W.8." The model prize was awarded to Mr. Ambrose Heal, of Tottenham Court Road. The first prize for a design for a hall and dining-room was awarded to Lord Gerald Wellesley and Mr. Trenwith Wills, A.R.I.B.A., for a series of alternative schemes in the same key. The second prize was awarded to Mr. W. J. Palmer-Jones.

The award is signed Edwin Lutyens, Ellen G. Woolrich, Lawrence Weaver, P. Morley Horder, and Norman Wilkinson.

The Royal Mint Competitions Awards.

The Royal Mint have announced the results of the series of competitions, held under the auspices of the Advisory Committee, for designs for medals and plaquettes to be struck in connection with the holding of the forthcoming British Empire Exhibition.

With the exception of the medal to be presented to exhibitors by the authorities of the exhibition itself, the medals and plaquettes will be shown at the Royal Mint exhibit at Wembley, where replicas in various metals will be available for sale to members of the public who are interested. The object of the competitions and of the exhibits is to demonstrate to the public that a high standard of British medallic art is still obtainable, and that really good work of this kind can be made available to the public at a very moderate cost.

The awards are as follows:—

1. Design for an award medal to exhibitors (the Worshipful Company of Goldsmiths offered a prize of £70), Mr. Percy Metcalfe, of The Studio, Cleveland Road, Barnes, London.

2. Design for a plaquette commemorative of the holding of the exhibition (the Worshipful Company of Armourers and Brasiers offered a prize of £70), Mr. E. Carter Preston, of 155 Canning Street, Liverpool.

For the designs for each of the above, a limited number of artists were invited to compete, including one nominated by each of the Dominions of the Crown.

3. For the Royal Mint open competition for models for plaquettes illustrative of London (the funds for which have been generously guaranteed from a private source), eighty-one competitors entered. Prizes have been awarded as follows:—

First prize (100 guineas), Mr. Eric Bradbury, of 59 Gayden Road, Clapham, London, for his two models "The National Gallery with St. Martin's Church," and "Westminster Abbey and Houses of Parliament."

Two second prizes of 50 guineas, Mr. A. Howes, Cumberland Studio, Forest Road, Kew, for his model "The Tower of London," and Mr. Percy Metcalfe, The Studio, Cleveland Road, Barnes, London, for his model "The Tower Bridge."

Prizes of 25 guineas were also awarded to the following for designs symbolical of London as the capital city of the Empire:—

Miss M. Kitchener, The Little Gallery, Ashtead, Surrey.

Mr. W. H. Doxey, 8 January Street, Chorlton-on-Medlock, Manchester.

Mr. C. L. J. Doman, The Studio, 9 Spencer Hill Road, Wimbledon, London.

4. Designs were also invited from a selected number of artists for a small keepsake medal of the size of a shilling-piece. This medal or token will be struck on a coining press at the exhibition itself, and placed on sale to visitors.

The successful competitors are as follows:—

First prize (£50), Mr. Percy Metcalfe, The Studio, Cleveland Road, Barnes.

Second prize (£20), Mr. William McMillan, 65 Glebe Place, Chelsea.

Third prize (£10), Mr. Langford Jones, 67 Shakespeare Road, Hanwell.

List of Competitions Open

Date of Delivery.	COMPETITION.
Jan. 20	A premium of 20 guineas is offered for the best design of a lodge, main entrance gates, and railing abutting upon the main county road. In the design of the entrance gates, the words "Talbot Memorial Park" are to be worked in distinctly and prominently. Apply Mr. Moses Thomas, Town Clerk, Port Talbot.
Feb. 1	Proposed Concert Hall and Public Baths for Newcastle-upon-Tyne. Premiums of £750, £250, and £100 respectively are offered, the first premium to merge into the commission or other payment to be made to the author of the successful design. Assessor, Mr. Alfred W. S. Cross, M.A. Apply, with deposit of £2 2s., to Mr. A. M. Oliver, Town Clerk, Town Hall, Newcastle-upon-Tyne.
Feb. 14	Proposed New Cottage Hospital for Durham. The Holmside and South Moor Collieries Welfare Scheme Committee invite designs for a new cottage hospital, and premiums of £75, £50, and £25 respectively are offered. Mr. T. R. Milburn, F.R.I.B.A., is the assessor. Apply not later than December 26. Joint Secretaries, Welfare Scheme Committee, South Moor Colliery Co., Ltd., South Moor, Stanley, S.O., Co. Durham.
Feb. 29	Architects practising in the West Riding of Yorkshire are invited to submit designs for the City of Leeds Branch Public Libraries, Cardigan Road, Burley, and Hough Lane, Bramley. Premiums, £35, £20, and £15. Assessor, Mr. Percy S. Worthington, M.A., Litt.D., F.R.I.B.A. Apply Mr. Robert E. Fox, Town Clerk, 26 Great George Street, Leeds, with deposit of one guinea.
April	A competition has been promoted by the Canadian Government for designs for a full-length statue of the late Sir Wilfrid Laurier to be erected in the grounds of the Parliament Buildings, Ottawa. The winner will be commissioned to carry out the work. Second premium, $1,000. Apply the Secretary, Public Works Department, Room 784, Hunter Buildings, Ottawa.
April 26	At the instance of the British Drama League the proprietors of "Country Life" have promoted a competition for designs for a national theatre. The proprietors of that journal will bear the cost of building a complete large-scale model of the first prize design, to be shown at the British Empire Exhibition. Jury of Award: Mr. J. Alfred Gotch, President R.I.B.A.; Sir Edwin Lutyens, R.A., F.R.I.B.A.; Sir Lawrence Weaver, K.B.E., F.S.A.; Professor C. H. Reilly, F.R.I.B.A.; Professor Hubert Worthington, A.R.I.B.A.; Mr. Harley Granville-Barker; Mr. Albert Rutherston. Mr. Geoffrey Whitworth, Hon. Secretary. First prize, £250; second prize, £100; for the best model sent in with a design, £25; for the best perspective view of the interior of the larger auditorium, £25. Designs are invited from architects, or architects associated with decorative designers, of either sex, who must be British born or of British parentage. The work of such architects resident in the British Dominions will be especially welcomed. Apply Editor, "Country Life," 20 Tavistock Street, Covent Garden, London, W.C.2.
No Date	The Hereford Town Council invite designs for the proposed reconstruction of the Market Hall and adjoining premises. Premium £100 for the best design as adjudged by a competent member of the R.I.B.A. Apply, with deposit of £2 2s., to Mr. Robert Battersby, Town Clerk, Town Hall, Hereford.

A £1,000,000 Contract for a London Firm

The contract for the new post office at Singapore has been secured by Messrs. Perry & Co. (Bow), Ltd. The amount involved is understood to be approximately £1,000,000. The work will be begun at once and will extend over four years. It is believed that the building will be the largest in Singapore, and reinforced concrete will be used largely in its construction. The building has been designed by the Federal architect at Singapore, Major P. H. Keys, D.S.O. The design was hung in the R.A. exhibition of 1922. As much of the material as possible will be purchased in the United Kingdom.

Measured Details

A handsome portfolio of twenty-four plates of details of good examples of American architecture, drawn by Mr. Walter McQuade, comes to us from Messrs. Batsford. The work selected by Mr. McQuade for presentation consists of details from the original New York City Hall (John McComb, architect), the restoration of the same building by Grosvenor Atterbury, associated with John Tompkins and Stowe Phelps; Doorway, house of Hon. Philander Knox, at Valley Forge (Dubring, Okie, and Ziegler); doorway in court room, municipal building, Hartford; mantel in Mayor's reception room (Davis and Brooks, architects); entrance doorway, house at River Edge, N.J. (Forman and Light, architects); entrance doorway, Montclair Free Public Library (Nelson and Van Wagenen, architects); door treatment, accounting-room offices, Cullman Bros., New York City (Atmar Embury II, architect); entrance doorway, house at Kew Gardens, Long Island, and front entrance doorway (Walter McQuade, architect); entrance doorway, house at Louisville, Ken., and entrance doorway, house at Albany, N.Y. (Lewis Colt Albro, architect); entrance doorway, house at Montclair, N.J., Palladian window and entrance doorway, laboratory, National Bureau, G.E. Coy, Cleveland, Ohio (Wallis and Goodwillie, architects). The excellence of these plates will be gathered from the one which we reproduce on pages 158 and 159.

The Stones of St. Mildred's, Poultry

The following letter appears in the current issue of "The London Mercury":—

SIR,—With regard to the proposed destruction of the City Churches, my father, somewhere about the year 1872, was walking through the Poultry, and, passing St. Mildred's—one of Wren's little Churches of which he was very fond—saw a man at work on the tower with a crowbar. On being questioned the latter said the Church was to be pulled down, and the stone used for road mending. My father made his protest to the authorities, which was quite unavailing, then, in rage and fury, he bought the stones, had them taken down to Louth, Lincs., by water, then carted by lorry to the fields behind his place, where many of them lie to this day, a refuge for conies. Naturally the cost of the stone was nothing compared with that of the carriage. It is an old story now, and for the most part forgotten, but history repeats itself, and under the circumstances, the fact may interest some of your readers.—Yours, etc., MAY FFYTCHE, The Old House, Clavering, Essex.

An Increase of Wages for Building Operatives

The National Wages and Conditions Council for the building industry, which met in London to consider what variation should be made in accordance with the sliding-scale agreement, passed the following resolution: That on and from February 1 the rates of wages payable to craftsmen shall be increased by one halfpenny per hour, and that the hourly rates payable to labourers shall be not less than 75 per cent. of the craftsmen's rates, calculated to the nearest farthing. It was also agreed to regrade a number of towns throughout the country, and this will mean an increase additional to the ½d. under the sliding-scale for those workers in the towns affected.

Mr. R. Coppock (Secretary of the National Federation of Building Trade Operatives) said that this was the first time the sliding-scale had operated in favour of the men since it came into existence in 1921. All the previous adjustments had entailed a reduction. The men's leaders, he said, were gratified with this increase, because it proved the value of the sliding-scale, and of national solidarity and agreements.

The application of the operatives for the readjustment of the base rate, or starting-point, of the sliding-scale, to give the men an automatic increase of 2d. per hour, will be considered at the next meeting of the Council in a fortnight or three weeks.

The Housing Outlook

Sir Charles Ruthen, Director-General of Housing at the Ministry of Health, in a statement to the Press, pointed out that, generally speaking, one could say that the houses authorized under the 1919 Act were now, to all intents and purposes, completed. The total number provided by that Act, under the provisions governing the erection of houses by local authorities, and by the Housing (Additional Powers) Act of 1919, authorizing a subsidy to be granted to private builders, would reach approximately 220,000. The closing stages of this Act synchronized with the gradual re-entry of unaided private enterprise into the general field of house-building, with the result that for the year ended September 30, 1923, the number of houses completed by all house-building agencies reached 77,639, or, in other words, a larger output than the average annual output for the ten years before the war, which was 63,000. Of the 77,639 houses completed last year 25,289 were erected by local authorities and 52,350 by private enterprise. Of the latter 39,150 were houses not exceeding an annual rateable value of £26 11,550 had a rateable value of between £26 and £52; and only 1,650 had a rateable value of between £52 and £78. The greater proportion of the houses built by private enterprise consisted of what are known as "five-roomed" houses. The largest output known in the history of this country took place in 1908, when the number of houses of all classes built was 105,000. He confidently anticipated that the output of houses of all classes for the year ending September 30 next would reach that of 1908.

The Housing Act of 1923, passed in July of that year, had scarcely had a sufficient period in which to justify an accurate forecast of its possibilities, but it was exceedingly encouraging to know that the number of houses already authorized under that Act, which was passed so recently, had reached 85,000, of which 31,500 were being undertaken by local authorities, and 53,500 by private builders. Private enterprise unaided by the State or the local authorities was, of course, very busily and actively engaged on the production of houses, the area of which was above that stipulated by the 1923 Act as ranking for subsidy. Therefore, the housing outlook for 1924 was distinctly encouraging. The greatest difficulty was that of the shortage, and, unfortunately, the growing shortage, of the strength of the essential skilled arms of the building industry. The building industry to-day was probably at least 25 per cent. weaker than in pre-war days.

Coming Events

Thursday, January 17.

British Museum.—Lecture No. XIV: "The Apogee of Greek Art." By Miss Claire Gaudet. 4.30 p.m.

Edinburgh Architectural Association.—"The Grand Manner in Architecture." By Professor Hughes. 8 p.m.

Northern Polytechnic, Holloway.—"Ventilation." By Ronald Grierson, A.M.I.E.E.

Friday, January 18.

Art Workers' Guild, 6 Queen Square, W.C.—"The Greek Point of View in Architecture." 8 p.m.

Monday, January 21.

R.I.B.A., 9 Conduit Street, W.—General Meeting. "Architecture in Canada." By Professor Percy Nobbs, F.R.I.B.A.

Thursday, January 24.

The Institution of Structural Engineers, Denison House, 296 Vauxhall Bridge Road, S.W.1.—Presidential Address. By Major James Petrie, O.B.E., M.I.Struct.E., M.Inst.T. 8 p.m.