


THE J. PAUL GETTY MUSEUM LIBRARY



Digitized by the Internet Archive
in 2018 with funding from
Getty Research Institute

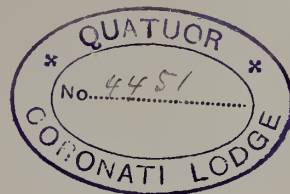
<https://archive.org/details/journalofroyalin5189roya>

JOURNAL

OF

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

NOVEMBER 1897—OCTOBER 1898



[Sixty-fourth Year of Foundation]

LONDON

No. 9 CONDUIT STREET, HANOVER SQUARE, W.

1898

THE ARCHITECTURAL JOURNAL

BEING THE JOURNAL OF

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

VOL. V. THIRD SERIES, 1898

* *
*

The Royal Institute of British Architects, as a Corporate Body, is not responsible for statements made or opinions expressed in the signed contributions to this volume. For those to which no name is attached the Secretary of the Royal Institute, who is the Editor of the JOURNAL, is responsible.



[From a recent photograph by Elliott & Fry.]

PROFESSOR AITCHISON, R.A., *President.*
Royal Gold Medallist 1898.

James Mackenzie

George Aitchison

JOURNAL

OF

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

NOVEMBER 1897 — OCTOBER 1898



VOLUME V. THIRD SERIES

LONDON

No. 9, CONDUIT STREET, HANOVER SQUARE, W.

1898

Printed by Spottiswoode & Co., New-street Square, London.

THE J. PAUL GETTY CENTER
LIBRARY

INDEX TO VOLUME V. THIRD SERIES.

A

- ABERDEEN** Society of Architects admitted to alliance, 358; Officers, 364; Its District, 415.
ADDRESSES: See PRESIDENT'S OPENING ADDRESS; STUDENTS.
Aitchison, Professor: Portrait (*Frontispiece*); OPENING ADDRESS, 1; Presented with the Royal Jubilee Medal, 13; Architecture in Malta, 47; Speeches at the Festival Dinner, 102, 103, 105; The Brickwork Tests, 134; ADDRESS TO STUDENTS, 145; Election as R.A., 153; Speech at the Presentation of Mr. Penrose's Portrait, 278; Nominated Royal Gold Medallist, 205; Speeches at Cardiff and Birmingham, 258; Heraldry and Architects, 277; Artistic Copyright, 299; Sketch of his Career, 409; Presented with the Royal Gold Medal, 409, 414; Address in acknowledgment, 412.
Akers-Douglas, Mr.: Statements in Parliament *re* New Government Offices, 447.
Aldwinckle Studentship: Mr. H. S. East's Tour, 458.
ALLIED SOCIETIES.—
ABERDEEN: Society admitted to alliance, 358; Officers, &c., 364; Its Province, 415.
BRISTOL: Educational Facilities, 408; Officers, &c., *ib.*
CARDIFF: Officers, &c., 420.
DEVON AND EXETER: Officers, &c., 408.
DUNDEE: Province north of the Forth shared between the Dundee Institute and the Aberdeen Society, 415; Officers, &c., 449.
IRELAND: Officers, &c., 420.
LEEDS: Officers, &c., 420.
LEICESTER: Officers, &c., 364; Annual Report, 408.
LIVERPOOL: Officers, &c., 408.
MANCHESTER: Officers, &c., 449.
NEWCASTLE: The N.A.A. new Presidential Badge, 207; Officers, &c., 364.
NOTTINGHAM: Officers, &c., 364.
SHEFFIELD: Annual Report, 363; Mr. C. J. Innocent's work as Hon. Secretary, 364; Officers, &c., *ib.*
YORK: R. A. Easdale's Paper, 241; Officers, &c., 408.
America, Domestic Architecture in. See DOMESTIC ARCHITECTURE.
Anderson, J. Macvicar: Speech at Festival Dinner, 102.
Anderson, W. J.: The Historic Development of Architecture: Abstracts of Lectures at the Glasgow School of Art, 138, 300, 334; Next Session's Lectures, 492; Glasgow Cathedral (review), 493.
Annual Report of the Council, 337.
Antiquarian Remains in India, 21, 331, 450, 452.
Archer, William: Housing of the Drama, 203.
Architect's Reminiscences, An, 418.
Architects and Copyright. See COPYRIGHT.
Architects' Benevolent Society, 242; Annual Report and Balance Sheet, 263.
Architects' Charges—in respect of Fire Claims, 48; Professional Practice as to, 402, 439; Revised Schedule of, 445.
Architects of the English Renaissance, 491.
Architectural Education. See PRESIDENT'S ADDRESSES; EXAMINATIONS.
Architectural Photography, 417.
Architecture, Historic Development of: Abstracts of Mr. W. J. Anderson's Glasgow School of Art Lectures, 138, 300, 334.
Architecture: How the Institute may advance it. See OPENING ADDRESS.
Architecture in America. See DOMESTIC ARCHITECTURE.
Architecture in Malta. See MALTA.
Architecture in Poetry, 470.
Architecture of Theatres. See THEATRES.
Arnold, Thomas: The Guildhall, London (review), 416.
Art Metal Exhibition, 206.
Art Standing Committee: Annual Report: Vauxhall Bridge; New Government Offices in Whitehall; Liskeard Church Tower; Russell Square; Kew Bridge, 340; Annual Election, 401, 407; Members appointed by the Council, 439.
Artistic Copyright. See COPYRIGHT.
Arts and Crafts Lectures, 72.
Associateship: Lists of those qualified for, 62, 438.
Athens, Annual of the British School at, 23.
Auditors' Report, 358.
Ayling, R. Stephen: Stables (review), 257.

B

BALFOUR, R. S.: Classic Decorative Work (review), 386.
Barry, Sir J. Wolfe: Speech at Festival Dinner, 104.
Beale, S. B.: The Annual Report, 362, 363.
Bedford, Rev. W. K. R.: Architecture in Malta, 46.
Belgian Société Centrale Excursion, 356.
Bessemer, Sir Henry: Obituary notice, 280.
Beverley Bar, 211.
Bolton, A. T.: THE POSSIBILITIES OF AN EIGHTEENTH CENTURY REVIVAL, 245; An Elementary Text-book (review), 468.
Bomos, A, in Sabina [S. Giampietri], 487.
Bond, F.: Winchester Cathedral, 333.
Boni, Cav.: His Researches at the Forum, 50; THE LAGOONS OF VENICE, 389; Venetian Architects in Henry VIII's Service, 491.
Books received, 52, 74, 144, 212, 234, 398, 420.
Bordighera Exhibition, 331.
Bouw- en Sierkunst (review), 492.
Boyes, H. C.: Architects' Charges in respect of Fire Claims, 48.
Brewer, H. W.: Libraries of the Middle Ages, 382.
BRICKWORK TESTS: Report on the Third Series of Experiments [Wm. C. Street and Max. Clarke].—Some Impressions derived from the Experiments, 77; Tables of Results and Photographs of Piers while under Compression, 78–98; Table of Crushing Loads of Bricks of various descriptions, 99; Diagram showing Compression of Walls, *ib.* APPENDICES [Professor Unwin], 100, 131, 133.
Further Observations and Discussion on the Reports: Max. Clarke, 129, 135; P. Gordon Smith, 131; Professor Unwin, *ib.*; Wm. White, 134; Wm. Woodward, *ib.*; Bruce J. Capell, *ib.*; Professor Aitchison, *ib.*; William C. Street, *ib.*
— Observations at the Annual Meeting *re* Proposal to publish Series of Reports on Brick Tests in book form, 361–63.
Bridgman, H. H.: Decease announced, 492.
British School at Athens [F. C. Penrose], 23.
Brodie, C. H.: Suggested Limitation of Term of Office for Members of Council, 355; Revised Schedule of Charges, 441 *et seq.*
Brown, Professor Baldwin: BEVERLEY BAR (review), 210; The Mediæval Campanili of Rome, 261; Libraries of the Middle Ages, 383; his Paper on Pre-Conquest Architecture quoted, 483.
Brydon, J. M.: Appointed to prepare Plans for New Government Offices, 447.
Builder Album 1897, 144.
Building Stones [H. W. Burrows], 67.
Burges, Wm., The late, 334.
Burn, William, Father of, 262.
Burrows, H. W.: Building Stones (review), 67.
By-laws: Amendment of, 74, 112; Amendments sanctioned by the Privy Council, 401.

C

- CALIFORNIA University: Prospectus, 12; Abstract of Programme and lithographed Plan of Site, 154, 241; Reported Result of Preliminary Selection, 502.
- Cambridge, T. D. Atkinson's, 141.
- CAMPANILI, MEDIEVAL, OF ROME [J. Tavorer Perry], 213.—Scant Evidence regarding Origin and History, 213; Paucity of Published Information, 214; References by Lockyer, Willis, Papworth, *ib.*; The Normal Type, 215; List of Existing Examples, 215, 230; Origin, 216; Evidence of Use in Imperial Rome, *ib.*; Purpose of the Towers, 217; Probable Use as Bell-Towers, *ib.*; Theory of their Date, 219, 222, 224, 231; Citations from Gregorovius, 221; Outline of History of Mediaeval Rome up to Norman Inursions, *ib.*; Description of Architectural Features of Towers with view to determining Date, 223; Saxon Work showing Roman Influence, 224; Distinctive Character of the Towers compared to those in other parts of Italy, 226; Decorations of the Campanili, 227; Niches, *ib.*; Porphyry and Majolica Decoration, 228; Present Condition of the Towers, 229.—*Illustrations*: see LIST OF ILLUSTRATIONS, xii.
- Discussion*: R. Phené Spiers, 232; Wm. Woodward, 233; H. L. Florence, 233.
- Notes by Professor Baldwin Brown, 261.
- Capell, Bruce J.: The Brickwork Tests, 134.
- Carfax Tower, Oxford [J. P. Harrison], 110.
- Carpenters' Hall Lectures, 206.
- Cassel Picture Gallery [J. D. Crace], 65.
- Cates, Arthur: Revised Scheme of the Examinations: An Expostulation, 136.
- Cathédrale, La*, J. K. Huysmans' [A. E. Street], 454.
- Caws, Frank: Chester Cathedral (review), 14; Modern Architecture (review), 157; Rochester (review), 255; Fireproof Stairs, 385; Municipal By-laws *re* Fireproof Construction, 386; Lessons of the Sunderland Fire, 447.
- Cement Admixtures, 259; Cement Pipes, 334.
- Chapel of. Bones, Great Hospital, Valletta [Arthur S. Flower], 398.
- Charges of Architects. See ARCHITECTS' CHARGES.
- Chartres and its Cathedral: M. Huysmans' Romance, 454.
- Chester Cathedral, 14.
- Chippendale Furniture, 207.
- CHRONICLE.—List of Papers for the Session, 11; The Opening Meeting, 11; The National Photographic Record Association, 11; The University of California, 12, 154, 241; Additions to the Library, 13; Jubilee Medal conferred on the President, 13; Señor Belmas, 13; Mr. Flower's Paper on Architecture of Malta, 48; Architects' Charges in respect of Fire Claims [H. C. Boyes], 48; Painters' Company Travelling Studentship, 49; Formation of the Perth A.A., 49; Cav. Boni's Researches, 50; Results of the November Examinations, with Lists of Passed Candidates, 60; Revised Scheme of the Examinations: the Board of Examiners' Report, 63; The London Building Act: proposed Amendments, 63; Suggested Institute Committee to advise County Council *re* Amendments, 64; Decease of Mr. C. J. Shoppee, 65; The Festival Dinner: List of Guests, Report of Speeches, 101; Messages from the French and Belgian Societies, 106; The late Octavius Hansard, 106; The late John Loughborough Pearson, R.A.: The President's Tribute, 106; A Graceful Compliment from Stockholm, 107; Students R.I.B.A. among the R.A. Prizemen, 107; Brickwork Tests: Statement by Mr. Max. Clarke, and Discussion on Results of Third Series of Experiments, 129; International Competition for Cathedral at Cronstadt, 135; The Examinations: An Expostulation against the Revised Scheme [Arthur Cates], 136; Memorandum from the Board of Examiners, 137; Deed of Award of Prizes and Studentships 1898, 152; The President's Academy Honours, 153; Architectural Scheme for Californian University: Programme for Competitors and Plan of Site, 154; The Teaching University for London, 157; Mr. Hugh Stannus's Cantor Lectures, 157; The Architectural Union Company's Donation to the Library, 205; Mr. Sachs' Paper on the Housing of the Drama, 205; The Royal Gold Medal: Announcement of the Council's Nomination, 205; The Prize Drawings at Allied Centres, 206; The Carpenters' Hall Lectures, 206; Art Metal Exhibition, 206; Mr. Statham's *Modern Architecture*, 207; The New Presidential Badge of the Northern A.A., 207; The Revised Programmes of the Examinations, 237; The Stamping of Awards where no Amount is stated, 241; York Architectural Society, 241; Architects' Benevolent Society, 242; Programme of Subjects for Prizes and Studentships 1899, 258; The President at Cardiff and Birmingham, 258; Cement Admixtures, 259; Decease of James Edmeston and Herbert Stone Wood, 260; Presentation of Mr. Penrose's Portrait, 277; M. Harmand's Paper, 279; Fireproof Staircases, 279; Obituary Notice of James Edmeston, 279; The late Sir Henry Bessemer, 280; Mr. A. N. Paterson's Paper, 331; Exhibition of Industrial Art at Bordighera, 331; The Annual Elections: Nominations by Members, 355; Suggested Limitation of Term of Office for Members of Council [C. B. Brodie], 355; An Invitation from the Belgian Society, 356; The late Augustus Laver, 356; A Donation from Signor Giampietri, 356; The Loan Library and non-Metropolitan Members, 355; Fireproof Stairs [Frank Caws], 385; Results of the Annual Elections, 400; The Institute Register for Assistants, 401; The Amended By-laws approved by the Privy Council, 401; Mr. Gladstone and the Institute, 402; Mr. Penrose's University Honours, 402, 415; Decease of Sydney Stent and Judge Meadows White, 402; Commission du Vieux Paris, 402; Draft of the Revised Schedule as to Professional Charges, 402; Discussions on the Schedule, 403, 439; Presentation of the Royal Gold Medal, 414; The Congress of Hygiene at Madrid: Mr. Cutler's Report, 414; The Library of Corpus Christi College, Oxford, 415; The French Archaeological Society, 415; Scotland north of the Forth divided between the Aberdeen and Dundee Allied Societies, 415; The Holborn-Strand Improvement, 417, 447; Results of the June Examinations, with Lists of Passed Candidates, 436; Standing Committees: Members appointed by the Council, 439; President of the Northern A.A. elected Fellow, 439; The New Government Offices, 446; The Sunderland Fire, 447; The London Topographical Society, 448; Sanitary Institute Congress, 492; A New Art Review, 492; Mr. Hugh Stannus's Lectures, 492; Mr. W. J. Anderson's Lectures, 492; Members deceased, 492; University of California, 502; Architectural Copyright [M. Harmand], 502.
- Clark, J. Willis: Libraries of the Middle Ages, 381, 384.
- Clarke, Max.: REPORT ON THE THIRD SERIES OF BRICKWORK TESTS, 77; Further Observations, 129, 135; The Annual Report, 361; Architectural Photography (review), 417.
- Clarke, Somers: Philæ (review), 107.
- Clarkson, S. Flint: Revised Schedule of Charges, 441.
- Classic Decorative Work, 386.
- Cole, R. Langton: Note on Mr. Statham's *Modern Architecture*, 262.
- Collins, Dr.: Speech at Festival Dinner, 104.
- Collins, H. H.: Party Structures (review), 282.

Committees, Standing: Annual Elections, 400; Votes recorded, 407; Members appointed by the Council, 439

Compensation, 332.

COPYRIGHT, ARTISTIC—WITH SPECIAL REFERENCE TO ARCHITECTS [Georges Harmand], 285.—Artistic Copyright among the Ancients, 286; in the Middle Ages, *ib.*; Facility of reproduction of Architects' Designs by Modern Printing Processes, *ib.*; Architects protected by English Copyright Law, 287; The Berne Convention and its Work, *ib.*; Continental Law on the Subject, 288; Efforts of the International and Artistic Association, *ib.*; Copyright explained, 289; Its Principles applied to the Architect's Art, *ib.*; Recent Legal Decisions, 290; Analogy to Patent Rights, *ib.*; Architect's Right to Protection equal with the Painter and Sculptor's, 291; How an "Architect-Author" may secure Copyright, 292; Summary of Principles, 294.

Discussion: Professor Kerr, 295; Mr. John Slater, 296; Mr. John Hebb, 297; Mr. E. W. Mountford, *ib.*; Mr. E. W. Hudson, *ib.*; The President, 299; M. Harmand, 299.

— Patents for Plans; Messrs. Flockton, Gibbs, and Flockton's Experience, 333.

— Resolution *re*, at the Turin Congress, 502.

Corlette, Hubert C.: Painting and Decoration (review), 306.

Corpus Christi College Library [Rev. T. Fowler], 415.

Cotton, John: Two Oxford Guide-books (review), 50; Architecture in Poetry (review), 470.

Council, The: Annual Report, 337; Nominations by Fellows and Associates, 355; Suggested Limitation of Term of Office [C. H. Brodie], 355; "House List" of Nominations, 362, 363; Annual Elections, 400, 406.

Crace, J. D.: A Relic of Sir Christopher Wren, 13; The Picture Gallery, Cassel, 65; HERALDIC DRAWING AND ITS ADAPTATION, 265, 277, 279.

Cutler, Thos. W.: Report as Representative of the Institute at the Madrid Congress of Hygiene, 414.

D

DAMASCUS: THE GREAT MOSQUE OF THE OMEYYADES [R. Phené Spiers], 166.

Darbyshire, Alfred: Housing of the Drama, 203.

Dawber, E. Guy: Chippendale Furniture (review), 207.

Devon and Exeter Society. *See* ALLIED SOCIETIES.

DOMESTIC ARCHITECTURE, A STUDY OF, IN THE EASTERN STATES OF AMERICA IN 1896: WITH SPECIAL REFERENCE TO QUESTIONS OF PLAN, CONSTRUCTION,

HEATING, DRAINAGE, &c. [A. N. Paterson], 309.—Influence of Climate, 309; Plan: Cellar, Draughts, The Hall, Verandahs, Bedroom "Closets," Service Rooms, 310; The Town House, 312; Self-contained Houses, *ib.*; Washington Examples, 314; The Apartment House, *ib.*; Workmen's Houses, 316; The Suburban House, *ib.*; The Country House, 318.—Construction Notes, 319.—Heating, 321; Hot-air System, 323; The Furnace, *ib.*; Cold-air Supply, 324; Hot-air Flues, *ib.*—Plumbing and Drainage, 325; Sewage Disposal, 326.

Discussion: Professor Kerr, 328; Mr. H. Heathcote Statham, 330; Mr. A. N. Paterson, 330, 331.

Drama, Housing of the. *See* THEATRES.

Drawings, Ownership of, 13.

E

EASDALE, R. A.: An Architectural Student's Rambles, 241.

East, H. S.: Aldwinckle Student Tour in Spain, 458.

Edmeston, James: Obituary notice, 279.

Education of Architects. *See* President's Addresses.

EGYPT.—TOMBEAU D'UN ASTROLOGUE THÉBAÏN DE LA XVIII^e DYNASTIE, 53; THÈBES: EXCURSION À LA VALLÉE-DES-REINES, 421 [P. Hippolyte-Boussac], with translation.

Egyptian Sculptures. *See* THÈBES.

EIGHTEENTH-CENTURY REVIVAL, THE POSSIBILITIES OF AN [Arthur T. Bolton], 245.

Ell, S. A.: Decease announced, 492.

Emerson, Wm.: The Annual Report, 360, 361.

English Renaissance, Architects of the, 491.

EVANS, C. E.: Decease announced, 492.

Eve, G. W.: Heraldic Design, 274.

EXAMINATIONS, THE: Preliminary, Intermediate, and Final, Nov. 1897 and June 1898: Results and Lists of Passed Candidates, 60, 436; Arthur Cates Prizemen, 65, 338, 438; Report of Board of Examiners on the General Arrangements of the Examinations: Adoption by the Council, 62; Mr. Arthur Cates's Expostulation against the Revised Scheme, 136; Board of Examiners' Reply to Mr. Cates, 137; Revised Programmes of the Examinations, 237; Statistics, 337, 338.

Exeter, 395.

F

FARROW, FREDERIC R.: THE WARMING OF PUBLIC BUILDINGS, 347.

Fawcett, W. M.: Cambridge (review), 141.

Festival Dinner: List of Guests, 101; Speeches: President, 102, 103, 105;

J. Macvicar Anderson, 102; Bishop of London, *ib.*; W. E. Macartney, *ib.*; Aston Webb, 102; The Lord Mayor, 103; Sir E. J. Poynter, *ib.*; Sir E. Maunde Thompson, 104; Sir J. Wolfe Barry, *ib.*; Dr. Collins, *ib.*; Felicitations from the Societies of Paris and Belgium, 106.

Festival Dinner: Mr. Woodward's Questions concerning, 178.

Final Examination. *See* EXAMINATIONS.

Finances of the Institute, 344.

Fire Claims: Architects' Charges, 48.

Fireproof Construction and the Sunderland By-laws, 386.

Fireproof Staircases: Mr. Simpson's Paper and Municipal Bodies, 279.

Fires, Fatal: The Stair of the London Dwelling House a Death Trap [Wm. Simpson], 171.

Fleming, Owen: The Garment of Life (review), 72; Annual Report, 360, 388.

Fletcher, Banister F.: Building Construction (review), 109.

Florence, H. L.: Remarks *re* Council's Nomination of Royal Gold Medalist, 205; Mr. Perry's Paper on Roman Campanili, 233; Annual Report, 362, 363.

Flower, Arthur S.: NOTES ON RENAISSANCE ARCHITECTURE IN MALTA, 25; Chapel of Bones, Great Hospital, Valletta, 398.

Fowler, Rev. T.: Corpus Christi College Library, 415.

French Embassy, Albert Gate, 302.

Furniture: Chippendale, Heppelwhite, Sheraton, &c., 207.

G

GABRIEL, EDWARD: The late James Edmeston, 279.

Garbutt, Matt.: Quantity Surveying (review), 50.

Garnier, Charles: Obituary notice [Charles Lucas], 465.

George, Ernest: NOTES ON THE DESIGNS AND DRAWINGS SUBMITTED FOR PRIZES AND STUDENTSHIPS 1898, 148.

Giampietri, S.: Gift of a Painting to the Institute, 356; A Bomos in Sabina, 487.

Gladstone, Mr., and the Institute, 402.

GLASGOW CATHEDRAL (review) [W. J. Anderson], 493.

Glasgow School of Art: Mr. W. J. Anderson's Lectures, 138, 330, 334, 492.

Glover, W.: Gift of Presidential Badge to Northern A.A., 207.

Godwin Bursary 1896: Mr. A. N. Paterson's Report, 309, 331.

Gotch, J. A.: Artistic Treatment of Heraldry (review), 164; Decorative Heraldry, 275.

Government Offices, The New, 284; The Government's Request and the Council's Action thereon, 446; Statements in Parliament, 447; The Government's Selection, *ib.*

Grantham, Richard F.: A Municipal Engineer's Handbook (review), 469.
 Gregg, Ebenezer: Specifications (review), 467.
 Gregorovius's Medieval History of Rome, 221.
 Gruning, E. A.: Revised Schedule of Charges, 439 *et seq.*
 Guildhall, The, 416.

H

HAMILTON, F. W.: Appointed District Surveyor for North Fulham, 449.
 Hamilton, R. M.: Ownership of Drawings, 398.
 Hansard, Octavius: Obituary notice, 106.
 Harmand, Georges: ARTISTIC COPYRIGHT, WITH SPECIAL REFERENCE TO ARCHITECTS, 285.
 Harrison, J. P.: Carfax Tower, Oxford, 110.
 Hayward, C. Forster: Revised Schedule of Charges, 440 *et seq.*
 Heating and Ventilation in the United States, 321; Warming of Public Buildings, 347.
 Hebb, John: Middle Row, Holborn, 111; The father of the late William Burn, 262; Artistic Copyright, 296; The French Embassy, Albert Gate, 302; Bordighera Exhibition, 331; The late Wm. Burges, 334; The Annual Report, 359, 361; Architects of the English Renaissance, 491.
 HERALDIC DRAWING AND ITS ADAPTATION [J. D. Crace], 265.—Leading Principles, 265; Object of the Heraldic Charge, 266; Modern Equivalents, 267; Historical Value of Heraldry, 268; Egyptian Examples, *ib.*; Extreme clearness essential, 269; The Art of Conventional Drawing, 270; Some Modern Exponents: Willemet, Pugin, John Powell, James West, Wm. Burges, *ib.*; Pugin's Heraldic Glass at Westminster, *ib.*; Origin and Use of the Helm, Crest, Wreath or Torse, and Mantling, 272; Description and Methods of Treatment, *ib.*; Modern Use of Heraldry in Germany, 273; Spanish Heraldic Decoration, *ib.*; Cloths of State, *ib.*; The Blazoned Shield for Decorative Effect, *ib.*; Essentials necessary in drawing Heraldry, *ib.*—*Illustrations*, 279, and *see* LIST OF ILLUSTRATIONS, xiii.

— Note by George W. Eve; 274.

Discussion: J. Alfred Gotch, 275; W. H. St. John Hope, *ib.*; W. A. Lindsay, 276; Wm. White, *ib.*; The President, 277; The Author's Reply, *ib.*

Heraldry, Decorative, 164.

Hine, J.: Address at Exeter, 387.

Hippolyte-Boussac, P.: TOMBEAU D'UN ASTRONOME THÉBAIN DE LA XVIII^e DYNASTIE, 53; THÈBES: EXCURSION

À LA VALLÉE-DES-REINES, 421; with translation.

Historic Development of Architecture, 138, 300, 334.

Historic Ornament, 252.

Hogg, Col. J. R.: Architecture in Malta, 47.

Holborn-Strand Improvement Scheme, 416, 447.

HOLYWELL PRIORY, SHOREDITCH [E. W. Hudson].—Part II.: The Buildings and Remains, 75, 175, 234; Effigy of a Bishop, 112, 234; Arms and Seal of the Priory, 235; Stained Glass Windows, 236.

Hope, W. H. St. John: Decorative Heraldry, 275; Libraries of the Middle Ages, 384.

Houses in the United States. *See* DOMESTIC ARCHITECTURE, 309.

Housing of the Drama. *See* THEATRES.

Hudson, E. W.: Holywell Priory, Shoreditch, 75, 175, 234; Round Towers of Great Britain, 284; Artistic Copyright, 297; The Annual Report, 360, 363; Libraries of the Middle Ages, 383; St. Martin's, Canterbury (review), 473.

HUMANIST ARCHITECTURE IN ENGLAND: Review of Mr. Blomfield's *Renaissance Architecture* [Paul Waterhouse], 122.

Huysmans' *La Cathédrale* (review), 454.

Hygiene Congress at Madrid: Mr. T. W. Cutler's Report, 414.

I

INDIAN ARCHAEOLOGICAL SURVEY [Wm. Simpson]: Dr. Burgess's Muhammadan Architecture in Gujarat, 21; Antiquarian Remains in Central Provinces and Berar, 331; Antiquarian Remains in Bombay, 450; Monumental Remains of Dutch East India Company in Madras, 452.

Institute, The, and the Holborn-Strand Improvement, 416.

Intermediate Examinations. *See* EXAMINATIONS.

Italian (Old) Building Accounts [Wm. Scott], 249.

Italy: Pelagic Remains in, 487, 489; Prehistoric Peoples of, 488; The Birthplace of Civilisation, 491.

J

JACKSON, T. G.: THE LIBRARIES OF THE MIDDLE AGES, 365, 385.

Jones, J. Humphreys: Historic Ornament (review), 252.

Joseph, Delissa: The Annual Report, 362.

K

KERR, Professor: The Ownership of Drawings, 13; Artistic Copyright, 295; Domestic Architecture in the United States, 328.

King, Zeph.: Revised Schedule of Charges, 444.

Kronstadt Cathedral Competition, 135.

L

LAGOONS OF VENICE, The. *See* VENICE.

Lanchester, H. V.: House Sanitation (review), 210.

Langston, H. Hardwicke: The Annual Report, 361; Revised Schedule of Charges, 441 *et seq.*

Laver, Augustus: Obituary notice, 356.

Leaning, John: Specifications (review), 357.

Legal:—London Building Act, section 43: *Paynter v. Watson*, 388.

Leicester Society. *See* ALLIED SOCIETIES.

LIBRARIES, THE, OF THE MIDDLE AGES [T. G. Jackson], 365.—Private Libraries of the Romans, 366; Conventual Libraries framed on Classic Model, *ib.*; Rule *re* Benedictine Loan Library in Eleventh Century, *ib.*; Some Early Medieval Libraries, 367; Bishop Cobham's Library, St. Mary's, Oxford, 368; The Building and Fittings, 369; Bishop De Bury's Collections and Bequest thereof to Oxford, 370; Humorous Extracts from De Bury's *Philobiblon*, 370, 380; Foundation of Library of Durham College, now Trinity College, Oxford, 371; First instance of a complete Collegiate Plan, *ib.*; Merton College Library, 372; Chained Libraries still extant in England, 373; That at Hereford Cathedral described, *ib.*; The Laurentian Library, Florence, 374-5; Duke Humphrey's Library at Oxford, 376; Sir Thomas Bodley's Additions and Refittings, *ib.*; Growth of the Bodleian, 377; Library of St. John's, Cambridge, *ib.*; Chained Libraries still in vogue in 18th Century, 378; Wren's Building and Fittings of Trinity College Library, Cambridge, *ib.*; The Radcliffe Library, 379; Two ways of considering a book, 379; List of Illustrations, 380.

Discussion: J. Willis Clark, 381, 384; H. W. Brewer, 382; H. Heathcote Statham, 383; Professor Baldwin Brown, *ib.*; E. W. Hudson, *ib.*; W. H. St. John Hope, 384; T. G. Jackson, 385.

— Corpus Christi College Library, Oxford, 415.

LIBRARY, THE. — Appointment of Librarian, 141; Supplement to the Brandon Catalogue resolved upon, *ib.*; Extension of Library Accommodation, *ib.*; Donation from the Architectural Union Company, *ib.*; Librarian's Report to the Literature Committee, 342; New Regulations extending privileges of Loan Library, 385; List of Additions by

Donation and Purchase from Oct. 1897 to Oct. 1898, xv.
 Library Construction: Review of Mr. Burgoyne's book, 397.
 Lincoln Cathedral, 503.
 Lindegren's (Mr. A.) graceful compliment to the Institute, 107.
 Lindsay, W. A.: Decorative Heraldry, 276.
 Literature Standing Committee: Annual Report, 341; Annual Election, 401, 407; Members appointed by the Council, 439.
 Loan Library, Extension of Conveniences of, 385.
 London, Bishop of: Speech at Festival Dinner, 102.
 London Building Act: Proposed Amendments, 63.
 London Topographical Society, 448.
 Longmore, W. A.: Relics of Holywell Priory, Shoreditch, 112.
 Lord Mayor: Speech at Festival Dinner, 102.
 Lucas, Charles: Memoir of M. Charles Garnier, 465.

M

MACARTNEY, W. E.: Speech at Festival Dinner, 102.
 MALTA, NOTES ON RENAISSANCE ARCHITECTURE IN: WITH SPECIAL REFERENCE TO BUILDINGS OF THE ORDER OF ST. JOHN [Arthur S. Flower], 25.
 Malta: Position, Natural Character, and Inhabitants, 25; Dean Church's Impressions, 27; The Order of St. John of Jerusalem: Historical Sketch, 29; Its Acquisition of Malta, 32; The Building of Valletta, 33; Gerolamo Cassar and his Works, 34; Cathedral Church of St. John the Baptist, 36; *Langues* of the Order of St. John and their *Auberges*, 38; The Grand Master's Palace, 40; The Tower of Verdala, *ib.*; The Fortifications and Gates of Valletta, *ib.*; Town and Village Churches, 42; Musta and its Architect, 40, 45; Città Vecchia, 40; Characteristics of the Architecture of "the Order," 43.—*Illustrations*: see LIST OF ILLUSTRATIONS, p. xii, 48.
Discussion: Col. L. Prendergast, 46; Rev. W. K. R. Bedford, *ib.*; Col. J. R. Hogg, 47; Prof. Aitchison, *ib.*
 — Method followed in the Construction of Roofs in [Chev. Galizia], 44.
 — Inscriptions on Monuments to Architect and Builder of Church of Musta, 45.
 — The Chapel of Bones, Great Hospital, Valletta, 398.
 Manchester: Northern Art Workers' Guild, 502.
 Materials: Building Stones, 67; Cement Admixtures, 259. *See also* BRICKWORK TESTS.
 Mathews, J. Douglass: Revised

Schedule of Professional Charges, 463-6, 439-45.

Mediæval Campanili of Rome. *See* CAMPANILI.

Members newly elected, 74, 178, 263, 407.

Middle Row, Holborn [John Hebb], 111.

MINUTES.—I. (1 Nov.) Ordinary,

24; II. (15 Nov.) Ordinary, 52;

III. (29 Nov.) Business, 74; IV. (13

Dec.) Special and Ordinary, 112; V.

(17 Jan. 1898) Business and Ordinary,

178; VI. (24 Jan.) Ordinary, 180;

VII. (7 Feb.) Ordinary, 212;

VIII. (21 Feb.) Ordinary, 237; IX.

(7 March) Special and Business,

263; X. (21 March) Ordinary, 284;

XI. (4 April) Special and Ordinary,

302; XII. (18 April) Special and

Ordinary, 336; XIII. (2 May)

Special and Annual, 358; XIV. (16

May) Ordinary, 388; XV. (6 June)

Business, 406; XVI. (20 June) Ordinary,

420; XVII. (27 June) Special,

449.

Modern Architecture (Mr. Statham's),

262.

Monier-Williams, Stanley F.: Appointed

District Surveyor for South Fulham,

449.

Morris, James A.: Scotch Ecclesiastical

Buildings (review), 280.

Mountford, Ed. W.: Artistic Copy-

right, 297.

Muhammadan Architecture of Gujarat,

21.

Murray, Dr. A. S.: The President's

Opening Address, 10; Topography of

Ancient Rome (review), 140; Remarks

at the Presentation of the Royal Gold

Medal, 414.

Musta, Church of. *See* MALTA.

N

NASH, W. HILTON: Revised Schedule

of Charges, 441, 444.

National Photographic Record Association,

11.

Nisbett, N. C. H.: Winchester Cathedral

Records (review), 305.

Northern Art Workers' Guild, 502.

Northern Association. *See* ALLIED

SOCIETIES.

NOTES, QUERIES, & REPLIES.—

A Relic of Sir Christopher Wren [J. D. Crace],

13; The Ownership of Drawings [F. Warren

and Professor Kerr], 13; Carfax Tower, Oxford

[J. P. Harrison], 110; Middle Row,

Holborn [John Hebb], 111; Holywell

Priory, Shoreditch [W. A. Longmore],

112; The Mediæval Campanili of Rome

[Professor Baldwin Brown], 261; The Father

of the late William Burn, architect

[John Hebb], 262; "Modern Architecture"

[R. Langton Cole], 262; The Round Towers

of Great Britain [E. W. Hudson], 284;

"Party Structures" [Sydney Perks],

301; The French Embassy, Albert

Gate, Knightsbridge [John Hebb],

302; Artistic Copyright [Messrs.

Flockton, Gibbs, & Flockton], 333;

Winchester Cathedral [Francis

Bond], 333; The late William

Burges, A.R.A. [John Hebb], 334;

Cement Pipes, 334; Library of

Corpus Christi College, Oxford [Rev.

T. Fowler], 415; Architects of the

English Renaissance [John Hebb],

491.

Nottingham Society. *See* ALLIED

SOCIETIES.

O

OBITUARY.—J. Battye, 112; Sir

Henry Bessemer, 280; H. H.

Bridgman, 492; W. S. Cross, 112;

James Edmeston, 260, 279; G. A.

Ell, 492; C. E. Evans, 492; A. J.

Forge, 112; Charles Garnier, 465;

Octavius Hansard, 106; Augustus

Laver, 356; J. L. Pearson, 106, 112,

113; Sir H. W. Peek, 492; G. M.

Poole, 492; C. J. Shoppee, 74; H.

S. Wood, 260.

ORGAN-BUILDING: Review of F. E.

Robertson's Treatise [H. Heathcote

Statham], 477.

Owen-Jones Studentship increased

to £100, 263.

Ownership of Drawings, 13, 398.

Oxford Guide-books, 50.

P

PAINTERS' COMPANY Travelling Stu-

dentship, 49.

Painting and Decoration, 306.

Paris, Old: The *Commission* and

"Conservation of Ancient Monu-

ments," 402.

Parliamentary: Proposed Amend-

ments to the London Building Act,

63; The Institute and the Amend-

ments, 64.

Party Structures, 282, 301.

Paterson, A. N.: A STUDY OF DOMESTIC

ARCHITECTURE IN THE EASTERN

STATES OF AMERICA, with special

Reference to Questions of Plan,

Construction, Heating, Drainage,

&c., 309.

Pearson, J. L.: Decease announced,

106; The President's personal Tri-

buter, *ib.*; The Institute's Vote of

Regret and Condolence, 112.—

MEMOIR, 113.—*Illustrations*: see

LIST OF ILLUSTRATIONS, p. xii.

Peek, Sir H. W., The late, 492.

Penrose, F. C.: British School at

Athens (review), 23; Presentation

of his Portrait, 277; Appointment

as Antiquary to the Royal Academy,

363; Address at the Presentation

of the Royal Gold Medal, 409;

Oxford and Cambridge Honorary

Degrees, 402, 415.

Perks, Sydney: Party Structures, 301.

Perry, J. Tavenor: THE MEDIÆVAL

CAMPANILI OF ROME, 213; Two

South-Saxon Doorways, 483.

Perth Architectural Association: Mr. G. P. K. Young's Address, 49.
 Peterborough, 418.
 Phoebe Hearst Architectural Plan, 12, 154, 502.
 Philæ, 107.
 Picture Gallery, Cassel, 65.
 Pite, Beresford: The Revised Schedule of Charges, 404.
 Pite, W. A.: Millar's Book on Plastering (review), 17.
 Plastering, Millar's Book on, 17.
 Poole, G. M.: Decease announced, 492.
 POSSIBILITIES, THE, OF AN EIGHTEENTH-CENTURY REVIVAL [Arthur T. Bolton], 245.
 Poynter, Sir E. J.: Speech at Festival Dinner, 103.
 Practice Committee and the Stamping of Awards, 241; Annual Report: Schedule of Charges, Building Contract Form, Amendments to the London Building Act, Risks under the Employers' Liability Act, 343; Nomination to, 355; Annual Elections, 401, 407; Members appointed by the Council, 439.
 Pre-Conquest Architecture, 483.
 Preliminary Examinations. *See* EXAMINATIONS.
 Prendergast, Col. L.: Architecture in Malta, 46.
 PRESIDENT'S OPENING ADDRESS [Professor Aitchison], 1.—What the Institute may do to advance Architecture, 1; A Lesson from Constantine the Great, 2; Essentials of an Architect's Education, 3; Architecture a Progressive Art, *ib.*; Exclusion of the Unfit and Training of the Fit, 4; How the Architect in embryo should be trained, 5; The Institute Examinations: Suggested Modification of the Associates' Curriculum, 6; Qualifications for Fellowship, *ib.*; Degrees of Excellence in Architecture, *ib.*; Architects' Remuneration and Rewards, 7; Hope for the Art, given its Exponents proper Architectural Education, *ib.*—*Vote of Thanks*: H. Heathcote Statham, 8; Dr. Murray, 10.
 PRIZES AND STUDENTSHIPS 1898: NOTES ON THE DESIGNS AND DRAWINGS SUBMITTED [Ernest George], 148; Council's Deed of Award, 152; Presentation, 180; Exhibition at Allied Centres of Premiated Drawings, 206; Subjects set for 1898-99, 258; Owen-Jones Studentship increased to £100, *ib.*
 Probationers 1897-98, 60, 436.
 Professional Charges: The Revised Schedule, 402; Discussion, 403, 439; Schedule as finally revised and adopted, 445.

Q

QUANTITY SURVEYING, Mr. J. Leaning's book on, 50.

R

RALEIGH, CECIL: Housing of the Drama, 204.
 Reed, Harbottle: Exeter (review), 395.
 Register for Assistants, 401.
 Renaissance Architecture in Malta. *See* MALTA.
 REPORT OF THE COUNCIL FOR THE OFFICIAL YEAR 1897-98, 337; Reports of the Standing Committees, 340; Finances, 344; Discussion, 359.
 REVIEWS.—
 Addleshaw, P.: *Exeter Cathedral* [Harbottle Reed], 395.
 Atkinson, T. D.: *Cambridge* [W. M. Fawcett], 141.
 Baddeley, J. J.: *Guide to the Guildhall* [Thos. Arnold], 416.
 Bilson, J.: *North Bar, Beverley* [Prof. Baldwin Brown], 211.
 Blomfield, R.: *Renaissance Architecture in England* [Paul Waterhouse], 122.
 Boulnois, H. Percy: *Municipal Engineers' Handbook* [R. F. Grantham], 469.
British School at Athens Annual [F. C. Penrose], 22.
 Buckmaster, M. A.: *Elementary Architecture* [A. T. Bolton], 468.
 "Builder" Album [R. Phené Spiers], 144.
 Burgess, Jas.: *Muhammadan Architecture in Gujrat* [Wm. Simpson], 21; *Antiquarian Remains, Bombay Presidency* [Wm. Simpson], 450.
 Burgoyne, F. J.: *Library Construction* [R. Elsey Smith], 397.
 Clouston, K. W.: *Chippendale Furniture* [E. Guy Dawber], 207.
 Coleman, T. E.: *Stable Sanitation and Construction* [R. Stephen Ayling], 257.
 Cousins, H.: *Indian Archaeological Survey* [Wm. Simpson], 331.
 Darbyshire, A.: *An Architect's Experiences* [Percy Worthington], 418.
 Day, L. F.: *Stained Glass Windows* [J. J. Stevenson], 242.
 Dearmer, Percy: *Oxford Cathedral* [John Cotton], 50.
 Eye, G. W.: *Artistic Treatment of Heraldry* [J. A. Gotch], 164.
 Farrow, F. R.: *Specifications* [Ebenezer Gregg], 467.
Glasgow Cathedral [W. J. Anderson], 493.
 Hiatt, C.: *Chester Cathedral* [Frank Caws], 14.
 Huysmans, J. K.: *La Cathédrale* [A. E. Street], 453.
 Kendrick, A. F.: *Lincoln Cathedral* [W. G. Watkins], 503.
 Kidder, F. E.: *Building Construction* [Banister F. Fletcher], 109.
 Lanciani, R.: *Ruins of Ancient Rome* [A. S. Murray], 140.
 Leach, A. F.: *Building of Beverley Bar* [Prof. Baldwin Brown], 211.

Leaning, J.: *Quantity Surveying* [Matt. Garbutt], 50.
 Lyons, H. G.: *Philæ* [Somers Clarke], 107.
 Macey, F. W.: *Specifications in Detail* [John Leaning], 357.
 MacGibbon, D., and Ross, T.: *Scottish Ecclesiastical Buildings* [James A. Morris], 280.
 Merrill, G. P.: *Stones for Building and Decoration* [H. W. Burrows], 72.
 Middleton, G. A. T.: *Architectural Photography* [Max. Clarke], 417.
 Millar, W.: *Plastering, Plain and Decorative* [W. A. Pite], 17.
 Northern Art Workers' Guild: Catalogue, 502.
 Palmer, G. H.: *Rochester Cathedral* [Frank Caws], 255.
 Pearce, W. J.: *Painting and Decorating* [H. C. Corlette], 306.
 Perks, Sydney: *Party Structures* [H. H. Collins], 282, 301.
 Phipson, E.: *Choir-stalls and their Carvings*, 73.
 Poore, G. V.: *The Dwelling-House* [H. V. Lanchester], 210.
 Rea, Alex.: *Monumental Remains Dutch East India Company* [Wm. Simpson], 452.
 Richards, H. C.: *Law and Practice of Compensation* [J. A. Strahan], 332.
 Robertson, F. E.: *Organ-Building* [H. Heathcote Statham], 477.
 Routledge, Rev. C. F.: *St. Martin's, Canterbury* [E. W. Hudson], 473.
 Sergeant, P. W.: *Winchester Cathedral* [A. Needham Wilson], 303.
 Statham, H. H.: *Modern Architecture* [Frank Caws], 157; *Architecture among the Poets* [John Cotton], 470.
 Stephens, W. R. W.: *Documents relating to Winchester Cathedral* [N. C. H. Nisbett], 306.
 Sweeting, W. D.: *Peterborough Cathedral* [H. M. Townsend], 418.
 Ward, J.: *Historic Ornament* [J. Humphreys Jones], 252.
 Watt, J. C.: *Classic Decorative Work* [R. S. Balfour], 386.
 Wells, J.: *Oxford and its Colleges* [John Cotton], 50.
 Rochester Cathedral, 255.
 Roman Campanili, Mediaeval. *See* CAMPANILI.
 Rome, Ruins and Excavations of, 140.
 Round Towers of Great Britain, 284.
 ROYAL GOLD MEDAL.—Portrait of Professor Aitchison, R.A., recipient 1898, *frontispiece*; The Council's Nomination: Statement by Chairman of General Meeting, 205; Protest by Mr. Woodward against Procedure *re* Nomination, *ib.*; Election, 263; Presentation and Address by Mr. Penrose, 409, 414;

Professor Aitchison's Reply, 412;
 Dr. Murray's Remarks, 414.
 Royal Gold Medallists, Portraits of,
 414.

S

SABINA, A Bomos in [S. Giampietri],
 487; Pelasgic Remains in Italy,
 487, 489; Prehistoric Peoples of
 Italy, 488; Italy the Birthplace of
 Civilisation, 491.

Sachs, Edwin O.: THE HOUSING OF
 THE DRAMA, WITH SPECIAL REFERENCE
 TO SUBSCRIPTION AND ENDOWED
 THEATRES, 181.

St. John of Jerusalem, Order of: His-
 torical Sketch: Architects, Build-
 ings, &c. See MALTA.

St. Martin's, Canterbury, 473.

Sanitary Institute Congress, 492.

Sanitation: Dr. Poore's Book, 210;
 in the United States, 325.

Sargent, J. S.: His Portrait of Mr.
 Penrose, 277.

Saxon Doorways: St. John Baptist
 Wivelsfield and St. Mary Magdalene
 Bolney, 483; St. John Barnack,
 484; Worth and Sompting, 486;
 Probable Date of Erection, *ib.*

Schröter, V.: Kronstadt Cathedral
 Competition, 135.

Science Standing Committee: Annual
 Report; Brick Tests, Standardising
 Size of Bricks, 343; Fire Preven-
 tion, *ib.*; Annual Election, 401,
 407; Members appointed by the
 Council, 439.

Scotch Ecclesiastical Buildings, 280.

Scott, Wm.: Some Old Italian Build-
 ing Accounts, 249.

Sepulchres, Egyptian. See EGYPT.

SESSIONAL & OTHER PAPERS.—
 Bomos, A, in Sabina [Cav. Giampietri],
 487.

Brickwork Tests: Report on the
 Third Series of Experiments [Wm.
 C. Street and Max Clarke], with
 Appendices by Professor Unwin,
 77, 129.

Copyright, Artistic, with special
 reference to Architects [M. Georges
 Harmand], 285.

Domestic Architecture in the
 Eastern States of America in
 1896: with special reference to
 Plan, Construction, Heating, Drain-
 age [A. N. Paterson], 309.

Eighteenth Century Revival, Possi-
 bilities of an [Arthur T. Bolton],
 245.

Glasgow Cathedral [W. J. Ander-
 son], 493.

Great Mosque of the Omeiyades,
 Damascus [R. Phené Spiers], 166.

Heraldic Drawing and its Adapta-
 tion [J. D. Crace], 265.

Historic Development of Architec-
 ture [W. J. Anderson], 138.

Holywell Priory, Shoreditch [E.
 W. Hudson], 75, 175.

Housing of the Drama, The;
 with special reference to Subscrip-

tion and Endowed Theatres [Edwin
 O. Sachs], 181.

Humanist Architecture in Eng-
 land [Paul Waterhouse], 122.

La Cathédrale [A. E. Street], 453.
 Lagoons, The, of Venice [Cav.
 Boni], 389.

Libraries of the Middle Ages, The
 [T. G. Jackson], 365.

Mediæval Campanili of Rome,
 The [J. Tavenor Perry], 213.

Notes on Renaissance Architec-
 ture in Malta, with special refer-
 ence to the Buildings of the Order of St.
 John [Arthur S. Flower], 25.

Notes on the Designs and Draw-
 ings submitted for Prizes and
 Studentships [Ernest George], 148.

Organ Building [H. Heathcote
 Statham], 477.

Pearson, The late John Lough-
 borough, R.A., 113.

President's Opening Address, 1.
 Report of the Council 1897-98,
 337.

Royal Gold Medal: Mr. Penrose's
 Address and Professor Aitchison's
 Reply, 409.

Some Old Italian Building Ac-
 counts [Wm. Scott], 249.

Spain, A Studentship Tour in
 [H. S. East], 458.

Stair of the London Dwelling-
 House, The: A Death-Trap [Wm.
 Simpson], 171.

Students, President's Address to,
 145.

Thèbes: Excursion à la Vallée-
 des-Reines [P. Hippolyte-Boussac],
 421.

Tombeau d'un Astrologue Thé-
 bain de la xviii^e Dynastie [P. Hip-
 polyte-Boussac], 53.

Two South-Saxon Doorways [J.
 Tavenor Perry], 483.

Warming of Public Buildings
 [Frederic R. Farrow], 347.

Shaw, G. Bernard: Housing of the
 Drama, 202.

Sheffield Society. See ALLIED SOCIE-
 TIES.

Shoppee, C. J.: Decease announced,
 74.

Simpson, Wm.: Indian Archæo-
 logical Survey: Muhammadan
 Architecture of Gujarat (review),
 21; The Stair of the London
 Dwelling-House a Death-Trap, 171;

Antiquarian Remains in Central
 India (review), 331; Antiquarian
 Remains in Bombay Presidency
 (review), 450; Monumental Re-
 mains of Dutch East India Com-
 pany in Madras Presidency (review),
 452.

Slater, John: Artistic Copyright, 296;
 The Annual Report, 363; Revised
 Schedule of Charges, 440.

Smith, J. Osborne: Revised Schedule
 of Charges, 441.

Smith, P. Gordon: The Brickwork
 Tests, 131.

Smith, R. Elsey: Libraries (review),
 397.

Smith, Professor T. Roger: The Presi-
 dent's Election as R.A., 153.

Spain, Mr. H. S. East's Tour in, as
 Aldwinckle Student, 458; Gerona,
 Barcelona, Tarragona, 458; Va-
 lencia, Granada, Seville, Cordova,
 459; Toledo, Madrid, 460; The
 Escorial, Segovia, Salamanca, 461;
 Irish College, Salamanca, 462;
 Zamora, Toro, Valladolid, Palencia,
 Burgos, 464; Route home, 465.—
Illustrations: see LIST OF ILLUSTRATIONS,
 xiii.

Specifications, F. W. Macey's, 357;
 F. R. Farrow's, 467.

Spiers, R. Phené: *Royal Academy
 Architecture* (review), 144; THE
 GREAT MOSQUE OF THE OMEIYADES,
 DAMASCUS, 166; Roman Campanili,
 232.

Stables, 257.

Stained Glass Windows [J. J. Steven-
 son], 242.

Stamping of Awards, 241.

Standing Committees: Annual Re-
 ports, 340; Annual Elections, 400,
 407; Members appointed by the
 Council, 439.

Stannus, Hugh: Cantor Lectures,
 157; Manchester Lectures, 492.

Statham, H. Heathcote: Speech on
 the President's Address, 8; *re* title
 of his book *Modern Architecture*,
 207; Domestic Architecture in the
 United States, 330; Libraries of the
 Middle Ages, 382; Revised Schedule
 of Charges, 440 *et seq.*; ORGAN
 BUILDING (review), 477.

Stent, Sydney: Obituary notice, 402.

Stevenson, J. J.: Stained Glass Win-
 dows (review), 242.

Stones for Building, 67.

Strahan, J. Andrew: Compensation
 (review), 332.

Street, A. E.: M. Huysmans' *La
 Cathédrale* (review), 454.

Street, Wm. C.; REPORT ON THE
 THIRD SERIES OF BRICKWORK TESTS,
 77, 135.

STUDENTS, ADDRESS TO [Professor
 Aitchison], 145.

Students R.I.B.A. Prize-winners at
 the R.A., 107.

Students 1897-98, 61, 437.

Sunderland By-laws and Fireproof
 Construction, 386.

Sunderland Fire [Frank Caws], 447.

T

TADEMA, L. ALMA: Speech at the
 Presentation of Mr. Penrose's Por-
 trait, 277.

Tanner, A. W.: Revised Schedule of
 Charges, 441.

Teaching University: The Institute
 Delegates before the Duke of Devon-
 shire, 157.

THEATRES.—THE HOUSING OF THE
 DRAMA: WITH SPECIAL REFERENCE TO

- SUBSCRIPTION AND ENDOWED THEATRES [Edwin O. Sachs], 181.—The Private Theatre of the Metropolis, 182; The Municipal Subscription and Endowed Theatres of the Continent, 183; The Court and Government Theatres of the Continent, 185; Theatre Design, 188; The Theatre Architect, 190; Examples of Private Theatres, 192; Examples of Municipal, Subscription, and Endowed Theatres, 196; Examples of Court and Government Theatres, 198; Subscription and Endowed Theatres advocated, 201.—*Illustrations*: see LIST OF ILLUSTRATIONS, xii.
- Discussion*: G. Bernard Shaw, 202; William Archer, 203; Alfred Darbyshire, *ib.*; Cecil Raleigh, 204.
- THÈBES: EXCURSION À LA VALLÉE-DES-REINES [P. Hippolyte-Boussac], 421 (with English translation).—Convent of Theodoros, 422; Tomb of Queen Titi, 424; Description of Interior and of the Sculptured Decoration, *ib.*; Ancient Egyptian belief concerning a future state, 428; Story told by the Sculptures, 430; Description of Tomb of Queen Isis, 432; Scene in the Valley, 434.—*Illustrations*: see LIST OF ILLUSTRATIONS, xiii.
- Thompson, Sir E. Maunde: Speech at Festival Dinner, 104.
- Todd, F.: Revised Schedule of Charges, 411.
- Townsend, H. M.: Peterborough (review), 418.
- Training of Architects. See PRESIDENT'S ADDRESSES.
- Two South-Saxon Doorways: St. John Baptist Wivelsfield, and St. Mary Magdalene Bolney [J. Tavenor Perry], 483.
- U
- UNWIN, Professor: The Third Series of Brickwork Tests, 100; Review of the Experiments, 131.
- V
- VALLETTA. See MALTA.
- VENICE, THE LAGOONS OF [Cav. G. Boni], 389.—Modernising Venice: Some Evil Results, 389; Map of the Lagoons, 390; Insanitary Condition of the Lagoons resulting from Modern Engineering Works, 392; Protest against proposed New Bridge, *ib.*; Efficient Dredging of Lagoons required, 393; Fertilising Properties of Mud dredged from Canals, *ib.*; Poor Lands in Neighbourhood that would benefit, *ib.*; Time-honoured Industry of Venice threatened, 394.—*Illustrations*: see LIST OF ILLUSTRATIONS.
- W
- WARMING OF PUBLIC BUILDINGS [Frederic R. Farrow], 347.—Hot-air Heating, 347; Hot-water, 348; Low-pressure, *ib.*; High-pressure, 350; Steam, 351; Radiators, 352; Boilers, 353; Calculations for the Provision of Heating Power, 354; Supplementary Tables, 355.
- — — American Methods. See DOMESTIC ARCHITECTURE.
- Warren, F.: Ownership of Drawings, 13.
- Waterhouse, Paul: HUMANIST ARCHITECTURE IN ENGLAND, 122.
- Watkins, W. G.: Lincoln Cathedral (review), 503.
- Watt, J. C.: Specimens of his drawings of Classic Decorative Work, 386.
- Webb, Aston: Speech at Festival Dinner, 102.
- White, Judge Meadows: Obituary notice, 402.
- White, Wm.: The Brickwork Tests, 134; Decorative Heraldry, 276.
- Wilson, A. Needham: Winchester Cathedral (review), 304.
- Winchester Cathedral, 303; Records of, 305; Bishop Edington's Work Francis Bond, 333.
- Woodthorpe, Edmund: Revised Schedule of Charges, 440 *et seq.*
- Woodward, Wm.: Suggestion *re* Proposed Amendments of Building Act, 64; The Brickwork Tests, 134; Questions *re* Festival Dinner and Government Offices Sites, 178; Protest against Council's Procedure *re* Nomination of Royal Gold Medalist, 205; Roman Campanili, 233; The New Government Offices, 284; The Annual Report, 359; Revised Schedule of Charges, 440 *et seq.*
- Worthington, Percy: An Architect's Reminiscences (review), 418.
- Wren, Sir Christopher, A Relic of, 13.
- Y
- YOUNG, G. P. K.: Perth Architectural Association, 49.
- Young, Wm.: Appointed to prepare Plans for New War Office, 447.

LIST OF ILLUSTRATIONS.

- Portrait of Professor Aitchison, R.A., *President*, Royal Gold Medalist 1898 (*frontispiece*).
- Plan of Site of the University of California (*treble-page plate*), facing p. 154.
- CHESTER CATHEDRAL.
- The Cathedral from the Walls, 14.
- The Cathedral at the end of the Seventeenth Century, 15.
- The Choir-screen and Organ, 16.
- PLASTERING, PLAIN AND DECORATIVE.
- A Piece of Primiticcio's Work at Fontainebleau, 18.
- Stucco (assumed to be of the First Century A.D.) found near the Villa Farnesina, Rome, in 1879, 19.
- Stucco Ceiling and Wall Decoration, Palazzo d'Albrizza, Venice, by A. Vittorino, 1560, 20.
- NOTES ON RENAISSANCE ARCHITECTURE IN MALTA.
- The Cathedral, Valletta, West Front, 26.
- The Cathedral, Valletta, Interior, 27.
- The Cathedral, Valletta, St. James's Chapel, 28.
- Auberge de Castille, Valletta, Exterior, 29.
- Auberge de Castille, Valletta, Court, 31.
- Auberge d'Italie, Valletta, 32.
- Corner of the Palace and Public Library, Valletta, 33.
- Chapel in Fort St. Elmo, Valletta, 35.
- St. Helena Gate, Cottonera Lines, 37.
- Gate of Fort Manoel, 37.
- An Echauguette, Floriana Lines, 38.
- Attard Church: West Door, 39.
- Cathedral Church of St. John, Valletta: Plan, 41.
- Diagrams illustrating Construction of Roofs in Malta, 44, 45.
- Chapel of Bones, Valletta, 399.
- TOMB OF THEBAN ASTROLOGER OF EIGHTEENTH DYNASTY.
- Sketches from Paintings in the Tomb, 53, 56-58.
- Plan and Section, 54.
- HOLYWELL PRIORY, SHOREDITCH.
- Plan of Site, 75.
- A Supposed Relic, 175.
- A Leaden Coffin, 176.
- Effigy of a Bishop, 234.
- The Seal, 235.
- BRICKWORK TESTS.
- Twenty-four Photographic Illustrations representing Brick Walls under Compression, 79-89.
- Diagram showing Compression of Walls under increasing Pressures, 99.
- THE LATE J. L. PEARSON.
- Dalton-Holme Church, Yorkshire, 114.
- St. Michael's, Croydon, 115.
- Truro Cathedral, 117.
- Lechlade Manor, 118.
- Music Room, Westwood House, 119.
- St. Augustine's, Kilburn, 120.
- HUMANIST ARCHITECTURE IN ENGLAND.
- Carved Wood Panel, 122.
- Hospital for Decayed Fishermen, Great Yarmouth, 124.

ILLUSTRATIONS (*contd.*).

- Centre Bay to South Front, Wilton, 125.
Town Hall, Abingdon, 127.
- CAMBRIDGE.
Seal of 1423, 141.
Part of Hamond's Map, 142.
Catalogue Room, University Library, 143.
- MODERN ARCHITECTURE,
Competitive Design for Edinburgh Municipal Buildings, 159.
Shop Front, 161.
Street Front, 161.
City Bank, Ludgate Hill, 161.
Mr. Goldie's Church as built, 162.
Mr. Goldie's Church as originally designed, 162.
Mr. Emerson's Design for Liverpool Cathedral, 163.
Mr. Hay's Design for Liverpool Cathedral, 163.
- ARTISTIC TREATMENT OF HERALDRY.
Tomb of Margaret Beaufort, Duchess of Richmond, 164.
Example of Blazon, 164.
Terra cotta Medallion in Della Robbia Ware, 165.
- THE GREAT MOSQUE OF DAMASCUS.
Ground Plan, measured and drawn by Archibald C. Dickie, 167.
Details, 168.
Triple Doorway in South Wall, 168.
Triple Doorway, East Propylæa, 169.
Triple Doorway, East Propylæa, Details, 170.
Plan of Great Western Archway, 170.
- HOUSING OF THE DRAMA.
Court Theatre, Vienna; National Opera - House, Paris; D'Oyly Carte's Opera House, London: scales compared, 181.
Private Theatre, Haymarket, 184.
Private Theatre, Wolverhampton, 185.
Private Suburban Theatre, Peckham, 186.
Subscription Theatre, Stratford-on-Avon, 187.
Subscription Theatre, Frankfort, 188.
People's Subscription Theatre, Worms, 189.
Municipal Theatre, Essex, 190.
Municipal Theatre, Bilbao, 191.
Municipal Theatre, Geneva, 192.
Municipal Theatre, Tiflis, 193.
Municipal Theatre, Rheims, 193.
Municipal Theatre, Palermo, 194.
Auditorium, Municipal Theatre, Odessa, 195.
National Theatre, Christiania, 196.
National Theatre, Bucharest, 197.
Court Theatre, Vienna, Perspective View, 198; Plan, 199; Grand Staircase, 200.
- MEDIAVAL CAMPANILI OF ROME.
S. Alessio, 214.
S. Cecilia, 215.
S. Croce in Gerusalemme, 216.

ILLUSTRATIONS (*contd.*).

- S. Giorgio in Velabro, 217.
SS. Giovanni e Paolo, 218.
S. Lorenzo in Lucina, 219.
S. Marco, 220.
S. Maria in Cosmedin, 221, 227, 231.
S. Maria in Trastevere, 222.
S. Michele in Borgo, 223.
S. Pudenziana, 224.
S. Silvestro in Capite, 225.
S. Ambrogio, Milan, 226.
SS. Quattro Coronati, 227.
Niches, 228.
Bacini, from S. Francesca Romana, 229.
Majolica on SS. Giovanni e Paolo, 229.
S. Giovanni Laterano, 229.
- HISTORIC ORNAMENT.
Bronze Horn found at Weimar, 253.
Cinquecento Floral Ornament, 253.
Champlevé Enamel of Geoffrey Plantagenet, 254.
Leaf of a Roman Diptych, 255.
- HERALDIC DRAWING AND ITS ADAPTATION.
Heraldry over Gateway, Carthusian Convent, near Burgos, 265.
Pugin's Designs for Stained Glass in Westminster Palace, 266, 267.
Hastings Brass, Elsing Church, Norfolk, 269.
Sir John Harsick's Crest, 269.
German Example, 269.
Gateway of Bisagra, Toledo, 271.
House of the Shells, Saragossa, 272.
- WINCHESTER CATHEDRAL.
View, 303.
Nave, looking West, 304.
Nave, looking East, 305.
- DOMESTIC ARCHITECTURE IN THE UNITED STATES.
House at Setauket, N.Y., 309.
Plans of Houses, New York, 313.
Plan of Self-contained Houses, New York, 314.
Plan of Davidson House, Washington, 314.
Wellesley Apartment Houses, New York, 315.
Plan of House at Brookline, Boston, 317.
Plan of House, Shamrock Cliff, Newport, 318.
Diagrams of Heating and Plumbing Arrangements, 323, 324, 327.
- LIBRARIES OF THE MIDDLE AGES.
The Bodleian, Selden Wing, 365.
Bishop Cobham's Library, St. Mary's, Oxford, 369.
Merton College Library, Oxford, 372.
Laurentian Library, Florence, 374.
Trinity College Library, Cambridge, 378.
- CLASSIC DECORATIVE WORK.
White Marble Capital, Eleusis, 386.
Bronze Candelabrum, Naples, 387.
Sculpture, Theatre of Dionysos, Athens, 387.
- LAGOONS OF VENICE.
Map, 391.

ILLUSTRATIONS (*contd.*).

- View carved in Wood, 391.
Marshes from Torcello, 393.
- EXETER.
View of Cathedral, from South-West, 395.
Guildhall, 396.
Patteson Pulpit, 397.
- PETERBOROUGH.
Remains of Saxon Church, 419.
Doorway to Cathedral, 419.
Church of S. John Baptist, and Guildhall, 420.
- THEBES: LA VALLÉE-DES-REINES.
Convent of Theodoros, 421.
Vallée-des-Reines, 423.
Entrance to Tomb of Queen Titi, 425.
Plan of Tomb, 427.
Sketch of the Decoration, 429.
Queen Titi, 431.
Plan of Tomb of Queen Isis, 433.
Deir-el-Medineh Temple, 435.
- CHARTRES.
Portion of Tympanum, West Porch, Chartres Cathedral, 453.
North Porch, Cathedral of Chartres, 455.
La Rue de Bourg, 457.
- STUDENTSHIP TOUR IN SPAIN.
Upper Part of Cross, San Antonio, 458.
Statue of Philip III., Madrid, 460.
House in Segovia, 461.
Irish College, Salamanca, 462, 463.
Arms on Bridge House, Zamora, 464.
Top of Window Grille, Toro, 465.
- ST. MARTIN'S, CANTERBURY.
Old Engravings of Church, 474, 476.
Plan, 474.
Chancel, 475.
Saxon Doorway, 476.
- TWO SAXON DOORWAYS.
S. John Baptist, Wivelsfield, 484-5.
S. Mary Magdalene, Bolney, 484-5.
- A BOMOS IN SABINA.
Plan, 488.
Remains—Two Views, 489.
Large Stone Blocks outside Osteria, 489.
Entrance Tunnel to Roman Tomb, 489.
- GLASGOW CATHEDRAL.
The Cathedral in 1833, 493.
South Doorway, Lower Church, 495.
Nave, from Organ Gallery, 496.
Nave, looking East, 497.
Door of Chapter-House, from Lower Church, 499.
Tomb of St. Kentigern, 500.
- LINCOLN CATHEDRAL.
Triforium, Angel Choir, 503.
View from the South-West, 504.
- Blenheim, Elevation facing Garden, 245.
The Northern Association Presidential Badge, 207.
Sheraton Side-board, 209.
West Doorway, Rochester, 256.
Lichgate at Pulicat, 452.

LIST OF CONTRIBUTORS, AUTHORS OF ADDRESSES, PAPERS, &c.

AND OF THOSE WHO HAVE JOINED IN THE DISCUSSIONS AT GENERAL MEETINGS.

- Professor Aitchison, R.A., *President*.
 J. Macvicar Anderson, F.R.S.E. [*F.*].
 William J. Anderson [*A.*].
 Wm. Archer.
 R. Stephen Ayling [*A.*].
 R. Shekleton Balfour [*A.*].
 Sir John Wolfe Barry, K.C.B. [*II.A.*].
 Sydney B. Beale [*A.*].
 Rev. W. K. R. Bedford.
 Arthur T. Bolton [*A.*].
 Francis Bond.
 Cav. G. Boni [*Hon. Corr. M.*].
 Henry Cowell Boyes [*F.*].
 H. W. Brewer [*II.A.*].
 C. H. Brodie [*A.*].
 Professor Baldwin Brown, M.A. [*II.A.*].
 J. M. Brydon [*F.*].
 H. W. Burrows [*A.*].
 Bruce J. Capell [*A.*].
 Arthur Cates [*F.*].
 Frank Caws [*F.*].
 J. Willis Clark, M.A.
 Max. Clarke [*A.*].
 Somers Clarke, F.S.A.
 S. Flint Clarkson [*F.*].
 R. Langton Cole [*A.*].
 Dr. Collins.
 H. H. Collins [*F.*].
 Hubert C. Corlette [*A.*].
 John Cotton [*F.*].
 J. D. Crace [*H.A.*].
 Thos. W. Cutler [*F.*].
 Alfred Darbyshire [*F.*].
 E. Guy Dawber [*A.*].
 Hubert S. East [*A.*].
 Wm. Emerson, *Hon. Secretary*.
 G. W. Eve.
 Frederic R. Farrow [*F.*].
 W. M. Fawcett, M.A., *Vice-President*.
 Owen Fleming [*A.*].
 Banister F. Fletcher [*A.*].
 H. L. Florence [*F.*], *Vice-President*.
 Arthur S. Flower, M.A., F.S.A. [*A.*].
 Rev. T. Fowler.
 Edward Gabriel [*A.*].
 Matt. Garbutt [*A.*].
 Ernest George, *Vice-President*.
 Cav. S. Giampietri [*Hon. Corr. M.*].
 J. Alfred Gotch, F.S.A. [*F.*].
 Richard F. Grantham [*II.A.*].
 Ebenezer Gregg [*F.*].
 E. A. Gruning, *Vice-President*.
 R. M. Hamilton [*A.*].
 Georges Harmand.
 J. P. Harrison, M.A.
 . Forster Hayward, F.S.A. [*F.*].
 John Hebb [*F.*].
 J. Hine [*F.*].
 P. Hippolyte-Boussac.
 Col. J. R. Hogg.
 W. H. St. John Hope, M.A.
 E. W. Hudson [*A.*].
 T. G. Jackson, R.A.
 J. Humphreys Jones, B.A. [*A.*].
 Delissa Joseph [*F.*].
 Professor Kerr [*F.*].
 Zeph. King [*F.*].
 H. V. Lanchester [*A.*].
 H. Hardwicke Langston [*A.*].
 John Leaning, F.S.I.
 W. A. Lindsay, M.A., F.S.A.
 London, The Bishop of.
 London, The Lord Mayor of.
 W. A. Longmore [*F.*].
 Charles Lucas [*Hon. Corr. M.*].
 W. E. Macartney, M.P.
 J. Douglass Mathews [*F.*].
 James A. Morris [*F.*].
 Ed. W. Mountford [*F.*].
 A. S. Murray, LL.D., F.S.A. [*H.A.*].
 W. Hilton Nash [*F.*].
 N. C. H. Nisbett [*A.*].
 A. N. Paterson, M.A. [*A.*].
 F. C. Penrose, F.R.S. [*F.*].
 Sydney Perks [*A.*].
 J. Tavenor Perry [*F.*].
 Beresford Pite [*F.*].
 W. A. Pite [*F.*].
 Sir E. J. Poynter, P.R.A. [*H.F.*].
 Colonel Lenox Prendergast [*II.A.*].
 Cecil Raleigh.
 Harbottle Reed.
 Edwin O. Sachs.
 Wm. Scott.
 G. Bernard Shaw.
 Wm. Simpson, R.I. [*H.A.*].
 John Slater [*F.*].
 J. Osborne Smith [*F.*].
 P. Gordon Smith [*F.*].
 R. Elsey Smith [*A.*].
 Professor T. Roger Smith [*F.*].
 R. Phenè Spiers, F.S.A. [*F.*].
 H. Heathcote Statham [*F.*].
 J. J. Stevenson [*F.*].
 J. Andrew Strahan, LL.B. [*II.A.*].
 A. E. Street, M.A. [*F.*].
 Wm. C. Street [*F.*].
 L. Alma Tadema, R.A. [*H.A.*].
 A. W. Tanner [*A.*].
 Sir E. Maunde Thompson.
 F. Todd [*F.*].
 H. M. Townsend [*A.*].
 Professor Unwin, F.R.S. [*H.A.*].
 F. Warren [*A.*].
 Paul Waterhouse, M.A. [*F.*].
 W. G. Watkins [*A.*].
 J. C. Watt.
 Aston Webb, F.S.A. [*F.*].
 Wm. White, F.S.A. [*F.*].
 A. Needham Wilson [*A.*].
 Edmund Woodthorpe, M.A. [*F.*].
 Wm. Woodward [*A.*].
 Percy Worthington [*A.*].

THE LIBRARY.

ADDITIONS: 12TH OCTOBER 1897 — 6TH OCTOBER 1898.

THE REFERENCE LIBRARY.

DONATIONS.

Drawings, Prints, Photographs, &c.

- HEBB (J.) *Fellow*—Portrait of W. E. Nesfield, by J. E. Brandon. L. — 1858
 LEADER (F.)—Wartburg Castle. Album of photos. *n.d.*
 SALVIN (Mrs. O.)—SALVIN (A.) Drawings and sketches. 10 vols. *fo. v.p. v.d.*
 19 rolls of miscellaneous drawings and sketches. (*In Trust.*)

TOTAL: 10 vols.

Books, Pamphlets, &c.

- ABURROW (C.) PUBLIC WORKS DEPT., JOHANNESBURG—Ann. Rept. fo. Lond. 1897
 ADAMS (H.)—Practical trigonometry. 8o. Lond. 1896
 AITCHISON (Prof. G.) R.A., *President*—WARD (J.)—Principles of ornament. 8o. Lond. 1896
 ANDERSON (A. W.) *Associate*—ANDREWS (W.) and others. *Bygone Hertfordshire.* 8o. Lond. 1898
 ARNOLD (E.) the Publisher—CLOUSTON (K. W.)—Chippendale period in English furniture. 4o. Lond. 1897
 AYLING (R. S.) *Associate, Godwin Bursar*—Meat markets and abattoirs of La Villette and La Rive Gauche, Paris. la. fo. MS. — 1898
 BATSFORD (B. T.) the Publisher—DAY (L. F.)—Windows. 8o. Lond. 1897
 PHIPSON (E.)—Choir stalls and their carvings. 4o. Lond. 1896
 SPIERS (R. P.)—Orders of architecture. 3rd ed. fo. Lond. 1897
 STATHAM (H. H.) *Fellow*—Architecture among the poets. 8o. Lond. 1898
 WATT (J. C.)—Examples of Greek and Pompeian decorative work. fo. Lond. 1897
 BELL & SONS (Messrs. G.)—EVE (G. W.)—Decorative heraldry. sm. 8o. Lond. 1897
 PALMER (G. H.)—Cathedral church of Rochester. 8o. Lond. 1897
 SERGEANT (P. W.)—Cathedral church of Winchester. 8o. Lond. 1898
 BELTRAMI (L.) *Hon. Corr. M.*—ARMANINI (P. O.)—Il Pantheon. la. fo. Milan 1898
 BERMUDEZ (A. R. A.)—Projecto para a organisação d'uma Sociedade Promotora de Habitações Economicas destinadas ás classes laboriosas e menos abastadas. pam. 8o. Lisbon 1897
 BILSON (J.) *Fellow, F.S.A.*—Beverley Minster. pam. 8o. Durham [1893]
 Recent discoveries at Durham Cathedral. pam. 8o. Durham [1897]
 The North Bar, Beverley. 8o. — — —
 LEACH (A. F.) & BILSON (J.)—Building of Beverley Bar. 8o. — — —
 BLOMFIELD (R.)—History of Renaissance Architecture in England. 2 vols. sm. fo. Lond. 1897
 BONI (CAVALIERE G.) *Hon. Corr. M.*—ANON.—Il momento dell' arte. 8o. Rome 1898
 BOULNOIS (H. P.)—Municipal and sanitary engineers' handbook. 3rd ed. 8o. Lond. 1898
 BOUSSAC (P. H.)—Tombeau d'Anna. pam. 8o. Paris 1897

- BREWER (C.) *Pugin Student* 1896—Account of tour in Essex. MS. fo. — 1897
 BRITISH FIRE PREVENTION COMMITTEE—BLASHILL (T.)—Lessons from fire and panic. pam. 8o. Lond. 1898
 BONNER (H.)—New York Fire Department. pam. 8o. Lond. 1898
 DARBYSHIRE (A.)—Theatre exits. pam. 8o. Lond. 1898
 FARROW (F. R.)—Fire-resisting floors. pam. 8o. Lond. 1898
 MOORE (F. C.)—How to build 'fire-proof.' pam. 8o. Lond. 1898
 SACHS (E. O.)—What is fire protection? pam. 8o. Lond. 1897
 The Paris charity bazaar fire. pam. 8o. Lond. 1897
 SCOTTER (R. H.)—Cotton fires. pam. 8o. Lond. 1898
 SUMNER (H.)—Fire service in factories. pam. 8o. Lond. 1898
 BRITISH SCHOOL AT ATHENS—Annual, 1895-98, No. ii. 4o. Lond. 1897
 BUILDER (THE) the Publisher—The Builder Album. fo. Lond. 1897
 CANNIZZARO (M. E.)—ASSOCIAZIONE ARTISTICA FRA I CULTORI DI ARCHITETTURA ROMA—Annuario, 1895-96. la. 8o. Rome 1895-96
 CASTILHO (J. DE)—Elogio historico do architecto J. P. N. da Silva. pam. fo. Lisbon 1897
 CATES (ARTHUR) *Fellow*—Biographical notice of the late Sir James Pennethorne. pam. fo. — — —
 Biographical notice of the late John Pennethorne. pam. fo. — — —
 Great domed church of Moustá, Malta: inscriptions on the monuments of the designer and builder. MS. fo. — — —
 HUDSON (A. A.)—Law of building. 2nd ed. 2 vols. la. 8o. Lond. 1895
 RUI (J. B. DE LA)—Traité de la coupe des pierres. fo. Paris 1728
 CHAPMAN & HALL (Messrs.) the Publishers—
 STATHAM (H. H.)—Modern architecture. 8o. Lond. 1897
 WARD (J.)—Historic ornament. 2 vols. 8o. Lond. 1897
 CLARENDON PRESS (THE) the Publishers—BUCKMASTER (A.)—Elementary architecture. 8o. Lond. 1898
 CLASON (PROF. G.) *Hon. Corr. M.*—DAHLGREN (E. W.)—Stockholm. 3 vols. la. 8o. Stockholm 1897
 Teknisk tidskrift, 1893-97. 5 vols. fo. Stockholm 1893-97
 COLEMAN (T. E.)—Stable sanitation and construction. 8o. Lond. 1897
 COLYER (F.)—Public institutions, their engineering and other appliances. 8o. Lond. 1889
 Modern sanitary appliances for healthy residences. 8o. Lond. 1892
 Water-supply, drainage, &c. 8o. Lond. 1889
 SCAMELL (G.) & COLYER (F.)—Breweries and maltings. 8o. Lond. 1880
 CORPORATION OF THE CITY OF LONDON—BADDELEY (J. J.)—Guide to the Guildhall. 8o. Lond. 1898
 CROSBY LOCKWOOD & SON (Messrs.) the Publishers—
 ALLEN (J. P.)—Practical building construction. 2nd ed. la. 8o. Lond. 1897
 Builders' and contractors' price-book. sm. 8o. Lond. 1897

- CULSHAW (Rev. G. H.)—History of All Saints' Church, Hereford. pam. 80. Hereford 1892
- CUYPERS (J. Th. J.)—THOMPSON (M. A.)—De nieuwe Kathedrale Kerk: "St. Bavo" te Haarlem. pam. 80. Harlem 1898
- DOUGLAS (D.) the Publisher—MACGIBBON (D.) & ROSS (T.)—Ecclesiastical architecture of Scotland. Vols. ii. & iii. la. 80. Edinb. 1896-97
- DUMORTIER (V.) *Hon. Corr. Member*—CONGRÈS INTERNATIONAL DES ARCHITECTES—Compte-rendu de la quatrième session. la. 80. Brussels 1898
- EDITORS AND PROPRIETORS—
- | | | | |
|---|-------|-----------------------------|-------|
| American Architect. | '97-8 | Contract Journal. | '97-8 |
| Architect. | '97-8 | Engineering Record. | '97-8 |
| Architectural Record. | '97-8 | Estates Gazette. | '97-8 |
| Architectural Review. | '97-8 | Fireman. | '97-8 |
| Architecture (<i>Imperfect.</i>) | '97-8 | Furniture & Decoration. | '97-8 |
| Architecture & Building. | '97-8 | Gaceta de Obras Publicas. | '97-8 |
| Australasian Builder. (<i>Imperfect.</i>) | '97-8 | House Beautiful. | '97-8 |
| British Architect. | '97-8 | Indian & Eastern Engineer. | '97-8 |
| Builder. | '97-8 | Industries & Iron. | '97-8 |
| Builder's Journal. | '97-8 | Irish Builder. | '97-8 |
| Builder's Reporter. | '97-8 | Journal of Decorative Art. | '97-8 |
| Building & Engineering Journal. | '97-8 | Machinery Market. | '97-8 |
| Building News. | '97-8 | Neubauten und Concurrenzen. | '97-8 |
| California Architect. | '97-8 | Notes & Queries. | '97-8 |
| Canadian Architect & Reporter. | '97-8 | Plumber & Decorator. | '97-8 |
| Construction Moderne. | '97-8 | Studio. | '97-8 |
| | | Surveyor. | '97-8 |
- FLETCHER (B. F.) *Associat. Inst. Medallist*—Influence of material on architecture. fo. Lond. 1897
- FOLCKER (E. G.) *Hon. Corr. Member*—ANON.—The castle of Gripsholm. pam. 80. Stockholm 1897
- FOURDRINIER (D.) the Publisher—FLETCHER (B. F.) & FLETCHER (H. P.)—Carpentry and joinery. 80. Lond. 1897
- FARROW (F. R.)—Specifications. 80. Lond. 1898
- FOWLER (C.)—ALBERTI (L.)—Della architettura, etc.: trad. di C. Bartoli. fo. Bologna 1782
- ANDERSON (R.)—Lightning conductors. 80. Lond. 1885
- ARCHITECTURAL ASSOCIATION—Domed churches of Charente. 40. Lond. 1882
- CHRISTIAN (E.)—Skelton Church, Yorkshire. fo. Lond. 1846
- DENON (V.)—Voyage dans la Basse et la Haute Egypte. la. fo. ———
- DONALDSON (T. L.)—Doorways. 40. Lond. 1833
- DURAND (J. N. L.)—Leçons d'architecture. 40. Paris 1809
- Recueil et parallèle des édifices. la. fo. Paris ———
- FAIRBAIRN (W.)—Application of iron to building purposes. 2nd ed. la. 80. Lond. 1857-58
- FALKENER (E.)—Ephesus and the temple of Diana. 80. Lond. 1862
- GAUTHIER (M. P.)—Gènes. fo. Paris 1818
- HITTORFF (J.) & ZANTH (L.)—Architecture moderne de la Sicile. fo. Paris 1830
- HOPE (T.)—Architecture. 2 vols. 2nd ed. la. 80. Lond. 1835
- MILIZIA (F.)—Lives of architects. 80. Lond. 1826
- MOISY (M.) & DUVAL (A.)—Les fontaines de Paris. fo. Paris 1812
- PALLADIO (A.)—Architecture in four books; by G. Leoni. fo. Lond. 1715
- PERRONET (J. R.)—La construction des ponts de Neuilly, etc. la. fo. Paris 1782
- FOWLER (C.) *continued*—
- SANTI BARTOLI (P.) & BELLONI (G. P.)—Veterum Lucernæ Sepulcrales. fo. Lugduni Batavorum 1728
- Veterum sepulcra seu mausolea Romanorum. fo. ——— 1728
- SEROUX D'AGINCOURT (J. B. L. G.)—History of art. fo. Lond. 1847
- FOWLER (C. B.) *Fellow*—Cardiff castle: excavations on the site of the Blackfriars monastery. ob. fo. Cardiff 1898
- FRATE (O. DEL)—Guida della Faleria Etrusca. pam. 80. Rome 1898
- GEYMÜLLER (Baron H. von) *Hon. Corr. Member*—Handbuch der Architektur. Vol. vi. part 2. la. 80. Stuttgart 1898
- GRAHAM (A.) *F.S.A.*—NATIONAL PHOTOGRAPHIC RECORD ASSOCIATION—Rules and byelaws. pam. 40. Lond. 1897
- GRIFFIN & CO. (Messrs. C.) the Publishers—PEARCE (W. J.)—Painting & decorating. 80. Lond. 1898
- HACHETTE & CO., the Publishers—PERROT (G.) & CHAPIEZ (C.)—Histoire de l'art dans l'antiquité. Vol. vii., Nos. 346-89. sm. fo. Paris 1898
- HAYWOOD (C.) *Pugin Studentship* 1897—Account of tour in North Wilts and Somersetshire. MS. fo. ——— 1897
- HAZELL, WATSON & VINEY (Messrs.) the Publishers—MIDDLETON (G. A. T.)—Architectural photography. 80. Lond. 1898
- HEBB (J.) *Fellow*—METROPOLITAN BOARD OF WORKS—Extract from the report of Streets Committee with reference to the improvements of Holboru. pam. 80. Lond. 1864
- HIRTH (G.) the Publisher—Der Formenschatz. 1897, parts 7-12; 1898, parts 1-6. la. 40. Munich 1897-98
- Der Stil. Nos. 1-9. la. 40. Munich 1898
- INDIA OFFICE.—ARCHÆOLOGICAL SURVEY OF WESTERN INDIA.—BURGESS (J.)—On the Mohammedan Architecture of Bharooh. 80. Lond. 1896
- INGELOW (B.) *Fellow*—MURRAY (J. A. H.)—New English Dictionary. (Firsty-Frankish.) (Doom-Dziggetal.) la. 40. Lond. 1897
- KIDDER (F. E.)—Building construction and superintendence. la. 80. N. York 1896
- KLEINMANN & CO. (Messrs. H.) the Publishers—Bouwen sierkunst. Vol. i. Nos. 1-3. fo. Harlem 1898
- KOCH (A.) the Editor—Academy architecture. Vols. xii. & xiii. 40. Lond. 1897-98
- LEADER (J. T.)—Philological pastime of an Englishman in Tuscany. pam. 80. Florence 1898
- LINDEGREN (A.)—BÖTTIGER (J.) & LINDEGREN (A.)—Hedvig Eleonoras Drottningholm. fo. Stockholm 1897
- LONDON COUNTY COUNCIL—London technical education gazette. (*In progress.*) fo. Lond. 1897-98
- LONDON TOPOGRAPHICAL SOCIETY—Illustrated Record of London. 1st S. 40. Lond. 1898
- LUCAS (C.) *Hon. Corr. Member*.—CAISSE DE DÉFENSE MUTUELLE DES ARCHITECTES—Mémoire dandum judiciaire. pam. 80. Paris 1898
- Causerie par C. L. pam. 80. Paris 1898
- MACMILLAN & CO. (Messrs.) the Publishers—ATRINSON (T. D.)—Cambridge described and illustrated.
- LANCIANI (R.)—Ruins and excavations of ancient Rome. 80. Lond. 1897
- MANNING (W. H.)—Landscape phase of the Californian University plan. pam. 80. Boston 1898
- MARSHALL (H. C.)—Accounts for architects. pam. 40. Lond. 1897
- MARSY (Comte DE)—SOCIÉTÉ FRANÇAISE D'ARCHÉOLOGIE POUR LA CONSERVATION DES MONUMENTS HISTORIQUES. Bulletin monumental. 7th S. Vol. i. pam. 80. Paris 1896

MATTHEWS (E.) the Publisher—ANON.—The Canon. 8o. Lond. 1897
 MIDDLETON (G. A. T.) *Associate*—Architectural photography. 8o. Lond. 1898
 NANGLE (J.)—Notes on fire-resisting buildings. pam. 8o. Sydney 1897
 NECKELMANN (F. S.) *Hon. Corr. Member*—Landes-Gewerbemuseum. fo. Berlin 1898
 NEW SOUTH WALES; AGENT-GENERAL FOR—Report of the Department of Public Works, 1897. fo. Sydney 1898
 NEWNHAM & CO. (Messrs.) the Publishers—Report of Committee on national wheat stores. fo. Lond. 1898
 PATERSON (A. N.) *Associate*, M. A.—FLAGG (E.) New York tenement house evil and its cure. pam. ———
 WARING (G. E.)—Purification of sewage by aeration. pam. 8o. Newport 1895
 Sewage disposal at Wayne, Pa. pam. 8o. New York 1892
 PENROSE (F. C.) *Fellow*—The Orientation of certain Greek temples. pam. 4o. Lond. 1897
 POORE (G. V.) M.D., F.R.C.P.—The dwelling house. 8o. Lond. 1897
 PRENDERGAST (Col. L.) *Hon. Associate*—Il Castello di Vincigliata; a review. pam. sm. 8o. Florence 1897
 RASCHDORFF (J. C.) *Hon. Corr. Member*—Baukunst der Renaissance: Entwürfe von Studirenden. fo. Berlin 1882
 READE (T. M.) *Fellow*—Geological observations in Ayrshire. pam. 8o. L'pool 1897
 The Phyllades of the Ardennes. pam. 8o. L'pool 1898
 High level marine drift at Colwyn Bay. pam. 8o. ——— 1898
 Post-glacial beds exposed in cutting of Bruges Canal. pam. 8o. ——— 1868
 RIVINGTON, PERCIVAL & CO. (Messrs.) the Publishers—COBDEN-SANDERSON (T. J.) and others: Art and Life, and the building and decoration of cities. 8o. Lond. 1897
 SAINTENOY (P.)—Notes de voyage—Kent, &c. sm. 8o. Brussels 1894
 SAMPSON LOW, MARSTON & Co. (Messrs.) the Publishers—ROBERTSON (F. E.)—Treatise on organ building. Text and plates. 8o. & 4o. Lond. 1897
 SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE, the Publishers—SAYCE (A. H.)—The "Higher Criticism" and the verdict of the monuments. 5th ed. 8o. Lond. 1895
 SPON (Messrs. E. F. & N.) the Publishers—Price-book. sm. 8o. Lond. 1893
 HURST (J. T.)—Handbook. ob. mo. Lond. 1898
 MACFY (F. W.) Specifications in detail. la. 8o. Lond. 1898
 ST. BRIDE'S PRESS, the Publishers—PERKS (S.)—Party structures. 12mo. Lond. 1897
 STANGER (W. H.) & BLOUNT (B.)—Adulteration of Portland cement. 8o. Lond. 1898
 STREET (W. C.) *Fellow*—JOLY (V. C.)—Traité pratique du chauffage. 8o. Paris 1873
 STÜBBEN (J.) *Hon. Corr. M.*—Die Stadterweiterung von Brügge. pam. fo. Berlin 1898
 ——— & others—Neue Werft- und Hafenanlagen zu Köln. 4o. Cologne 1898
 Zeitschrift für Architektur und Ingenieurwesen. Nos. 37-42. fo. Hanover 1897
 SUTCLIFFE (G. L.) *Associate*, & others—Modern house construction. 4o. Lond. 1898
 TRANSACTIONS, REPORTS, AND PROCEEDINGS OF SOCIETIES, &c.
 AMSTERDAM—Architectura et Amicitia.—Architectura. fo. Amst. 1897-98

TRANSACTIONS, SOCIETIES, &c. (*continued*)—
 AMSTERDAM (*continued*)—Architectura et Amicitia.—De Architect. fo. Amst. 1897-98
 Maatschappij tot Bevordering der Bouwkunst.—Afbeeldingen van oude bestaende gebouwen. No. 38. la. fo. The Hague 1897
 ————Bouwkundig Weekblad. fo. Amst. 1897-98
 Bouwkundig Tijdschrift. Vol. xv. nos. 2-4; vol. xvi. no. 1. fo. Amst. 1896-97
 Bouwwerken uitgevoerd door leden der Maatschappij Bijeenverzameld, etc. fo. Harlem 1892
 BERLIN—Architekten-Verein.—Zeitschrift für Bauwesen. fo. Berlin 1897-98
 BOSTON, U.S.A.—Massachusetts Institute of Technology. Technology Quarterly. Vol. x. nos. 3 & 4; vol. xi. nos. 1 & 2. Annual Catalogue. 8o. Boston 1898
 Annual Report. 8o. Boston 1898
 BRUSSELS—Académie Royale de Belgique. Bulletins, 3rd S., vols. 30-33. 8o. Brussels 1895-97
 Annuaire 1896, 1897. sm. 8o. Brussels 1896-97
 Règlements 1896. 8o. Brussels 1896
 Congrès International des Architectes: Comptes-rendu. la. 8o. Brussels 1898
 Société d'Archéologie de Bruxelles.—Annuaire. pam. sm. 8o. Brussels 1898
 ————Annales. Vol. 12. parts 3 & 4. la. 8o. Brussels 1898
 Société Centrale d'Architecture de Belgique.—L'Émulation. la. fo. Brussels 1897-98
 Liste des membres 1897. 8o. Brussels 1898
 CHATHAM—Royal Engineers' Institute.—Occasional papers. Vol. xxiii. 8o. Chatham 1897
 CHRISTIANIA—Norsk Ingeniør- & Arkitekt-Forening.—Norsk Teknisk Tidsskrift. Vol. xiv. nos. 1-6; vol. xv. nos. 1-4. 4o. Christiania 1896-97
 COLCHESTER—Essex Archæological Society.—Transactions. N.S. vol. vi. part 4. 8o. Colchester 1897
 COPENHAGEN—Kongelige Kunstakademi.—Aarsberetning. pam. 8o. Copenhagen 1898
 DUBLIN—Institution of Civil Engineers of Ireland.—Transactions. Vol. xxvi. 8o. Dublin 1897
 Royal Dublin Society.—Scientific Trans. vol. v. No. 13; vol. vi. Nos. 2-13. 4o. Dublin 1896-97
 Scientific Proceedings, N.S., vol. viii. part 5. 8o. Dublin 1897
 Royal Society of Antiquaries of Ireland.—Journal. 5th S., vol. vii. Nos. 3 & 4; vol. viii. Nos. 1 & 2. la. 8o. Dublin 1897-98
 EDINBURGH—Museum of Science & Art.—Report by the Director. pam. 8o. Edinb. 1896
 GLASGOW—Philosophical Society of Glasgow—Proceedings, vol. xxviii. 8o. Glasgow 1880, &c.
 Architectural Association.—Ann. Report 1896-97. pam. 8o. Glasgow 1897
 INVERNESS—Association of Surveyors of H.M. Service.—Occ. Papers, 4th S. 8o. Inverness 1898
 JOHANNESBURG, S.A.R.—South African Association of Engineers and Architects.—Proceedings. Vol. iii. 8o. Johannesburg 1897
 LEICESTER—Leicester & Leicestershire Society of Architects.—Report. pam. 8o. Leicester 1898
 LEWES—Sussex Archæological Society.—Collections. Vol. xli. Subject-index, vols. xxvi.-xl. 8o. Lewes 1898
 LILLE—Société Régionale des Architectes du Nord de la France.—L'architecture et la construction. sm. fo. Lille 1897-98

TRANSACTIONS, SOCIETIES, &c. (*continued*)—

- LINCOLN—Associated Architectural Societies.—Reports & papers. Vol. xxiii. part 2. 8o. Lincoln 1898
- LIVERPOOL—Architectural Society.—Proceedings 50th Session. Ann. Meeting. 8o. L'pool 1898
- LONDON—Architectural Association.—A. A. Notes. 4o. Lond. 1897-98
 ----- Brown Book. sm. 8o. Lond. 1898
 ----- Sketch Book. la. to. Lond. 1897-98
- Institution of Civil Engineers.—List of Members. 8o. Lond. 1897
 ----- Minutes of Proceedings. Vols. cxxx.-cxxxii. 8o. Lond. 1897
 ----- Brief Subject index. Vols. cxix.-cxxx. 8o. Lond. 1897
- Institution of Mechanical Engineers.—Proceedings. 8o. Lond. 1897
- Iron & Steel Institute.—Journal. Vol. lii.—Name-index. Vols. 1-50. 8o. Lond. 1898
- London and Middlesex Archaeological Society.—Trans. Vol. i. part ii. 8o. Lond. 1898
- Palestine Exploration Fund.—Quarterly Statement. Oct. '97 to Oct. '98. pam. 8o. Lond. 1897-98
- Royal Academy; Laws relating to the schools, library, etc. pam. 8o. Lond. 1891
- Royal Archaeological Institute.—Journal. 8o. Lond. 1897-98
- Royal Geographical Society.—Geographical Journal. la. 8o. Lond. 1897-98
- Royal Institution.—List of members. pam. 8o. Lond. 1898
 ----- Proceedings. 8o. Lond. 1898
- Royal Society.—Proceedings. 8o. Lond. 1897-98
 ----- Year books 1896-98.
- Sanitary Institute.—Journal. Vol. xviii. parts 1 & 2. 8o. Lond. 1897-98
 ----- Annual Report of the Council for 1895. pam. 8o. Lond. 1896
- Society of Antiquaries.—Archæologia. Vol. lv. part 2. la. 4o. Lond. 1897
 ----- Proceedings. 8o. Lond. 1897
 ----- Address by Sir A. W. Franks. pam. 8o. Lond. 1897.
- Society of Architects.—Journal. 4o. Lond. 1897-98
- Society of Arts.—Journal. la. 8o. Lond. 1897-98
- Society of Biblical Archæology.—Proceedings. 8o. Lond. 1897-98
- Society of Engineers.—Transactions; general index, 1857-97. la. 8o. Lond. 1897
- Society of Medical Officers of Health.—Public Health. 4o. Lond. 1897-98
- Society for the Promotion of Hellenic Studies.—Journal. Vol. xvii. nos. 1 & 2.; vol. xviii. No. 1. sm. fo. Lond. 1897
 ----- Index to vols. ix.-xvi. sm. fo. Lond. 1898
- Surrey Archæological Society.—Collections. Vol. xiii. parts 1 & 2. 8o. Lond. 1896
- Surveyors' Institution.—Transactions. 8o. Lond. 1897-98
- MADRID—Sociedad Central de Arquitectos—Lista General de todos los Arquitectos Españoles. pam. mo. Madrid 1898
- MANCHESTER—Literary & Philosophical Society.—Memoirs & proceedings. Vol. xlii. parts 1-4. 8o. Manch. 1898

TRANSACTIONS, SOCIETIES, &c. (*continued*)—

- MARSEILLES—Association Provinciale des Architectes Français.—Bulletin. fo. Marseilles 1897-98
- MONTREAL—Canadian Society of Civil Engineers. Vol. xi. parts 1 & 2. 8o. Montreal 1897
- NEWCASTLE-ON-TYNE—North of England Institute of Mining & Mechanical Engineers.—Transactions. la. 8o. Newc.-on-Tyne 1897-98
 ----- Annual report. 8o. Newc.-on-Tyne 1896
- Northern Architectural Association.—President's address. pam. 8o. Newc.-on-Tyne 1898
- NEW YORK—Columbia University.—School of Mines. pam. 8o. N. York 1897
- School of Architecture. pam. 8o. N. York 1897
- Study of Architectural Drawing. pam. 8o. N. York 1896
- Columbia University. pam. mo. N. York 1897
- American Institute of Architects.—Proceedings of 1st Annual Convention. 4o. Providence 1897
- National Sculpture Society.—President's report. pam. 8o. N. York 1898
- PALERMO—Collegio degli Ingegneri e degli Architetti, Atti 1897 Jan.-July, Jan.-April 1898. la. 8o. Palermo 1897-98
- PARIS—Ecole Spéciale d'Architecture, Séance d'ouverture 1897-98. pam. 8o. Paris 1897
- Société Centrale des Architectes.—Annuaire. pam. 8o. Paris 1897
 ----- L'Architecture. fo. Paris 1897-98
- PHILADELPHIA—Pennsylvania Academy of the Fine Arts. T-Square Club: Catalogue of Exhibition. 4o. Phil. 1898
- PLYMOUTH—Devonshire Association for the Advancement of Science, Art and Literature: President's Address. pam. 8o. [Plymouth] 1897
- ROME—British and American Archæological Society.—Journal. Vol. ii. no. 7. 4o. Rome 1897
- Commissione Archeologica Comunale.—Bullettino. S. 4. Vol. xxiv. nos. 1-4; vol. xxv. Nos. 1 & 2. la. 8o. Rome 1896-97
- SAIN'T PETERSBURG—Society of Architects—Zodchi. 4o. St. Petersburg 1897
- SHEFFIELD—Society of Architects and Surveyors.—Report and Statement of Accounts. pam. 8o. Sheffield 1898
- SYDNEY, N.S.W.—Engineering Association of New South Wales. Minutes of Proceedings. Vol. ix. 8o. Sydney 1894
- VIENNA—Österreichischer Ingenieur- u. Architekten-Verein.—Zeitschrift. la. 4o. Vienna 1897-98
- YORKSHIRE ARCHÆOLOGICAL SOCIETY.—Journal. Vol. xiv. part 4. la. 8o. Lond. 1898
 ----- Annual report. pam. 8o. — 1897
- WAGNER (O.) *Hon. Corr. M.*—Einige Skizzen, Projekte und ausgef. Bauwerke. fo. Vienna 1897
- WARREN & SON (Messrs.) the Publishers—STEPHENS (W. R. W.) & MADGE (F. T.)—Documents relating to Winechester Cathedral in the 17th Century. 8o. Lond. 1897
- WILEY (J.) & SONS (Messrs.) the Publishers—MERRILL (G. P.)—Stones for building and decoration. 8o. N. York 1897
- WILSON (F. P.) the Publisher—RICHARDS (H. C.) & SOPER (J. P. H.)—Law and practice of compensation. 8o. Lond. [1898]
- TOTAL: VOLUMES (*exclusive of Periodicals, Reports and Transactions of Societies, and parts of works issued in a serial form now in progress*) 105; PAMPHLETS, 38.

Purchased out of the Architectural Union Company's Donation to the Library Fund.

- DEHLI (A.)—Norman monuments of Palermo and environs. fo. Boston [1892]
 FRAZER (J. G.)—Pausanias's description of Greece. 6 vols. So. Lond. 1898
 PAOLETTI (P.)—L'architettura e la scultura del Rinascimento in Venezia, 3 vols. la. fo. Venezia, 1893
 RUSKIN (J.)—Examples of the architecture of Venice. la. fo. Lond. 1887
 SCHMIDT (O.) & DEININGER (J. W.)—Kunstschätze aus Tirol. fo. Vienna —
 STRACK (H.)—Baudenkmäler Roms des XV.—XIX. Jahrhunderts. fo. Berlin 1891

TOTAL: Volumes, 13.

PURCHASES.

Books, Pamphlets, &c.

- ADLER (F.)—Mittelalterliche Backsteinbauwerke, vol. ii., pt. xii. fo.
 AHERON (J.)—A general treatise of architecture. fo. Dublin 1759
 ALLGEMEINE BAUZEITUNG (*in progress*). fo. Vienna 1897–98
 ALLSOP (R. O.)—Turkish bath. So. Lond. 1890
 ATHENÆUM (THE) (*in progress*). 4o. Lond. 1896–97
 BEDFORD (W. K. R.)—Blazon of Episcopacy. 4o. Lond. 1897
 BURGEOYNE (F. J.)—Library construction, architecture, &c. So. Lond. 1897
 BURN (R. S.)—Dictionary of terms. So. Lond. —
 CHAMPEAUX (A. DE)—Le meuble. 2 vols. So. Paris [1885]
 D'ESPOUY (H.)—Fragments d'architecture du moyen âge et de la renaissance. fo. Paris —
 EDWARDS (P. J.)—History of London street improvements. fo. Lond. 1898
 FRANKS (A. W.)—Book of ornamental glazing quarries. So. Lond. 1849
 Gazette des Beaux-Arts (*in progress*). la. fo. Paris 1898
 GROSVENOR (E. A.)—Constantinople. 2 vols. So. Lond. 1895
 GUÉRINET (A.)—Le musée des arts décoratifs. fo. Paris —
 Le mobilier national depuis Louis XIV jusqu'à l'Empire. 2 vols. fo. Paris —
 Le musée de sculpture comparée. fo. Paris [1898]
 HATTON (R. G.)—Figure drawing and composition. 2nd ed. So. Lond. 1898
 LILLEY (A. E. V.) & MIDGLEY (W.)—Studies in plant form. So. Lond. 1898
 LONGFELLOW (W. P. P.)—Cyclopædia of works of architecture in Italy, Greece, and the Levant. 4o. N. York 1895
 MALDEN (W. J.)—Farm buildings. So. Lond. 1896
 MONTANER (L. D.)—Arquitectura moderna de Barcelona, parts 1 & 3. fo. Barcelona 1897
 MORGAN (F.)—Romano-British mosaic pavements. la. So. Lond. 1886
 NOTES & QUERIES—General Index. 4th Series. So. Lond. 1874
 ————— 7th Series. 4to. Lond. 1892
 PARKER (J.)—Glossary of terms used in heraldry. So. Oxford 1894
 PENNELL (J.)—Pen drawing and pen draughtsmen. sm. fo. Lond. 1894

- POORE (G. V.)—Rural hygiene. 2nd ed. So. Lond. 1894
 RICKMAN (T.)—Gothic architecture. 1st ed. So. Lond. [1817]
 ROWE (E.)—French wood carvings. fo. Lond. 1896–97
 SCHMIDT (O.) & FABIANI (M.)—Vicenza. fo. Vienna 1898
 SCOTT (G. G.)—Essay on the history of English church architecture. la. 4o. Lond. 1881
 STURGIS (R.)—European architecture. So. N. York 1896
 SYMONDS (J. A.)—Renaissance in Italy: The Fine Arts. So. Lond. 1897
 TIJOU (J.)—Drawings of ironwork (*Reprint*). fo. Lond. 1896
 WESTLAKE (N. H. J.)—History of design in painted glass. 4 vols. la. 4o. Lond. 1881
 WHARTON (E.) & CODMAN (O.)—Decoration of houses. 4to. Lond. 1898
 WINSTON (C.)—Memoirs illustrative of the art of glass-painting. So. Lond. 1865
 WOODWARD (J.)—Treatise on ecclesiastical heraldry. So. Lond. 1894

TOTAL: Volumes (*exclusive of Periodicals and Parts of Works issued in a serial form now in progress*), 37.

Parliamentary Papers.

- ARCHITECTS REGISTRATION BILL, 1898 [137]. fo. Lond. 1898
 FACTORY & WORKSHOP—Act 1895. fo. Lond. 1898
 GOVERNMENT OFFICES.—Appropriation of sites. Report, &c. (3351). fo. Lond. 1897
 METROPOLITAN POOR LAW SCHOOLS—SHAW (W. N.) Report on warming and ventilation. fo. Lond. 1897
 STEPHENSON (S.)—Ophthalmic state of Poor Law children. fo. Lond. 1897
 PUBLIC RECORDS OFFICE—DEPUTY KEEPER: 59th Annual Report (C. 8906). pam. So. Lond. 1898
 SCIENCE & ART DEPT., S. Kensington—Calendar, history, and regulations. (C. 8636.) la. So. Lond. 1897
 Plans of the Schools of Science and Art at Gloucester and Watford. pam. So. Lond. 1897
 45th report (C. 8791). So. Lond. 1898
 Supplement (C. 8792). So. Lond. 1888
 Distribution of grants—Appendix (C. 8708). fo. Lond. 1897
 Museums—Second report from Select Committee (341). fo. Lond. 1897
 TECHNICAL EDUCATION—Return (119). fo. Lond. 1898

TOTAL: 13.

THE LOAN LIBRARY.

ADDITIONS: 12TH OCTOBER 1897—6TH OCTOBER 1898.

Donations.

- FLETCHER (B. F.) *Associate*—Influence of material on architecture. fo. Lond. 1897
 FOLCKER (E. G.) *Hon. Corr. M.*—ANON.—Castle of Gripsholm. So. Stockholm 1897
 LONGMANS, GREEN & CO. (Messrs.) the Publishers—POORE (G. V.)—The dwelling house. So. Lond. 1897
 WARE (W. R.)—Instruction in architectural drawing at Columbia University. pam. So. N. York 1896
 WONNACOTT (W. M.) *Associate*—History and development of vaulting in England. 2 copies. fo. Lond. 1891

TOTAL: Volumes, 4; Pamphlets, 2.

Purchases.

ALLSOP (R. O.)—The Turkish bath.	80. Lond. 1890	MILLAR (W.)—Plastering, plain and decorative.	la. 80. Lond. 1897
——— Public baths and washhouses.	80. Lond. 1894	NORMAND (C.)—Nouveau parallèle des ordres	fo. Paris ———
DAY (L. F.)—Nature in ornament.	80. Lond. 1896	d'architecture.	
——— Windows.	80. Lond. 1897	PARKES (E. A.)—Manual of practical hygiene.	8th ed. 80. Lond. 1891
FREEMAN (E. A.)—Sketches of travel in Normandy	80. Lond. 1897	POORE (G. V.)—Rural hygiene.	2nd ed. 80. Lond. 1894
and Maine.		PURCHASE (W. R.)—Practical masonry.	80. Lond. 1890
GALTON (Sir D.)—Healthy dwellings.	2nd ed. 80. Lond. 1896	REID (G.)—Practical sanitation.	4th ed. 80. Lond. 1897
GARDNER (J. S.)—Ironwork.	2 vols. 80. Lond. 1893-96	STATHAM (H. H.) <i>Fellow</i> —Modern architecture.	80. Lond. 1897
HATTON (R. G.)—Figure drawing and composition.	2nd ed. 80. Lond. 1898	SYMONDS (J. A.)—Renaissance in Italy: The Fine Arts.	80. Lond. 1897
MACEY (F. W.)—Specifications in detail.	la. 80. Lond. 1898	WARD (J.)—Principles of ornament.	80. Lond. 1896

TOTAL: Volumes, 20.



107

JOURNAL

OF

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

SESSION 1897-98.

THE OPENING ADDRESS. Delivered by the President, Professor AITCHISON, A.R.A.,
at the First General Meeting, Monday, 1st November. 1897.

BROTHER ARCHITECTS, LADIES AND GENTLEMEN,—

WHEN I had the honour of addressing you last year, I chose a subject with which I felt sure you would all agree, as it was the recounting of some of the architectural triumphs of the past, and the pointing out of some of the services architecture has done for those nations where it flourished. These services include the usefulness of the monuments at the time they were built, the adorning of the country, and the keeping of a record of that nation's greatness, of its peculiar characteristics, and of its position in civilisation. I thought that the first utterances of a new President should be as free as possible from controversial matter; but, after a year of office, the President becomes conversant with the wants and possibilities of the Society. I now propose that we should consider how the Institute can, with a reasonable hope of success, improve the art it was specially created to cherish and advance.

The unravelling of the great problems of humanity and the extraction of the lessons they teach are beset with difficulties, and some of these difficulties are apparently insuperable on account of our ignorance of the factors. Sometimes the glimmerings of light that the most perspicacious can see turn out to be not those of the dawn, but of mere will-o'-the-wisps, as in the case of Machiavelli's works. Machiavelli saw exactly what men did, and was not led astray by what they ought to do; and in the problems he set, he saw the solutions wanted; but, misled by the ruthlessness of Nature, he overlooked the supreme importance of how the end was attained; so that the old adage "Let justice be done though everything perish" is a more useful maxim for mankind to follow than to attain its object by wickedness.

We cannot suppose that among the two parties who alternately govern us, and help to mould our minds, to direct our aims, and to modify our desires, there are not on both sides upright and devoted men, whose views are as the poles asunder; and it is only by long experience that the value of the measures carried can be judged of.

At the time of the discussion of such measures the partisans of the scheme are as sure of its excellent results as their opponents are of its pernicious effects; and as the clashing of the opposing views causes heated, angry, and acrimonious debates, so I fear that suggestions of improvement may have the same effect amongst us.

In considering architecture, as in considering every other transcendental pursuit, we must take the existence of two things into account—namely, the set of the public mind and the occurrence of genius; and though we most urgently want genius in every branch of skill and knowledge, we have not the faintest notion of the causes of its production. The utmost we can do is to offer it ample opportunities of learning what it wants to learn, and to bestow our thanks and admiration upon its possessor and his works.

The other cause of excellence is the set of the public mind in a certain direction; but why it sets in that direction is at present unfathomable, though we may roughly indicate that its set is always towards those pursuits that promise power, wealth, and delight. We may, however, say with certainty that in this age it does not set in the direction of architecture. If the genius of all the great architects that ever lived were combined in one, and that one had the chance of showing it, the architecture that he would produce would have little or no effect on the public, for the public now gets more, in that direction, than it either desires or deserves almost for nothing, and is perfectly ungrateful. The set of the public mind is so important a factor that we can hardly overestimate its importance. Men whose turn of mind is in the line of that of the public generally decry all attempts at systematic teaching, and proclaim that all schools and universities are mere shoddy-making factories that turn out a colourable imitation from waste.

When in the past there has been a sudden demand by a city or a nation for some kind of knowledge or skill of which there was a deficient supply, the head of that nation or city had no better remedy to offer than the creation of schools, academies, and universities, where the requisite knowledge and skill should be taught or tested, and where it was hoped they might be learned. This was the method adopted by Constantine the Great when he chose Byzantium for the capital of the Roman Empire, and caused to be built there copies of the Senators' houses in Rome, and of their villas in other parts of Italy. We know that in his time the art of sculpture had so declined that the statues and bas-reliefs had to be taken from Trajan's Forum to form the adornments of his own triumphal arch, and that the sense of propriety had so decayed that there was no outcry against such folly; and though there was then a large influx of architects and skilled workmen into Byzantium, the work was so hastily and so unskillfully done that eighty domes are said to have fallen during his lifetime, and many buildings had to be pulled down in the time of his successors. So apparent was the want of competent architects and skilled workmen that he offered a premium to those who would have their sons brought up as architects, and to skilled workmen who would bring up their sons to their own trades. With this object he started schools in Italy and North Africa. May we not say that Santa Sophia, one of the masterpieces of the world, was the outcome of this teaching?

After the irruption of the barbarians in the West there was a great want of both architects and skilled workmen, and the ecclesiastical authorities endeavoured to supply that want by founding schools in their abbeys and monasteries. Again, at the time of the Saracen irruption there was a dearth of architects and skilled workmen; for these energetic savages came at once from poverty into fabulous wealth, and wanted mosques for their new religion, and palaces for their Kalifs, Sultans, and great men; and this want was tried to be met by schools and universities connected with the mosques: and there was again the same want in the days of Charlemagne, and to meet these wants the same methods were adopted. I fancy that all the systems but one offered teaching to all who came, and, I presume, who showed some aptitude; but Constantine, who was certainly an able man, only offered his premiums for learning architecture to young men of eighteen years of age who had received a liberal education—whatever that meant then, or may mean now.

Looking at the enormous extent of the knowledge required by an architect, and the

almost antagonistic powers of mind required, would it not be better to confine architectural teaching to architecture?

As architecture is pre-eminently a constructive art, construction should certainly be its foundation—the very last thing that would be thought of now, for the æsthetic architect would leave that to the builder and the engineer. It seems ludicrous not to insist on an architect who is to build having such knowledge of statics as to know the proper method of resisting the force of wind, of water, and of earth, and the thrusts of arches, vaults, and domes. Statics would give us, too, important lessons in æsthetics, for it gives us the proper proportions of each part of a building when we know the height, the weight to be carried, and the strength of the material to be used. When these particulars are known and provided for, we may roughly say that we have only to accentuate the important part by mouldings, or have them adorned by the sculptor to make it into architecture.

The architectural student wants also to know how to plan conveniently and beautifully, to make his building wholesome, and finally to give it the shapes and ornaments that proclaim its destination, and are appropriate to that destination, and “all the rest is leather and prunello.” The literary, goldsmithing, painting, and modelling architects of the Renaissance left us one pernicious legacy, for their aim was to imitate Roman architecture, and from their teaching the Gothic revivalists have wanted to imitate Gothic, and the Greek revivalists have wanted to imitate Greek, though the Italian Renaissance architects gave grace and artistic perfection to their Roman models.

This procedure of imitating the construction and æsthetic expression of a Pagan people who flourished 1,200 years before the Renaissance seems to me to be a mistaken one, for architecture is a progressive art, not only in the scientific part of construction, in the increase of material wants and the introduction of new materials, but also in the æsthetic part; for no two successive generations like exactly the same forms, nor are the emotions that should be raised exactly alike. You certainly should not ignore the advances made in the architecture of the immediate past. Between the Pagans of Ancient Rome and the Renaissance there had been Christian Roman architecture, the Byzantine, when the dome took so prominent a part; there had been Romanesque and Saracen architecture; there had been Gothic, which abandoned the opposing of inert mass to thrusts, and used counterpoise, and showed a constructive skill never equalled till this age of iron; Gothic, too, had tried to express in its churches its ideals of Knighthood and of Roman Catholic Christianity. It was certainly not wise to ignore former advances in construction, and it was hardly possible to go back to pure Roman Paganism, however hard the Renaissance men tried. If we want to advance we must follow the example of the mediævals; we must study deeply, observe accurately, reason logically, and be never deterred by failure, and endeavour to express the leading character of our time, which, I fancy, is the getting an insight into Nature's laws and applying them to our own wants. We must, too, endeavour to discover what in the heavens above, the earth beneath, or the waters under the earth we and our employers love to see embodied in our works, and how that embodiment should be expressed.

In England we have artificially divided the constant increase of skill and knowledge, and the fluctuation in taste of the Gothic architects, into styles which we call “Early English,” “Geometric,” “Decorated,” and “Perpendicular.” I want you to observe that these so-called styles were gradual developments. The first Gothic architects developed the mouldings of the Romanesque; the grouping of two or more lancet windows under an arch suggested a hole in the spandrel afterwards cusped with the new Saracen feature, and so on; and as skill increased and taste decayed the tracery of the enormous perpendicular window grew mechanical and ugly. It is only by increase of æsthetical and constructive knowledge and the development

of necessary features that any characteristic features of our own can be stamped on our architecture.

When a race has had enough wit to invent mouldings on which the sunshine of its own country played the harmonies that it loved, how can these mouldings be transplanted into another country, with a different atmosphere and a different sunshine, and produce the same effect? And if they could, are these the precise effects we want to produce now?

Any one who can appreciate the beauty of mouldings, and has seen Greek architecture at Athens, cannot fail to observe how absolutely ineffective these mouldings are in the misty atmosphere of London, particularly when there is no sunshine. The only other architects who understood the art of moulding were those of the Middle Ages, after what we call Gothic was developed: their mouldings are perfectly effective in misty weather, but are too coarse and hard when there is full sunshine, while they are at all times wanting in grace. Yet I may say that the art of moulding is as much neglected now as the science of statics.

No one can give genius, nor does it seem in one man's power to turn the desires of mankind in the direction he desires. You can, however, try to drive away from the profession, by a thorough examination, all those who do not love architecture better than anything else; and though this love does not always ensure the possession of genius, it mostly does. Having got the proper sort of men, you can see that they have that necessary knowledge and skill that would enable them to use the divine spark properly if they have it.

Ben Jonson repeats Horace's adage that "the poet is born and not made"; but he adds, for all that, a poet wants a good deal of making—and it is the same in all the fine arts. In painting and in sculpture the student with a passion for either does not come fully armed, like Athené from Zeus' brain; anatomy has to be laboriously acquired, as well as the power of drawing or modelling the perfect human form; the art of composition has to be learned, as well as what sculpture and painting can properly represent. Architects are not born with a knowledge of statics, nor of the strength of materials, nor of the art of planning, nor of how to express the emotions that each particular structure should evoke; though we now see ornaments from the palaces of the Cæsars, or from the boudoirs of Renaissance beauties, lavished on tailors' or oyster shops and on banks and insurance offices. I have seen the ghastly ornaments of Roman temples, bullocks' skulls, on a bank, but I looked on these as the symbol of the architect.

The Institute is a university—*i.e.* it does not teach but it examines, and informs students what they should know and where some of this information can be got. Amongst some the idea of teaching is almost a mania, and I admit that some things must be taught: the pronunciation of foreign tongues, the use of a foil or an oar; but, as far as I know, the art of teaching is mainly non-existent. My experience of school teaching is this: I was put under a man who had mastered the subject I had to learn, and who was armed with a stick. He told me to learn a piece out of a book, and he allowed me what he thought was enough time to learn it in. If I did not know it, I was soundly beaten, and without doubt this is a great stimulus to exertion. Lucian, of the Dialogues, was supposed to have a taste for sculpture, but his master thought he had not striven enough, and as he had broken a piece of marble, too, gave him so severe a beating that he abandoned the art.

Unfortunately no real text-book has been written on architecture, though all but how to produce the emotions proper to any structure may be picked up from various books. Those architects who can produce the proper emotions have something else to do than to explain the means they employ, even if they could explain them. And the knowledge, too, of the means used to produce emotions will not give the power to produce them, or else all the real critics of æsthetics would be poets, painters, sculptors, architects, or musical composers as well. You

cannot suppose that those artists who have excited emotions have not tried to learn all they could from their predecessors. In the case of the poets at least we know that they have studied the works of their predecessors, and translated them when in foreign tongues, and paraphrased them when in their own; and though Horace's maxim is excellent, that "if you want to make your hearers cry, you must cry yourself," yet even when he did cry, he had to learn the precise mechanism for causing his hearers to weep. Architects must study and paraphrase those buildings and those members of buildings that have produced the proper emotions in them. An architect must also recollect that those who are to be moved by his building are not Greeks, Romans, mediævals, nor Italians of bygone ages, but the people of his own time. Still, if you can touch the master chords of humanity, they are not so very differently attuned now from what they were in the earliest times, or else we should not laugh at the wit of Aristophanes, of Rabelais, of Swift, or of Molière; nor cry over the pathos of Homer, Æschylus, Sophocles, Dante, or Shakespeare.

We can at least see that an architectural student has the knowledge that he cannot properly do without, and we shall find this alone will have a very good effect on the profession; but it is almost impossible to divest men's minds of cant. The student is asked to know all sorts of things, some of which are interesting, some pleasant, and some dull, that have no bearing on architecture. It is interesting enough to know that hazel-nuts were shipped at Barcelona and currants at Patras, but we use neither dry nuts nor currants in architecture; it is pleasant enough to understand Greek, Latin, Hebrew, and Sanscrit; French, Italian, German, Spanish, Portuguese, Russian, and Arabic; but they are no more architectural arts than the broad-sword exercise or being able to shoot flying. It is interesting enough to know who built the Parthenon, or the Pantheon, or King's Cross, but it is no more architecture than playing on the fiddle or dancing the polka.

We believe that Nature perfectly adapts all her living works to the actions they have to perform without waste of material; and while some are exquisitely beautiful, some majestic, and some comic, others are commonplace, and some are repulsive, hideous, or frightful; but they all have character. It is only by studying Nature's works and former buildings, and deducing laws from them, that we can hope to cultivate that sense which makes us like one form and detest another; so I think that such a study is necessary for those who wish to become architects; for though a knowledge of statics will make our buildings safe and prevent a want of due ratio between the parts, we must trust to a cultivated eye, till the laws are discovered, to make them beautiful, majestic, or sublime. We should, I think, make our students first design in old-world materials, wood, brick, stone, and marble, so that their designs can be compared with the existing successful monuments; but we have new materials which have to be brought within the pale of architecture.

In my opinion we cannot do better than make students design in cast iron when they have succeeded in designing in the old-world materials. It is too expensive a material to disregard its statical conditions. It is difficult to arrange a column or a stanchion so that its capital may securely carry a heavy superstructure with a large base. It is difficult to make the base of this column or stanchion wide enough to safely transmit the weight it bears on to a foundation of much softer material; there are difficulties in the design of mouldings and floral ornament that can be cast; and there are absolutely no examples to imitate, so that the knowledge, care, skill, and invention of the student are called into play. We cannot believe that the ingenious Mediæval architects would have foregone the use of such valuable and powerful materials as wrought iron, cast iron, and steel on account of Mr. Ruskin's objection that they were not mentioned as building materials in the Bible.

It may be truly said that nothing can be effected in a structural art like architec-

ture by talking; but when a man is lost in a wood, and you can direct him to the road out of it, you have done him most effectual service. Architecture has been in a wood since the fifteenth century, and it can never progress until it gets out of this wood. The intelligent architectural student wants to know the mark he is to aim at, and how he may hit it; and I am afraid the general opinion would be that he is to learn to sketch in perspective; and when he asks what he should sketch, he would be told everything that appears to him interesting, striking, or beautiful, because when he gets into practice he will find that the public may ask him to build in any style the world has known. A good instance of the ignorant instructing the wise! He should be told that he has first to learn how to construct, and that the aim of architecture is to make of each building an organism like Nature's, fitted to fulfil its duties as perfectly as possible without waste of material, and to make it properly tell the tale of its purpose or purposes, and that if sculpture and painting can be afforded, he is to use them to tell its tale more completely.

When the Associates' curriculum is amended I would reduce the examinations to two, a matriculation examination and a final one, for two reasons: first, because time would be saved; and, secondly, so that each student might keep up the knowledge and skill he had acquired. Professor De Morgan used to say that when an examination was passed, the students thought all the knowledge required for passing it might be forgotten, and looked on his asking again for subjects they had once passed as a fraud, as if they were asked to pay a second time when they had the receipt for the first payment. The final examination should include a certificate that the candidate has acted as clerk of the works on some building for at least six months, to familiarise him with real work, and to impress on his mind that it is building and not drawing that is wanted. These amendments would greatly improve the condition of architecture; but architecture would be more improved if there were an examination for Fellows as well. The complaint is that there is a dearth of Fellows, and a proposition is made like that adopted by the giver of the Scripture feast, that we should send into the highways and by-ways and compel them to come in. There would surely be no need of compulsion if it were felt to be an advantage and an honour to be a Fellow. It has been said that eventually every Fellow must have been an Associate, but the present conditions of the Fellowship offer a way to escape examination. No one, I imagine, objects to see really distinguished architects being admitted by acclamation; but at present there are only three real qualifications for the Fellowship—that the candidate is thirty years of age, is honest, and has been seven years in practice; though it is true that the Council look at the drawings turned out of his office. Some one said of a Prime Minister in Cobbett's day that he was honest; to which Cobbett replied that no one would take a footman if honesty were his only qualification, and put this question: "Shall that be the only qualification for a Prime Minister?" No one can say that physicians or surgeons do not desire and do not strive to be Fellows of their respective colleges, or that both are not better for having learned the necessary elements of their profession. The only objection to a proper examination of Fellows is that it is absurd to expect it from men of thirty years of age who have been seven years in practice. The physicians and surgeons saw the force of this; and though the examination may take place at twenty-one years of age, the title cannot be assumed until they are twenty-five. The Fellows' examination should only be more complete than that of the Associates; and the candidate should have a certificate of having acted as a clerk of the works for a year, and made out the necessary full-size diagrams for the work on the floor.

I have only one remark to make before I give my peroration. I am rather surprised that architects do not see that degrees of excellence are possible in architecture; or, if they do see it, that they do not act on their convictions. The greatest living architects are contented

with the same remuneration for their work as the apprentice just out of his time, and merely seek to get into a wholesale business. This greatly helps to degrade the profession in the eyes of the public, and gives a very wrong impression of the facts, as every architect well knows. Thousands of public monuments have been erected in Europe since the Golden Age of Greece, not to speak of important private buildings; yet the Parthenon and the Caryatid Temple on the Eretheion have never been equalled since, nor the interior of the Pantheon, nor the west front of Notre-Dame at Paris, nor the Cornaro-Spinelli Palace, nor the Scuola di San Marco, nor the Town Hall of Brescia.

In all the other fine arts the first successful effort brings its author next to nothing, but those produced in the height of his skill and knowledge mostly bring him wealth, if that be his desire. The great Diogenes was a beggar, and Jean François Millet, the one artist in Europe according to the Japanese, was in poverty; and so was Alfred Stevens. Every architect knows that in the case of architectural works of moderate size it is a question if he is to gain or lose a five-pound note; and the more care he takes, the more certainly is the balance on the wrong side. The fashionable architect with a hundred buildings has a difficulty in persuading the profession or the public that he bestows the same loving care on each of his hundred buildings that he would do if he had only two, and is apt to provoke the retort of the lioness to the beasts in Æsop's Fables. "There was a great stir made among all the beasts, which could boast of the largest family. So they came to the lioness: 'And how many,' said they, 'do you have at a birth?' 'One,' said she grimly; 'but that one is a lion.'"

I cannot help desiring to see the pursuit of architecture followed on sound principles, nor can I forget the absence of any system in my youth; for then, after you had drawn out examples of the Greek and Roman orders, genius was supposed to do the rest. I am delighted at the admiration of our smaller domestic architecture by our great morning newspaper, *The Times*, and by M. Paul Sédille in his *L'Architecture Moderne en Angleterre*; but I wish to see that admiration extended to our great public buildings as well.

One sees to what lengths a proper architectural education may lead from mere savagery in the architectural triumphs of the Middle Ages. If the true architectural high road could be again found all might hasten to the goal, and not be like the dragon's teeth when the stones were thrown into the middle of them. Who knows that in the case of the right road being found the public might not again take a passionate interest in the excellence of our art, as it must have done at the great epochs? Modesty is a charming virtue in all, and especially in those of great intellectual endowments; but if this modesty is only to make us idle and worthless, let us throw it off. Let us no longer say we are so inferior to the ancient Greek, Roman, Byzantine, Saracen, Mediæval, and Renaissance architects that it is no use trying to equal them. Have we relinquished the courage, daring, and self-reliance that once distinguished our race? If we have we must be contented to lag behind the rest of the world. If we are not equal to former races, and particularly to the Romans we so much resemble, I believe it is because we have got into a wrong road, and I would rather see architects take up the position of our Ambassador at the Court of the father of Frederick the Great than be ready to confess that the English are hopelessly inferior to the great architectural races. Frederick William, as you know, had a regiment of giants, and paraded them in front of our Ambassador, and asked him if he thought an equal number of Englishmen could beat them. The Ambassador said he could not say that, but he would undertake that half the number would try. I hope we are not worse than the men of Milton's days, and hear what he says of them: "Lords and commons of England! consider what nation it is whereof ye are, and whereof ye are the governors: a nation not slow and dull, but of a quick, ingenious, and piercing spirit; acute to invent, subtle and sinewy to discourse, not beneath the reach of any

point the highest that human capacity can soar to. Therefore the studies of learning in her deepest sciences have been so ancient, and so eminent among us, that writers of good antiquity and able judgment have been persuaded that even the school of Pythagoras, and the Persian wisdom, took beginning from the old philosophy of this island. And that wise and civil Roman, Julius Agricola, who governed once here for Cæsar, preferred the natural wits of Britain before the laboured studies of the French."

I firmly believe that the race has not degraded, and that if we will only again take up the right way of learning we shall astonish ourselves and the world. May I not say—

"Men, my brothers, men the workers, ever reaping something new:

That which they have done but earnest of the things that they shall do."

To those who are not architects I may say that if you will devote yourselves solely to money-making and feasting, architecture which mirrors the condition of nations at the time it is executed will certainly languish; for the admiration it should excite and the gratitude it should call forth is the very breath of its nostrils. It cannot, however, be said of the nation now that it is without aspirations, for there never was a time when so many were striving to penetrate the secrets of Nature, and the past acts and thoughts of man, and trying to yoke the powers of Nature for man's use, and to teach and elevate their fellow-man and his helpmeet. To women more liberty has been granted than Mary Wollstonecraft asked for, and they have achieved even more than she hoped for. But all these studies and pursuits rather throw our contemporaries off those primary delights that Nature gave to raise, to solace, and to purify mankind—I mean the beauties of form and colour and the impressiveness of light and shade. But if these lessons be neglected, we shall leave behind us but a poor account of ourselves in those arts which strike the eye and impress the imagination. We have, too, unfortunately abandoned the symbolic, the emblematic, and the allegorical, so that we can tell no story to the eye by which the multitude may be impressed. It is foolishly believed that a paragraph in a newspaper or in an Act of Parliament will tell the same story and make the same impression on the multitude that can be made by a fine building adorned with storied and allegorical sculpture, and painting such as we see in the Arch of Titus or Severus. The Jubilee procession, poor as it was as compared with Mantegna's "Triumph of Julius Cæsar," told more of our power and extent of empire than all the history that has been written in this century. Recollect what an obtrusive art architecture is, and how strongly it forces itself on the attention; how long it lasts, and how it forces people to come to see it in its own country. If you would only think that it is the history of the present power and cultivation of the people, you would at least learn enough about architecture to be able to judge of its excellence as you do about the other fine arts you love, and be as proud of its excellence and as delighted with it as you are with the pictures, statues, poetry, romances, and musical compositions of the day; and when you do take the same interest in it you will certainly have your reward.

VOTE OF THANKS TO THE PRESIDENT.

MR. H. HEATHCOTE STATHAM [F].—Ladies and Gentlemen, in rising to propose a vote of thanks to the President for his Address, perhaps I may suitably address myself rather to the House than to the Chair, and I am sure I shall carry the House with me in saying that it is very seldom that we have listened to a Presidential Address from this Chair which contains so much weighty and important thought upon the art and profession of architecture comprised in such comparatively short limits. It appears to me that the Address

has in view two main objects: it touches upon what this Institute can do, and it touches in the broader sense upon what can be expected and what can be done by modern architecture. In regard to what the Institute can do, the President puts very strikingly the true object of the examination of architects, as to the value and use of which there has been a good deal of controversy; but he puts the Examinations as having rather a preventive value. We do not want people in the profession of architecture who do not care for it, and do not

wish to do the best with it; we are sentinels to drive such away, and to keep with us those who really love it and mean to put the best of their hearts into it. Then the President refers to what a student of architecture is advised to do—to sketch in perspective, and sketch everything that is beautiful. That reminds me of a feeling I have often had that a good deal of the practice of sketching as it is carried on by an architectural student is not without its danger—that is to say, that if you come to sketching everything you see, you get a sort of love for it, and you get a passion for introducing it somewhere; and, as the President says, the public wanting you to introduce every known style, you fill your pocket-book with sketches of every style. I would suggest that the measuring and drawing out of ancient construction is a far more important training to young architects than the sketching of exteriors of ancient buildings, and more likely to lead them in the right way. With regard to the difficult subject of the Fellowship of the Institute, my own sympathy is with the opinion of the President, but I cannot conceal from myself the other argument, that this is to some extent a professional society for assisting each other's interests where it is right; and I think it is a point which cannot be disposed of in a moment. With regard to architectural education, the President seemed to cast a slur upon the literary part of the Examinations when he said it was very well to know a number of languages, but they are not architecture. No, they are not: but it is just as well an architect should not write that his building is designed in the style of the fourteenth "century," which I have had twice from architects in large practice. Architects should be a well-educated body; they are then more likely to be regarded with respect by the public. Coming to the larger question, what architecture is and how we can improve it, there are one or two points upon which I do not quite feel with the President. In regard to the matter of statics, which will give us important lessons as to the height of a building, the weight to be carried, the kind of material to be used, and that we have only to accentuate the important parts by moulding, &c., so as to make it effective—I would ask, Is not the plan of a building the central idea, after all? Is not that part of the artistic idea? We have, I think, a very fine example of that in what I have always considered to be our greatest modern building—namely, the Houses of Parliament. It is easy to say that the detail of the Houses of Parliament is only a repetition of Late Gothic detail. So it is; that is what was thought right at the time. But does not the real excellence of it consist in the grand conception of the plan and the grouping of the two towers and the central spire? I think the central idea is the plan, and that that is really a form of art just as much as the detail of the building. Then the President has always had a very strong

idea as to the importance of giving our minds to the treatment of new materials, especially iron. I should like to suggest one thing. It is a very complete way of putting it to say that the Egyptians had a granite architecture, the Greeks had a marble architecture, the Mediæval architects had a stone architecture, and we have got iron; but, after all, do not all those ancient materials—granite, marble, stone—belong to the same family? They are all natural materials. Iron cannot be put quite upon the same footing with them. It is to some extent an artificial material, artificially prepared; moreover, it has to be painted, in order to preserve it from the weather, which stone has not. Then I do not think you can get with iron anything like the broad expression that can be got from the stone materials. Try it in modern work. Suppose a client wants you to build him a mansion in the middle of his ancestral park, amid his old oak trees, and suppose you offer to build it for him in the most advanced construction of iron and concrete, do you not think you would get from your client what the people in the little comedy, *The Two Roses*, got from their patron, "a little—check," spelt the wrong way? Then, again, is iron a monumental material? We do not know that yet. I remember asking the engineer of one of the greatest iron constructions of this century how long a life he would give it. "Well," he said very cautiously, "with proper care I do not see why it should not last five centuries." Proper care meant painting it every five years, strengthening it, replacing all the loose rivets, and so on. But, after all, what is five centuries to architecture? Look at the Pantheon, look at St. Sophia, and, if you put aside the destructive work of man, you might say, look at the Parthenon: for it is only owing to the zeal of the Byzantine Christian and the bombshells of the "unspeakable Turk" that the Parthenon is not at this moment what a stage-manager would call "a practicable temple." Then when people say that these great engineering works, like the Forth Bridge, are the great modern works; that they are to this age what the cathedrals were to the fourteenth century—well, after all, though these works are striking and grand in a way, they are not built with the object of being beautiful. The cathedrals were, and that is a most important difference. I maintain that we must hold strongly to the idea that architecture, although it is based, as the President reminded us, on construction, has for its real object the producing of beauty appealing to our imagination, and that you cannot compare it in that way with works which are built from purely utilitarian motives. To come to the present day, and the chances we have of producing anything great, I sometimes think that "this so-called nineteenth century" is a little too much abused. It reminds me of a story of a Roman Catholic Bishop on a visitation. In one of the churches he went to, he thought the people looked depressed and melan-

choly, and in the privacy of the vestry he said, "Father So-and-So, do you know, I think ye curse these people too much." So I think we curse the nineteenth century too much. A century hence, I think this period will be seen to have been not a mean or small, but a very remarkable era, which has led to a great many new forms of thought, to an enormous advance in science and in a knowledge of the laws of Nature, and to have been a great literary era; but it certainly has not been a great architectural era. Perhaps we may be obliged to conclude that we cannot do everything at once; but I have no sympathy with those people, like the late William Morris (I do not speak with any disrespect of him, but he was a pessimist with regard to architecture), who keep repeating, "Architecture is dead—architecture is dead." What is the use of standing with your hands in your pockets and saying, "Architecture is dead"? Why not try to make it live? If architects would only give their minds to each problem that comes before them; if, instead of trying to lay hold of the details of some past style, they would think, "What have we got to express in this—how can we make it a symbol of something?" they would find themselves really accomplishing something, and more perhaps than they expected. In the words of the French sculptor Rude, which I quoted the other day in a communication to the *JOURNAL*, "*La grande chose pour un artiste, c'est de faire*"—to be producing something. And I think, if we keep that before us, if we look upon architecture as a symbolism of what we desire the building to express, instead of going to the past for symbols, and try to make out of it what we really care for ourselves, we shall be able to do something: something perhaps not so elaborate as the Renaissance or Classic or Gothic, but something which will illustrate the exhortation given by the poet:

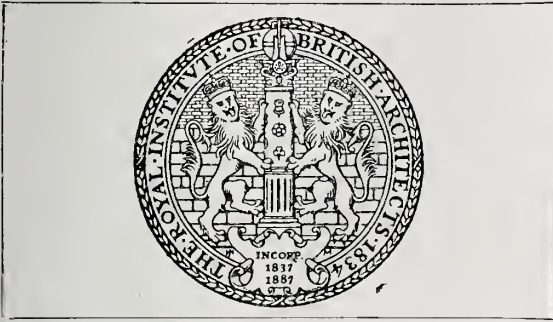
"Oh thou sculptor, painter, poet,*
Take this lesson to thy heart;
That is best which lieth nearest,
Shape from that thy work of art."

MR. ALEX. MURRAY [*H.A.*], LL.D., F.S.A.: Ladies and gentlemen, in seconding the Vote of Thanks to the President, I may express the opinion of many if I say that upon the question which he has chosen for his Address, viz. "The Education of Architects," no one is better entitled to be listened to than he, with his long experience, his habit of observation and reflection, and his readiness in recognising greatness in every profession. On that part of the Address it would be presumptuous in me to speak. I have no idea of what the Associates' curriculum may be, amended or unamended. As to the final examinations, my experience is that most examinations have a tendency to be final. But the President has accom-

panied his views on the subject of education with a running commentary, sometimes entertaining, and meant to be so, as in the episode of his school-days, but mostly leading up to some general remark sententiously expressed and deserving to be treasured. I feel sure that these remarks have struck you all. Let me recall one or two of them. "If you can touch the master chords of humanity, they are not so differently attuned now from what they were in the earliest times." Such is the reflection after advocating strenuously the study of all that is great in the past of architecture. Again: "We believe that Nature perfectly adapts all her living works to the actions they have to perform, without waste of material." How much is expressed by these words, "without waste of material," most of us, whether architects or not, know to our cost. But I think the danger of wasting material is perhaps more imminent for architects than others, because of the endless variety of the taste, or want of taste, they have to consult. Or take another instance. I find it difficult to recall to mind a more impressive statement of fact than that which occurred in a sentence at the close of the Address. "Recollect," he said, "what an obtrusive art architecture is, and how strongly it forces itself on the attention: how long it lasts, and how it forces people to come and see it in its own country." It has always been true, and never more so than now, that great architecture forces people to come and see it in its own country. A long, tedious, and expensive journey is nothing, if a sight of the Parthenon is the goal. But this readiness to admire the charms of other and older countries must bring with it the aspiration to erect in our own country works which shall, in their turn, keep alive the memory of the men of our own day. It was in urging this that the Address seemed to me most eloquent. We all know the fascination which Greek mouldings exercise on the mind of the President when they are seen in the sunshine of Greece. He has recurred to that subject to night, observing that any one who has seen such mouldings at Athens must recognise how much they lose in our atmosphere. I do not suppose that on that account he would banish them entirely from our shores. Many of us would be sorry if that should happen; because, ineffective, as Greek mouldings may be in our climate, they still retain and display much of their unique beauty. I remember one day on the Acropolis of Athens, when a fragment of egg-moulding, high up on one of the corners of the Erechtheum, struck me as if the small row of eggs had become resolved into drops of dew, the sun glancing on them with indescribable beauty. We cannot have startling effects of that kind in this country; but we can live in hope that some architect may yet find an equivalent, inspired by what he has seen in Greece.

THE PRESIDENT briefly replied.

* Longfellow would no doubt have been willing to add "architect," but it would not come into the metre.—H. H. S.



9, CONDUIT STREET, LONDON, W., 6th November 1897.

CHRONICLE.

Papers for the Session.

1897.
 Nov. 15.—Notes on Renaissance Architecture in Malta, with special reference to the Buildings of the Order of St. John. By A. S. Flower, M.A., F.S.A.
 Dec. 13.—Brickwork Tests: Report on the Third Series of Experiments. By Members of the Science Standing Committee.
1898.
 Feb. 7.—The Housing of the Drama. By E. O. Sachs.
 Feb. 21.—The Mediæval Campanili of Rome. By J. Tavenor Perry.
 Mar. 21 { The Heraldry of Antiquity. By G. H. Birch, F.S.A.
 Heraldic Drawing. By J. D. Crace.
 Apr. 4.—Artistic Copyright. By G. Harmand, Avocat à la Cour d'Appel, Paris.
 Apr. 18.—Domestic Architecture in the United States. By A. N. Paterson, M.A.
 May 16.—The Libraries of the Middle Ages. By T. G. Jackson, R.A.

The Opening Meeting.

There was a very satisfactory muster of members and their friends, including several ladies, at the Opening Meeting on Monday evening. Among members present was Sir John Taylor [F.], who in the recent distribution of Jubilee honours was made a K.C.B., and whom the President took opportunity early in the proceedings of felicitating upon his new honours, and expressing the satisfaction felt by members that one of their number had been thus distinguished. The Allied Society at Sheffield was represented by their Hon. Secretary, Mr. C. J. Innocent [F.], and among the numerous visitors were Sir Philip Magnus, Mr. Humphry Ward, Dr. Garnett, Mr. J. A. Bennion, Mr. T. Armstrong (of the Science and Art Department), and Mr. H. Muthesius, architect to the German Embassy in London. The President and subsequent speakers had an attentive and interested audience, duly appreciative of the occasional touches of humour with which the Address was enlivened.

The National Photographic Record Association.

This Society "has been formed for collecting photographic records of objects and scenes of interest throughout the British Isles, with a view of depositing them in the British Museum, where they may be safely stored and be accessible to the public under proper regulations." The President is Sir J. Benjamin Stone, M.P., to whom the honour and credit of the conception are due. On the Council are distinguished representatives of the chief learned and photographic societies, the British Museum, the Natural History Museum, and the Science and Art Department. Mr. Alexander Graham [F.] is Treasurer, and Mr. George Scamell [F.] is Hon. Secretary. The following remarks, quoted from a circular letter issued by the executive, express the aim and scope of the organisation:—

The Association having been fairly launched, the elected Council appeal to those who are interested in the subject to assist in bringing together a truly National Photographic Record of all existing objects of interest, as well as scenery, life, customs, and history of the time. Well-wishers can help by becoming members of the Association, the subscription fee for which has been fixed at a small sum with the object of enlisting wide and general support.

Photographers and others can assist by contributing photographs (which must comply with the regulations set forth in the bye-laws), or by acting as Hon. Agents and Collectors in their respective localities.

The Council look for generous support from Photographic and Camera Clubs throughout the country, as well as from individual amateur photographers, who must now form a complete network of workers over the whole British Islands.

The Council also appeal to the large and important professional class of photographers for copies of rare and especially interesting pictures taken by them.

From scientists, antiquarians, and others, assistance is desired in searching among the rich stores of old and neglected negatives taken in past years which are known to exist, the identification of which gets more difficult as time passes, and also by using influence with their amateur photographic friends in inducing them to seize opportunities of recording passing events.

Others may render valuable help by purchasing pictures from dealers and presenting them to the National Collection, thus rescuing records which might otherwise be lost. In the course of the present Jubilee year there must have been many thousands of photographs taken of local celebrations, which, if brought together, would form a most valuable chapter of national history, and it may be remarked in passing that it should be borne in mind that a single picture of historical interest will always be acceptable.

In conclusion the Council wish it to be understood that there is no thought of competing or clashing with the excellent work of the same kind which is being so well done by the several County Photographic Survey Associations, such as those of Warwickshire, Worcestershire, Yorkshire, Cheshire, &c., in their commendable efforts to form local collections, but rather a hope is entertained that such useful work may be encouraged by loans being made from time to time from the National Collection, before being deposited in the British Museum, of interesting pictures from other localities for the purposes of exhibition.

It is thus obvious that the Association has embarked on a vast scheme whose importance it is

scarcely in our power to gauge. Imagination reels at the idea of such a record of the past coming to us through the ages. Yet this will be the commonplace of future generations.

The University of California.

The prospectus of an enterprise which the promoters seek to make one of the most notable in the history of architecture is to hand from San Francisco, sent by the Trustees* of the Phebe Hearst Architectural Plan of the University of California. The document invites the co-operation of architects and artists of every land and clime in the preparation of a plan for the new buildings of the University, to form "an ideal home of education."† Funds for securing the plan have been provided by a philanthropic and public-spirited lady, Mrs. Phebe A. Hearst, widow of a United States Senator. As far as space permits, extracts from the prospectus are here given:—

The purpose is to secure a plan to which all the buildings that may be needed by the University in its future growth shall conform. All the buildings that have been constructed up to the present time are to be ignored, and the grounds are to be treated as a blank space, to be filled with a single beautiful and harmonious picture, as a painter fills in his canvas.

The site comprises 245 acres of land, rising at first in a gentle and then in a bolder slope from a height of about two hundred feet above the sea level to one of over nine hundred feet. It has a superb outlook over the Bay and City of San Francisco, over the neighbouring plains and mountains, and the ocean. It is the desire of those who have charge of this enterprise to treat the grounds and buildings together, landscape gardening and architecture forming one composition, which will never need to be structurally changed in all the future history of the University. It is thought that the advantages of the site, whose bold slope will enable the entire mass of buildings to be taken in at a single *coup d'œil*, will permit the production of an effect unique in the world.

It is seldom in any age that an artist has had a chance to express his thought so freely, on so large a scale, and with such entire exemption from the influence of discordant surroundings. Here there will be at least twenty-eight buildings, all mutually related and, at the same time, entirely cut off from anything that could mar the effect of the picture. In fact, it is a city that is to be created—a City of Learning—in which there is to be no sordid or inharmonious feature. There are to be no definite limitations of cost, materials, or style. All is to be left to the unfettered discretion of the designer. He is asked to record his conception of an ideal home for a University, assuming time and resources to be unlimited. He is to plan for centuries to come. There will doubtless be developments of science in the future that will impose new duties on the University, and require alterations in the detailed arrangement of its buildings, but it is believed to be possible to secure a comprehensive plan so in harmony with the universal principles of architectural art

that there will be no more necessity of remodelling its broad outlines a thousand years hence, than there would be of remodelling the Parthenon, had it come down to us complete and uninjured.

In the great works of antiquity the designer came first, and it was the business of the financier to find the money to carry out his plans. In the new building scheme of the University of California it is the intention to restore the artist and the art idea to their old pre-eminence. The architect will simply design, others must provide the cost.

About five million dollars have already been pledged for a beginning, and such a general desire to contribute has been manifested that it is thought that all the funds required will be forthcoming as fast as the work can be carried on.

While the method of obtaining the architectural plan has not been decided on in detail, it is thought that it will be done by an international *concours*, open to all the architects of the world, with an international jury of five members, who will have full charge of the *concours* and of the award of all the prizes. This *concours*, while partaking in some degree of the nature of the usual competition, will possess all the main features of an actual co-operation of the best architectural and artistic talent available for the purpose, as will be seen from the programme which has been prepared with that idea as a controlling one.

There will be two competitions, and ample prizes will be provided. Maps, casts, and photographs of the ground will be placed at various accessible points in Europe and America, for the convenience of architects desiring to enter the *concours*; and the programme thereof, prepared by Professor Guadet, of the School of Fine Arts of France, is now under consideration by the Trustees.

Copies of this programme, when issued, may be obtained by architects from the various architectural societies in America and Europe, or upon application to the Board of Trustees, at their office, 217 Sansome Street, San Francisco, California.

Additions to the Library.

Mr. H. L. Florence has supplemented his handsome gift of the first volume of Mr. Sachs' work on *Modern Opera Houses and Theatres* by the second. Mr. Sachs seems to be quite equal to his vast undertaking. The quality and interest of the earlier volume are sustained in the present work; indeed, the success of his scheme has enabled Mr. Sachs to extend its scope considerably. An illustration of the recently erected Her Majesty's Theatre is given as a frontispiece, and the Opera Houses of Paris and Vienna are amongst the most important theatres dealt with; while space is devoted to eight English theatres. The modernity of Mr. Sachs' work may be estimated by the fact that it contains examples of no theatres built earlier than 1869; the aim of the author being that he should carry on and complete the work begun by Contant. The volume contains one hundred plates and ninety-five illustrations in the text. [London: B. T. Batsford.]—*Library Construction, Architecture, Fittings, and Furniture*, by Mr. F. J. Burgoyne, which forms the second volume of the Library Series, meets a want that has been felt for some time, and meets it well. Its author is a librarian of extensive experience, and his statements have the authority of one who is familiar with the inner working of libraries and their requirements. There

* The Trustees consist of the Governor of the State, Mr. James H. Budd, representing the State; Mr. J. B. Reinstein, representing the Board of Regents of the University; and Professor W. Carey Jones, representing the University.

† The University at present has 2,300 students, but in the new buildings provision must be made for 5,000.

are one hundred and forty-one illustrations, including many plans, and the matter is brought admirably down to date, a plan of one building, at least, being given which is still in course of erection.—Mr. Arthur S. Flower, a couple of years or so ago, in a review of *Practical Building Construction*, by Mr. J. P. Allen, predicted that a second edition would soon be called for, a prediction which has now been fulfilled. In his second edition the author has taken advantage of the opportunity of revising his text and of inserting a few additional illustrations. This work, which is designed for the use of students preparing for the Royal Institute and other examinations, has been presented by the publishers [London: Crosby Lockwood & Son].

It will be of interest to those who principally use the Loan Library to know that Millar's *Plastering* and Freeman's *Sketches of Travel in Normandy and Maine* may now be obtained, and that copies of Parker's *Introduction to the Study of Gothic Architecture* have been transferred from the Reference Department. The numerous books which formed part of the White Bequest, and which were placed in the Loan Collection, are now also available for borrowers.

HER MAJESTY the Queen has been graciously pleased to bestow the Royal Jubilee Medal upon Professor Aitchison, A.R.A., the President of the Royal Institute.

AN erroneous statement of the death of Señor Belmás [*Hon. Corr. Memb.*], of Madrid, occurs in the new *KALENDAR* (p. 129). Señor Belmás himself writes that he is alive, "in good health, and that the Institute can still dispose of the services of its Hon. Corr. Member since 1882."

NOTES, QUERIES, AND REPLIES.

A Relic of Sir Christopher Wren.

From J. D. CRACE [*H.A.*].—

A few months ago I expressed my intention to the Literature Committee to give to the Institute an interesting letter of Sir Christopher Wren's. At the time I could not put my hand on it; but I have recently found it, and now have the pleasure to keep my promise.

The letter is interesting because it refers to his two greatest works, St. Paul's and Greenwich Hospital. It is not sufficiently known that the latter work was undertaken by Wren without emolument. The letter is unfortunately not dated; but there is, I think, fair evidence that it was written in the autumn of 1700 or 1701—Wren's design was submitted in 1698—and the Hall was roofed in, and the dome finished by August 1703.

I am not quite sure whether the "Mr. Vanbruck" to whom the letter is addressed was the famous architect of Blenheim. He was appointed surveyor to Greenwich Hospital in George I.'s

time, and may have held some subordinate position earlier.

A signature of Sir John Vanbrugh is attached to the paper on which the letter is mounted. The letter itself was rescued by my father from a mass of documents in Greenwich Hospital ordered for destruction some time about 1840 to 1845.

* * This interesting relic, thus kindly presented by Mr. Crace, the Council have ordered to be framed and preserved in the Library. The following is an exact copy:—

MR. VANBRUCK,—

I desire you to excuse me to the Coñissioners to day. His Grace of Canterbury hath appointed a Coñission at Pauls this morning the same Hour; from w^{ch} I cannot be excused. The best businesse wherin the Coñission of the Fabric of Greenwich can employ their time, is to consult of mony; this at present is the only necessary thing; if this can be speedily had, the works will proceed I hope to a covering, if otherwise it is better to cover up the walls before frost & snow: & if against Spring mony be got into the Treasurers hands before hande, wee shall make the better bargains & finish sooner then wee can by running in Debt

Your affectionate freind
& servant

Fryday morne.

CHR. WREN.

The Ownership of Drawings.

From F. WARREN [*A.*].—

In his interesting review of Messrs. Macassey & Strahan's book on *The Law relating to Architects*, &c., in the *JOURNAL*, No. 19, Professor Kerr states that the authors approve the law as laid down by the Courts that "the drawings belong to the Employer." The question, however, has arisen: *When do the drawings (and what drawings) become the property of the employer? At what period can he claim them? Surely until a contract is completed drawings are the architect's tools. Presumably the claim is limited to contract signed drawings; or can the employer claim all details supplied to the builder as the work proceeds? Can he claim them (a) the moment the contract is signed, or (b) when it is completed, or (c) at any intermediate point or period? Again, granted that the employer cannot demand the drawings until the completion of the contract, is he legally entitled to demand copies of drawings while the works are in progress, or is an architect legally justified in declining to give them?*

Professor KERR [*F.*], to whom an advance proof of the above was submitted, writes:—These are questions for a lawyer; and he would very likely decline to give us anything like conclusive answers; but amongst ourselves, a practical man of experience would probably advise an enquirer to act on the following assumptions:—(1) that all drawings of a practical character prepared in consideration of payment, or a promise to pay, are

the property of the payor, even from the very commencement of their preparation; (2) that to call them "tools," or the like, only implies that in this kind of business, as in so many others, the tools are supplied by the master, who can at any time claim possession of them, even foolishly, subject perhaps to the law of lien, and of course to the law of responsibility; but (3) that any superfluous drawings are not the property of the ordinary payor, except in so far as he may possibly raise a question of copyright. After all, however, it is the good fortune of architects that such questions do not arise in the ordinary course of their business.

** Useful reference may be made to an essay on this subject by the late John W. Papworth, published in the *JOURNAL*, Vol. I., 3rd ser., p. 187.

REVIEWS. LX.

(165)

CHESTER CATHEDRAL.

The Cathedral Church of Chester: a Description of the Fabric and a brief History of the Episcopal See. By Charles Hiatt. 8o. Lond. 1897. Price 1s. 6d. George Bell & Sons, York Street, Covent Garden, W.C.

Of all the tasks which an architect may undertake, perhaps none can be at once so interesting,

the architect not only thorough knowledge of the history of the edifice and of its architecture, together with high constructive skill and artistic judgment and appreciation, but also *imagination*, while it very strictly proscribes the play of taste or fancy beyond certain narrow limits; and when the task is completed the architectural glory reverts to the ancient architects, while the modern renovator has all the blame, of which there is generally more than enough from many critics.

The vanity and human nature of the restoring architect make him chafe at these hard conditions, which his fondness for fame disables him too often from faithfully fulfilling. He forgets that, as a restorer, the true gauge of his success is the degree of his self-repression. So when the visitor to a church or cathedral follows the track of the restorer he finds the personality of the latter frequently obtruded upon him, while that of the original architects is thrown into the background. To some extent this is due to historical perspective, and the restoring architect is no more to blame than is the small but near eminence in the landscape which blocks the view of the higher alps. But, after making due allowance for natural perspective, there still remains in the track of the church and cathedral restorer a deplorable excess of self-assertion, not to say self-advertisement; and



THE CATHEDRAL FROM THE WALLS. (From a photograph by Carl Norman & Co.) (By permission of the Publishers.)

perplexing, and thankless as the restoration of an English cathedral, for such a work demands from

in some instances, where ancient buildings have been irreverently handled, it would be not too

much to say "fools have rushed in" and left their marks "where angels feared to tread."

Mr. Hiatt's choice and compact little volume tells, as plainly as could be told in such small compass, how Chester Cathedral has fared at the hands of the restorers, amongst whom Sir George

studying the admirable illustrations which enrich Mr. Hiatt's pages of what the cathedral was, as well as of what it is, it becomes apparent that by discarding the old Perpendicular lady-chapel with its low-pitched roof for the steep-pitched roof of the new lady-chapel, Sir Gilbert Scott not only



THE CATHEDRAL AT THE END OF THE SEVENTEENTH CENTURY. (From an old engraving)

Gilbert Scott towers, like a veritable son of Kish, head and shoulders above the rest.

Mr. Hiatt casts no reflections upon Sir Gilbert, but contents himself by stating that he "of course treated the church to his usual policy of 'thorough'"; and this statement many readers will endorse, together with any subacid flavour which attaches to it by the author's intention or not.

If Dean Howson, the zealous and scholarly mainspring of the restoration movement, had desired a new cathedral for Chester, he probably could not have appealed to a fitter architect than Scott. But it is, to say the least, possible that, instead of Scott, a less popular but not less archæologically learned nor less reliable architect could have been appointed, who, with greater reverence for the Perpendicular Gothic than Scott possessed, and with more leisure if not more humility, would have restored Chester Cathedral more successfully.

Mr. Hiatt writes admiringly of the lady-chapel as a specimen of Sir Gilbert's Early English Gothic, and every one must admit that, considered by itself apart, it is indeed a beautiful building. But in

compelled himself to avoid blocking the great east window of the choir by awkwardly hipping the lady-chapel roof, but he dwarfed the effect of the central tower by increasing the height of the lady-chapel as well as by the huge pinnacles on the east gable of the choir. And the turrets which he added to the central tower itself rather aid than diminish the dwarfing of the effect of the tower. It is true the addition of the proposed grand spire to the central tower would greatly reduce the force of these reflections on Sir Gilbert's work; but in the meantime they certainly hold good, and centuries may elapse before the spire is added.

Any one comparing the present cathedral restored, as shown by the photograph frontispiece of Mr. Hiatt's book, with the cathedral as it was before the restoration, as shown by the reproductions of old drawings which our author supplies, must perceive that the unrestored building in its simple bareness was much more dignified, though less ornate in its effect, than the cathedral as it now stands. And the central tower in particular is seen by this comparison to have suffered greatly in loss of that impressive preponderance over the

lower masses of the structure which it formerly possessed.

The best friends of Chester Cathedral, and of Sir Gilbert Scott, must ardently desire that the great spire may be added to the central tower at no distant date, and that the western towers may be simultaneously built; so that the reproach of this cathedral, as an architectural composition, may be soon and permanently removed.

Mr. Hiatt does not explain how Sir Gilbert Scott, and Dean Howson, who supported his plans, justified the adoption of the present style and height of the lady-chapel. But he appears to



THE CHOIR SCREEN AND ORGAN. (From a photograph by Carl Norman & Co.)

(By permission of the Publishers.)

think an apology is due to his readers for the very singular extinguisher-like roof which these restorers added to the apsidal east end of the south aisle of the choir, and, as the author himself very wisely refrains from justifying this strange feature, he leaves Sir Gilbert to offer his own explanation, which is quoted in the book at some length. This explanation will not seem quite adequate to every one. To some it may appear rather an excuse than a justification for what they may be pardoned for ignorantly (?) regarding as a species of architectural sensationalism.

It must, however, be allowed that Sir Gilbert Scott was, as a rule, singularly free from that vice of *outré-ism* which seemed—thanks to a few

celebrated extremists amongst his contemporary church architects—in danger of “catching on” just about the time when the Chester Cathedral restoration was being commenced. At or about that same time many of our English Gothicists were beginning to feel English Gothic tasting a little stale (though it had been reborn only a generation before), and were showing a strong *penchant* for the Gothic of Normandy; and it is noteworthy that in justification of his extinguisher-roof Scott quotes similar ones in Northern France.

There never was a time, since Edward the Confessor, when some one architectural fashion or other was not “all the rage” in this country. But in the procession of variations of architectural fashion during the Middle Ages there was a grandly massive deliberateness, a solemn slowness of sequence, a continuous development of gigantic progress in artistic construction, strongly contrasting with the peripatetic freakishness, the feeble fickleness, and the remarkable lack of steady persistence in the tendencies of architectural fashion during the long splendour of Queen Victoria’s reign. While Sir Charles Barry and others yielded more or less to this modern spirit of trilling with architectural styles, now coquetting with Italian and now flirting with Gothic, Sir Gilbert Scott maintained a splendidly steadfast course as a Gothicist pure and simple; and from his great eminence, and equally great consistency, he came to be regarded as the champion and leader of the reborn English Gothic School. Then came his surrender to “the powers that be” in Parliament Street, when, to please the Minister of State, he substituted his Classic for his Gothic façade of the Foreign and Colonial Offices, thus weakly becoming guilty of what his Gothic *confrères* have ever since regarded as “the great betrayal.” He seems by this time to have had so vast an extent of work that he was compelled to trust very largely to his staff, who were less proof against the flippant influences of rapidly veering fashions than he himself was; and in this way things were sometimes done in his name which were really foreign to his own tastes. But this explanation would not account for all the “thorough” features of his “restoration” (or may we not rather say his *remodelling*?) of Chester Cathedral.

Be that as it may, our author has contented himself with giving a true and painstaking account of what was actually done at Chester by this great church architect; and though he does not condemn Scott, he does not by any means flatter him as to his work there as a restorer.

While the treatment of the exterior of Chester Cathedral by the restorers is open to the general criticism that what has been gained of ornateness has been lost of sublimity, no such opinion can fairly be held of the restoration of the interior; for though, as Mr. Hiatt justly remarks, the interior of the

east gable of the choir, with its great window surmounting the arch of the lady-chapel, is "unsatisfactory"; and though the marble mosaics of the north aisle of the nave are, from a chromatic point of view, hardly so successful as glass mosaic would have been; and though the window glass throughout the cathedral is, save in some cases, not of high order, yet, in the interior *tout ensemble*, no false note spoils the general harmony of form and proportion, or the poetry of light and shadow of the long and lovely vista; and it must be allowed that the treatment of the great organ-case under the north transept arch, together with the organette, surmounting, as a large and handsome pinnacle, the centre of the choir-screen, is a distinct success; while the vaulting of the cathedral with oak instead of stone gives proof of the sound constructive judgment of Sir Gilbert Scott, as well as of his fine appreciation of harmony of colour between the wood and stone. It is a matter for thankfulness that at Chester Sir Gilbert did not introduce, as he did at Durham Minster, designs in Italian Gothic utterly foreign to the spirit and style of the English church builders; for however pleasing such designs may be in themselves, they become, when placed in such false positions, offensively unwelcome.

From an archæological point of view, the most interesting part of Mr. Hiatt's volume is the latter part, wherein he describes the conventual buildings attached to the northern side of the cathedral. This portion of the book might well claim a review to itself.

Of all the excellent photographic views which enliven our author's pages, none are so exquisite as the interiors of the cathedral itself, which are fine specimens of photographic art.

In the body of the work reference is casually—much too casually—made to the fact that a man named George Marsh was tried for his life in the lady-chapel on a charge of "heresy," about the time of the Reformation, and was afterwards burnt at Boughton, near by. But while the pinnacles, arches, towers, and tombs of Chester glorify the sepulchres of nobles and priests, no monument to the memory of the martyr seems yet to have been raised by the good folks of the city whose pious ancestors burnt him. If the glory of martyrdom is of all glories the highest, a fitting memorial to the martyr of Chester would be a noble spire crowning that cathedral in which his doom was cruelly sealed, and thus surmounting, as it were, its darkest tradition by the brightness of his devotion, and so exalting good over evil.

The visitor to Chester who reads Mr. Hiatt's book must think it strange that Dean Howson, who so powerfully contributed to Conybeare and Howson's justly celebrated literary memorial of St. Paul, should have become the mainspring of the restoration of the lady-chapel of Chester Cathedral, without, so far as Mr. Hiatt gives his

readers to understand, taking any steps or making any effort to perpetuate and glorify the memory of the local martyr. This would indeed tempt such visitor to feel that martyrs as well as prophets lack appreciation in their own country. May those who are now responsible for Chester Cathedral, and jealous for its honour, take this consideration to heart!

FRANK CAWS.

Sunderland.

(166)

A PRACTICAL TREATISE ON PLASTERING.

Plastering, Plain and Decorative. A Practical Treatise on the Art and Craft of Plastering and Modelling. By William Millar, Plasterer and Modeller, with an Introductory Chapter by G. T. Robinson, F.S.A. 40. Lond. 1897. Price 18s. [B. T. Batsford, 94, High Holborn, W.C.]

There is a good deal of what might be very well designated as "shop knowledge" which every efficient architect ought to know. Paper design is with us, and we cannot conveniently do without it; situated as we are in the perplexities of close estimating, our requirements have to be exact. To render such truly artistic, and fit to occupy any position which circumstance may suggest, experimental practice on the scaffold or in the shop seems indispensable. For to don a blouse does not involve humility, but, contrariwise, imparts a certain dignity to the artist.

To illustrate the point: an elementary acquaintance with stone cutting will reveal such difficulties and problems to be solved, that the architect will learn naturally its possibilities from the material itself, and the restrictions it places on anomalies of design. This principle applies all round, to lead, wood, plaster, and everything which has to be wrought by a skilled hand.

Now all this has a bearing on the bulky volume under notice, for its author, a practical and accomplished craftsman, is most lavish in his description of methods which will aid us considerably in doing a little daubing ourselves with the plastic materials, the possibilities of which are endless. As already indicated, knowledge obtained by personal experience will bring fresh life and interest to our drawing-boards, enabling us to produce what we want, because we know a little of the possibilities. In this way simpler, more suitable, and more desirable productions will undoubtedly result.

We are here introduced to "Plastering, Plain and Decorative," the treatment of which, from the craftsman's standpoint, is pretty nearly exhaustive. It is viewed by the author in a most comprehensive manner; for he deals with materials of all qualities and their several uses. He discusses the diminishing and working out of circular mouldings, all branches of plastering, modelling, casting and colouring, and the manufacture of compositions of the plastic trades from scagliola to terracotta and concrete, adding a rudimentary treatise

on Geometry and Architecture, tools and appliances, winding up with an appendix and a good index. What more can any emulative plasterer need? He can find everything here sorted and condensed. Intrinsic interest apart, the book in itself is a monument of research and industry, and the author is to be congratulated on having sur-

“A Glimpse of its History.” This fills some twenty-three pages, and the interest Mr. Robinson arouses makes the reader wish for more.

The artistic history of plastering has yet to be written; but Mr. Millar deals with it partially in a short and terse manner. He also treats succinctly of foreign plastering—Saracenic, Indian, Moorish, Chinese, and Continental. In all of this he shows himself to be no prentice hand, but a plasterer and the son of a plasterer, a veritable child of the clay.

It is impossible adequately to notice a large work such as this, which, apart from its usefulness, contains a vast amount of generally unknown interesting information. With reference to hair, we are informed that in America ox hair is adulterated with that of the horse and goat; while in Scotland it is taken direct from the tan-yard in a wet state; also that human hair is not infrequently used in jerry-building. There are other substitutes for ordinary materials, such as sawdust, which is used instead of sand in wall plastering. There is not an architect who at one time or another has not been exercised about painting cement work. The author states that the Keene's cement, manufactured by Howe of Carlisle, is practically non-efflorescent, and later he proceeds to describe how cement work may be successfully painted:—“Caustic lime, which is not in a state of combination in cement, saponifies the oil used in painting.” To obviate this, fresh white cheese and fresh slaked fat lime are added to the desired colour. This solu-

tion hardens rapidly, and is insoluble in water, a formation of albuminate of lime taking place. The proportions are three of cheese and one of lime, well mixed with the colour.

After an unusually complete and interesting account of the materials and methods of Gesso work, in which connection Mr. Millar goes to the MS. of Cennino Cennini, we are initiated into the mysteries of scagliola, a preparation which the author delights to honour, and desires to see revived. This is said to have been invented in the early part



A PIECE OF PRIMATICCIO'S WORK, GALLERY OF FRANÇOIS I. AT FONTAINEBLEAU.

vived and triumphed over the mishaps which have waylaid his great project.

The whole volume is carefully illustrated, and there is much of very real and practical value and suggestive help to the practising architect, in the illustrations and text, for both in description and direction the author goes fully into detail. A prefatory note comes from the pen of the late Mr. G. T. Robinson, F.S.A., who also contributes a most interesting introductory chapter to “Plastering, Plain and Decorative,” headed

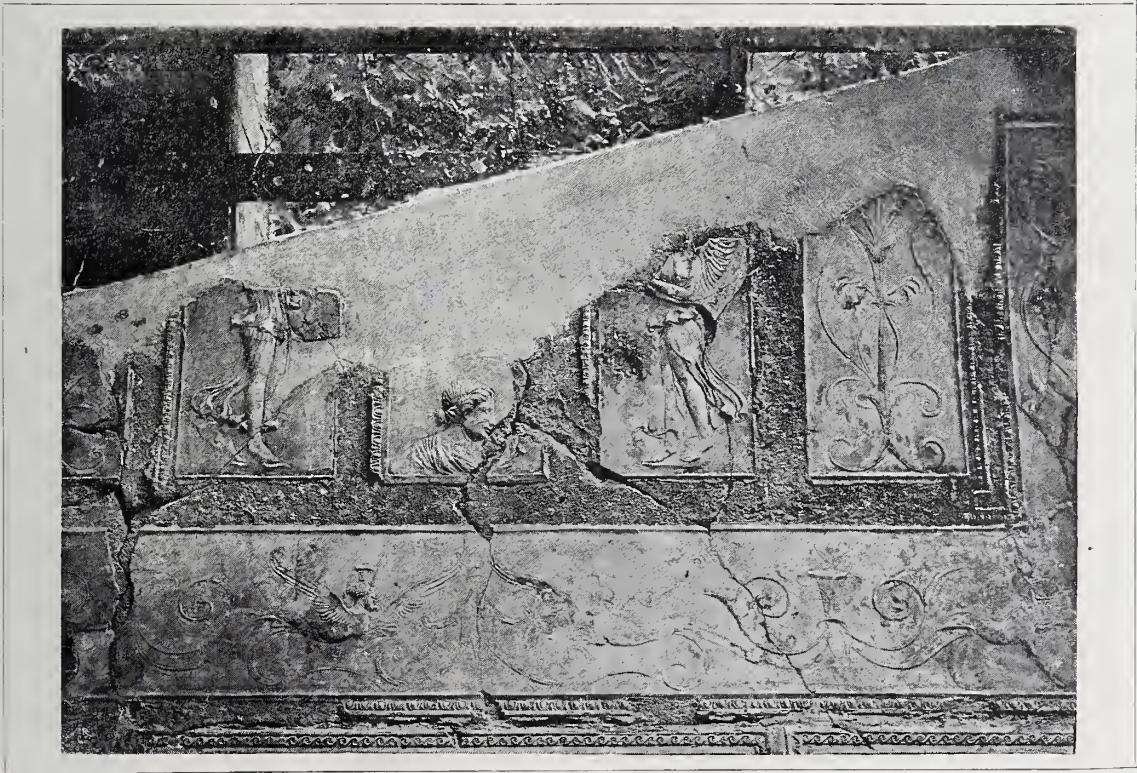
of the sixteenth century by Guido Sassi, of Cari in Lombardy; but it is more probable that he received an ancient process.

The use of coloured plaster for imitating marbles was known to the ancients, although the pure white, or *marmoratum opus* and *albarium opus*, mentioned by Pliny, was more used. Mr. Wilson, in the *Edinburgh New Phil. Journal*, 1841, writes: "Plastering is now carried to great perfection in Italy. The rooms are so finished that no additional work in the shape of house-painting is required, the polish of the plaster and its evenness of tint rivalling porcelain. Scagliola is the material chiefly used. At times the surface of the plaster is fluted, or various designs are executed in intaglio upon it in the most beautiful manner."

be formed of the splendour of this gorgeous apartment by conceiving a room fifty feet square with the walls, galleries, and columns rising with a richly coloured and highly polished surface.

About sixty years ago scagliola wares were sold in auction rooms, which brought the true scagliola into disrepute, and drove it from the market. Mr. Millar goes minutely into its manufacture, and there is not a marble he cannot produce to order.

Our author is the most versatile of craftsmen. During the *Belt and Lawes furore* he was engaged giving entertainments at the Theatre Royal,



STUCCO, PRESUMABLY OF THE FIRST CENTURY, FOUND NEAR THE VILLA FARNESINA, ROME, IN 1879.

Many notable buildings contain interesting specimens of scagliola: the Reform Club, St. Mary's, Islington, St. Pancras Church, St. Philip's, Regent Street, Northumberland House (now the site of the Grand Hotel), and the Albert Hall. It was used on the grand staircase at Buckingham Palace, and a range of columns in the Throne Room, some a bright scarlet, and others a rich blue in imitation of lapis lazuli.

The Duke of Sutherland's town house, originally built for the Duke of York, is rich in scagliola. The staircase walls are in giallo antique, the architraves and fluted columns supporting the roof are in granite, and the balustrade richly moulded in brocatello. Some slight idea may

Bradford, "modelling busts of the Prince of Wales, and sometimes men selected from the audience, *à la Belt*." The whole method of architectural model making is described, and the representation of varied materials by means of sand and marble dust, to say nothing of casting the parts repeated. Mr. Millar thinks that all this, if definitely designed, might enable the architect to avoid "extras and subsequent reeriminations." One rather questions that suggestion.

Although the ancient examples are selected with discrimination, the volume is somewhat marred by the introduction of questionable modern specimens; a fact which makes one apprehensive



STUCCO CEILING AND WALL DECORATION, PALAZZO D'ALBRIZZA, VENICE, BY A. VITTORIO, 1560. (By permission of the Publisher.)

of its influence on the unsophisticated apprentice, whom we wish to see free from the taint of such inartistic abominations. These would haunt the memory of any young student. But where Mr. Millar keeps within the province he has so ably explored—viz. that of method—we have nothing but admiration for the thoroughness of his research.

This encyclopædic work is one for reference. To the apprentice it will prove indispensable; and a study of the past methods Mr. Millar describes will go a long way to improving craftsmanship and reviving a wellnigh lost art. For the directions relating to materials, setting out of work, and other important matters, the young architect will always be grateful to the author.

WILLIAM A. PITE.

(167)

INDIAN ARCHÆOLOGICAL SURVEY.

On the Muhammadan Architecture of Bharoch, Cambay, Dholka, Champanir, and Mahmudabad in Gujarat. By Jas. Burgess, C.I.E., LL.D., F.R.S.E., &c. Fo. Lond. and Calcutta. 1896.

This work consists of seventy-seven plates and forty-seven pages of letterpress; the preface intimates that it is the smaller of two volumes; the larger one, which is still in preparation, will deal almost exclusively with Ahmadâbâd, the capital of Gujarat. The two volumes when completed are intended to give a fairly comprehensive view of the Muslim architecture of the district.

Lately, in noticing Mr. Cave's work, *The Ruined Cities of Ceylon*,* I chanced to remark that if Mr. Smither's plans and sections could have been combined with the photographic reproductions, the two together would have formed a nearly perfect work on the subject. It is this happy union which we have in the volume now under consideration; and we can here study the remains almost as well as if we were on the spot. Photographs of each monument are given, from which the present condition of the structure may be seen, and the exact character of every detail in the ornamentation may be realised. Plans and sections show the arrangement as well as the constructive features; to these are added drawings of parts of importance, such as the beautiful designs of roofs, which form a special characteristic of the architecture of this part of India. This smaller volume only whets the appetite for the larger one that is promised on Ahmadâbâd.

The first chapter is devoted by Dr. Burgess to a very careful historical notice of Gujarat; and after reading in it the seemingly constant state of fighting that went on—murders, revolts, wars, and sieges, with the consequent destruction of towns and monuments—the marvel is that any architectural works could have been produced, or that any of them could now be found existing.

When the Emperor Jahângîr made a state visit to Gujarat in time of peace, on arriving at Ahmadâbâd, the capital, he ordered the buildings erected by his father, "such at least as in my eyes appeared unworthy of his memory, to be demolished;" destruction, however, was not his object, for he adds that he caused "others of greater magnificence to be erected in their stead."* If Jahângîr had tried to improve upon any of Akbar's structures in the North-West of India, the result might have been doubtful; for it was in his reign that the first incipient signs appeared of the decadence that finally ruined the Muhammadan architecture in that quarter. In Gujarat the style was different from that of Delhi and Agra, and the influences affecting it also varied; still Dr. Burgess states in the preface that it was in the seventeenth century that the decay also began there.

It is only in name that this particular architecture of Gujarat is called "Muhammadan;" in reality it is almost wholly Hindu or Jaina. We have this so very clearly defined by Fergusson that his words are worth quoting:—"Even the mosques are Hindu, or rather Jaina, in every detail; only here and there an arch is inserted, not because it was wanted constructively, but because it was a symbol of the faith, while in their tombs and palaces even this is generally wanting. The truth of the matter is, the Mahomedans had forced themselves upon the most civilised and most essentially building race at that time in India, and the Chalukyas conquered their conquerors, and forced them to adopt forms and ornaments which were superior to any the invaders knew or could have introduced."† In Western India the Muhammadans began as they did on their first arrival in India at other places; they utilised the materials of the existing Hindu or Jaina temples, of which there are two well-known examples; one at the Kutub in old Delhi, and the other being the "Arhai din ka Jhompra" at Ajmere.‡ In the Jami Masjid of Baroch, from the

* *Memoirs of the Emperor Jahangueir, written by himself.* Price's Translation, p. 117.

† *Indian and Eastern Architecture*, p. 527.

‡ Mr. W. Crook, in his lately published work on *The North-Western Provinces of India*, gives a list of places where Hindu temples have been converted into mosques. He writes:—"Thus Altamsh built the mosque at Budaun on the ruins of a Saiva shrine. The mosque at Amroha has still the old Hindu chain hanging from its roof, that at Hathgaon in Fatehpur has been built out of the ruins of four Hindu temples, and the same is the case with Mandâwar in Bijnor, Matâban and Nol Jhil in Mathura, Etâwah, Ajudhya, and many other places. In fact, when we remember that to the early Musalmâns the destruction of a Hindu shrine furnished the destroyer with a ready means of building a house for himself on earth as well as in heaven, it is wonderful that so many temples should have survived to our day" [p. 84]. One of the "Sayings" of the Prophet was:—"For him who builds a mosque for Allah, Allah will build a house in Paradise."—W. S.

large photographic reproduction of its interior given by Dr. Burgess, it is evident that the beautiful columns, with elaborate bracket capitals, are the spoil taken from an older temple; it is the same with the Tanka Masjid at Dholka, where human figures in the ornament still remain. The doorway of the same Masjid is covered with figures, and in the small niche above the door, the figure of Ganesa, the Hindu god of the door, can still be traced. A very slight amount of observation at old Delhi is sufficient to discover that when the Muslim conquerors first occupied the place and began building, they had neither architects nor artists with them of a professional character to undertake the construction of mosques or tombs; they were only an army of rude soldiers, and consequently had to employ native talent. The same conditions, it would appear, existed in Western India—the native architects and workmen were employed. It was only the plan of the Muhammadan place of worship that had to be changed. The overthrown temples supplied sufficient materials at first. Elaborately sculptured columns, capitals, and lintels existed, and had only to be erected again to suit the new arrangement. If a few new stones were required, the native workman carved them like the others he had been accustomed to produce. It can be seen in some instances that uncarved stones had been merely blocked out and inserted to raise pillars to the required height. If, at a later date, any of the Muslims had learned to become builders, the Hindus were their teachers, and they merely carried on the old manner of working; they repeated the old Hindu ornament, which may be seen in every mosque. Domes may be more plentiful in these mosques than they were in Hindu or even in Jaina temples, but they are not constructed on the arch principle—they are all on the Hindu, or horizontal, manner of construction. The elaborate designs for roofs, or ceiling panels, are illustrated in this book with many very beautiful examples; but these again are all peculiar to the pre-Muhammadan architecture of the locality.

From these statements it will be understood that although this architecture must be called "Muhammadan," for the purpose of classification, it is essentially Hindu, or Jaina, for Jainism was particularly strong in that part of Western India. The Muhammadan style of Delhi and Agra acquired a character that was perhaps more Saracenic* than it appears to have reached in Gujarat. As Delhi became the capital of India under the

* The architectural features that the Muhammadans brought from Central Asia might be more appropriately termed "Sassanian" than "Saracenic." Some evidence for this will be found in a Paper of mine on *Origin and Mutation in Indian and Eastern Architecture*, read before the Institute in April 1891. See *JOURNAL*, Vol. VII. N.S., p. 245, 258-60, where it is shown that the Muhammadan domes were derived from Sassanian models.—W. S.

Muslim rule, it may have attracted from Ghazni or Khorassan men of sufficient ability to control and change to a certain extent the methods of the native artists who were at first employed. That there were Muhammadan architects in Gujarat, Dr. Burgess produces evidence from a tablet in an old mosque at Cambay; this refers to the fourteenth century. As the inscription indicates that architects were held in considerable respect, it may be worth repeating here:—

In the reign of [this] Sultán, Zafar Khán Gustari the architect

Built this mosque upright like royalty [*sultani*];
And in the year seven hundred seventy-five from the Hijrah of Muhammad.*

The mosque has been repaired for the worship of God.
May God have mercy upon the worshippers who in this mosque

Utter from soul and heart a prayer for the architect †
[p. 29].

For those who are interested in this particular style of architecture they may consult the volume itself for further details, which may be found in the numerous and well reproduced plates.

There are two subjects touched upon that have a more general interest than that of the main character of the book. These are the small tank or supply of water to be found in every mosque, and the origin of the *Mihrab*. The water is for religious ablutions, performed on entering the mosque for worship. These washings are called *Wuzú*. In a footnote Dr. Burgess explains them—that they "consist of cleaning the teeth, washing the hands, rinsing the mouth and nostrils, throwing water on the forehead, and washing the face and feet—all three times" [p. 26]. This is supposed to have been derived from the cistern or *cantharus* in the *atrium* of the early Christian basilicas of the East. This may be so, but Muhammadans are more likely to have copied the custom from the *Zem-zem* well at the Kaabah, where every Hadji washes away his sins. Bodily purification in connection with worship or important religious rites was common to all ancient systems; the *laver* before the Tabernacle and the Temple being well-known instances.

The *Mihrab* of a mosque is a niche in the wall indicating the direction of prayer towards Makah; it is simply a miniature apse, and Dr. Burgess accepts the theory that it was "copied or adapted by the early Musalmáns from the Christian Churches which they first seized and used as places of worship" [p. 26]. This seems so probable that it became my own conclusion long ago, and I can scarcely say that I have yet rejected the idea; but there appear to be grounds at least not to assume perfect certainty on the subject. In Ali Bey's plan of the Kaabah at Makah, a semicircular wall

* 1397 A.D.

† This is taken from the *Qanun-i-Islám*, pp. 72, 73.—W. S.

of a few feet in height is represented at one end of the building; within this there are two tombs, said to be those of Hagar and Ismail. Burton states that, according to one tradition, the space, which is called the *Hatym*, enclosed by this wall was formerly a part of the Kaabah, and that prayers said in it have as much virtue as if uttered within the Kaabah itself.

Now if this wall was at one time built on its present plan, for which, unfortunately, there is as yet no evidence, as a part of the Kaabah, it must have formed a perfect apse. It is to be regretted that there is so much uncertainty existing about the *Hatym*; all that can be said is, that if there had been an apse at the central shrine in Makah, it would throw a doubt upon the theory that the *Mihrab* was copied from the Christian Church.*

WILLIAM SIMPSON.

(168)

THE BRITISH SCHOOL AT ATHENS.

The Annual of the British School at Athens, Session 1895-96. Ato. Lond. [Messrs. Macmillan & Co., 29, Bedford Street, Covent Garden.]

The Annual of the British Archæological School at Athens for the Session 1895-96 is the second publication of a series which it is hoped will be continued every year. It is intended primarily to show the subscribers to the School what is being done by the students in Greece. In this number the Report of the Committee shows that the School has not been idle, and that the students, numbering in that Session six regular students and three Associates, have made good use of their term of residence and study.

The most important part of their work—namely, the studies of the place and its valuable museums, with the help and advice of the Director—cannot of course afford material for such a publication as the Annual. What it is particularly intended to receive are short articles, especially from the students, whilst more detailed and elaborate communications will be offered as heretofore to the journal published by the Hellenic Society. These short articles are drawn from their proceedings in the line of research, which is followed concurrently with the studies at Athens by means of excavations undertaken by the School at such sites as may be chosen by the Committee, and with the permission of local authorities.

After a preliminary statement of the personal and financial position of the School, the Annual

* This is a digression from the Muhammadan architecture of Gujarat, but it is of some importance and worthy of attention. Mr. Butler, in his *Ancient Coptic Churches of Egypt*, refers to niches as being a peculiarity in most of the apses of these old churches, and mentions their resemblance to *Mihrabs*, but only says that it is a "striking coincidence." The origin of the apse in Christian Churches is one of the main points dealt with by Professor Baldwin Brown in his *From Schola to Cathedral*; perhaps he could throw some light on this subject.—W. S.

gives a short account, by Mr. Cecil Smith, the Director, of all the year's doings in Greece in pursuit of archæology; a pursuit which has been said by Sir John Evans, in his brilliant Presidential Address to the British Association this year at Toronto, to have taken its place among the exact sciences. This account begins with the very remarkable discoveries made at Athens by the German School, under the direction of Dr. Dörpfeld, of the great water supply system of ancient Athens; important both as a valuable topographical link, and not less so in showing the perfection to which hydraulic engineering had arrived even so early as the time of Pisistratus. It is then recorded that Mr. E. Andrews, of the American School, had very satisfactorily deciphered an inscription which had once extended along the east front of the Parthenon by a careful examination of the traces of the nails which had served to attach the bronze letters forming the inscription. Mr. Andrews's achievement was admirable, but the inscription itself turned out to be of very moderate interest, and related to the emperor Nero.* At Mycenæ the Greek Ephor, K. Tsountas, has discovered a large domical tomb of the same character as the so-called Treasury of Atreus. The important discoveries at Delphi by the French School are alluded to, but have not yet been published in detail. The American School has undertaken some important excavations at Corinth; but to produce any adequate result must be the work of several years.

The British School had not been idle. An excavation at Athens itself, under the superintendence of Mr. Cecil Smith, and with the assistance of the students, appears to have established the position of the classical gymnasium called *Kynosarges* on a site far removed from the hitherto generally received theory. The grounds upon which Mr. Smith establishes its identity with the walls he has excavated are both ingenious and convincing. The chief efforts of the British School in the way of excavation were, however, displayed in the island of Melos, and this work is still in progress. The results recorded are not as yet very considerable, but are still of sufficient importance to justify their continuance. An ancient fortified gate and a remarkably fine mosaic pavement of the Græco-Roman period were the chief discoveries in the ancient capital. The site of an archaic city in another part of the island was subsequently tried, and promised interesting results, but its fuller examination was reserved for another season.

An article by Professor J. B. Bury, Associate of the School, follows that of the Director. It is on the campaign of Artemisium and Thermopylæ against the Persians. In this Professor Bury undertakes, from local and general considerations,

* A careful reduction of a portion of these traces is given in *Athenian Architecture*, Plate 22.

to correct very largely the record of Herodotus, which was compiled a good many years after the event, Herodotus being only about four years old when the battle was fought. Another Associate of the School, the Rev. A. H. Cruikshank, follows with an account of a journey to the famous mountainous monasteries of Meteora, an article well illustrated by photographs. A visit to Cyrene, contributed by Mr. Herbert Weld-Blundell, whose co-operation with the School is mentioned in the Director's report, comes next. The remains, which are very extensive, are well described and illustrated; particularly in respect to the rock-tombs, which seem to have much affinity with Egyptian tomb architecture, but at the same time have a strong Greek bias. The Greek colony by which Cyrene is said to have been founded came from the island of Thera about 631 B.C. The principal temple appears to have had the widespread echinus of the early Sicilian type of Doric. Some of the tombs exhibit Ionic capitals of an archaic form which may well have been contemporary. In the case of tomb architecture, however, the evidence of date derived from their form and fashion is not quite so clear as in that of a public building like a temple. In this sketch of Cyrene the reader will not fail to be struck with the enormous mass of available material whenever there may be a favourable opportunity for systematic examination.

The article on the prehistoric graves in Syra, by R. C. Bosanquet, student—a most energetic worker on behalf of the School—shows that in that island a number of graves were found in which the body was not stretched out at length, but was left in a crouching attitude, more nearly in a sitting posture, and similar to certain graves found by K. Tsountas near Mycenæ, and also by Professor Petrie in Egypt, and by the late Mr. Theodore Bent in the island of Antiparos. Professor Petrie has called these the tombs of the *New Race*. In some of these the bodies must have been cut into pieces before burial.

There is a very interesting article by H. M. Fletcher and S. D. Kitson, architects (whose assistance to the School operations is recorded by the Director), on the domed churches of Melos, of which there are a considerable number in the island.

The chief interest attaches to an ancient church dedicated to Christos at Kepos, near the southern coast of the island. Although we may admit that the great achievement of Anthemius in St. Sophia may not have been the earliest adaptation of the Roman cupola to ecclesiastical architecture, yet it must have set the example to the whole of the Eastern Empire, and this archaic example would seem to have been one of its first followers. It cannot indeed compare with its prototype in scale, the diameter of the dome at Constantinople being 107 ft., and that at Kepos only 10 ft. A contiguous but later church in the same style has a

font of very peculiar shape, cruciform on plan, and several others of the same character are mentioned. The simple form of the churches described in this article is well worthy of the attention of the architect.

The Annual ends with an excellent topographical study by Mr. Arthur Evans, Associate of the School, on the city of Zeus in Crete, containing the plan of part of an ancient dwelling-house which had evidently been occupied by some eminent inhabitant of the town, and recalls some of the characteristics of the archaic palaces at Tiryns, Mycenæ, and Troy.

F. C. PENROSE.

MINUTES. I.

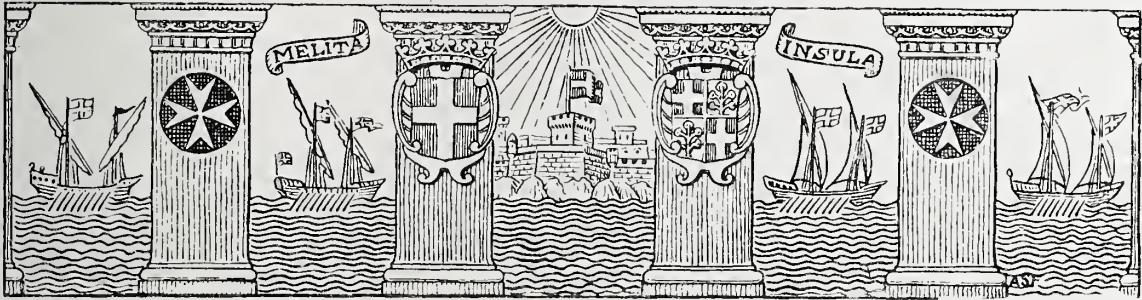
At the First General Meeting (Ordinary) of the Session 1897-98, held Monday, 1st November 1897, at 8 p.m., Professor Aitchison, A.R.A., *President*, in the Chair, the Minutes of the Special General Meeting held 12th July 1897 [Vol. IV. p. 428] were taken as read and signed as correct.

The following Hon. Associate, attending for the first time since his election, was formally admitted and signed the Register—viz. James Lewis Thomas.

The President expressed the gratification of the Institute that one of the few distinctions accorded the architectural profession should have been conferred upon a member of their own body, Sir John Taylor [F.], who in the recent Jubilee distribution of honours had been made a K.C.B.

The following candidates for membership, found by the Council to be eligible and qualified according to the Charter and By-laws, and admitted by them to candidature, were recommended for election, namely:—As FELLOW, John James Burnet [A.], A.R.S.A., President of the Glasgow Institute of Architects (Glasgow). As ASSOCIATES, George Hastwell Grayson, B.A. Cantab. (*Probationer* 1893, *Student* 1894, *Qualified* 1896) (Liverpool); Charles Dixon Rochester (*Probationer* 1890, *Student* 1893, *Qualified* 1897) (Manchester); Arthur Joseph Singleton Shaw (*Probationer* 1891, *Student* 1893, *Qualified* 1897) (Oldham); Osgood Smith (*Probationer* 1890, *Student* 1893, *Qualified* 1897); Percy William Meredith (*Probationer* 1890, *Student* 1893, *Qualified* 1897); Harold Conybeare Trimmell (*Probationer* 1892, *Student* 1894, *Qualified* 1897); Richard Henry Ernest Hill (*Probationer* 1890, *Student* 1894, *Qualified* 1897); Percy Morris (*Probationer* 1892, *Student* 1894, *Cates Prizeman* 1897, *Qualified* 1897) (Lewes); George William Hatcher (*Qualified* 1897); Ernest William Marshall (*Probationer* 1895, *Student* 1895, *Qualified* 1897); Herbert Cyril Sinnott (*Probationer* 1890, *Student* 1893, *Qualified* 1897) (Bristol); James Henry Coram (*Probationer* 1894, *Student* 1895, *Qualified* 1897); William Stanley Bates (*Probationer* 1894, *Student* 1895, *Qualified* 1897); Samuel Sebastian Reay (*Qualified* 1897) (Bath); James Richard Fleming (*Qualified* 1897). As HON. CORR. MEMBERS, Conde De San Januario, President of the Royal Association of Portuguese Architects (Lisbon); Johan Louis Ussing, Professor at the University of Copenhagen; Settimio Fedele Gerardo Giampietri, Cavaliere of the Crown of Italy (Rome); Arnaldo Rodondo Adaes Bermudes (Lisbon).

The Opening Address of the Session having been delivered by the President, a Vote of Thanks, moved by Mr. H. Heathcote Statham [F.], and seconded by Dr. Murray [H.A.], F.S.A., was passed by acclamation, and, having been briefly acknowledged, the proceedings closed, and the Meeting separated at 9.15 p.m.



Arthur S. Flower inv. & del

NOTES ON RENAISSANCE ARCHITECTURE IN MALTA,
WITH SPECIAL REFERENCE TO THE BUILDINGS OF THE ORDER OF ST. JOHN.

By ARTHUR S. FLOWER [A.], M.A.Oxon., F.S.A.

Read at the General Meeting of the Royal Institute of British Architects, 15th November 1897.

TO a great many Englishmen the name of Malta appears to call up but a single idea. We think of a dot upon the map of Europe, which represents, we know, a very important naval and military station, and are apt to suppose that the whole interest of this insignificant-looking place is wrapped up in its strategic value. Malta and Gibraltar are constantly referred to as British possessions of practically similar character, except that, if comparisons are ever made, they are usually in favour of "The Rock." The latter is certainly for the average Englishman a less uncongenial place of residence; and it is easy enough to understand the unfavourable opinions of Malta commonly expressed by military men, who feel, of course, that their lot might easily be cast amid more desirable surroundings. But it is extremely curious to notice how the bad impression thus derived, and augmented by certain well-known lines of Byron, has extended to all classes of English people. There is a very general notion that Malta is a place altogether uninviting, whither no one uncompelled by either duty or business could think of going for any length of time; even well-informed persons will declare that it merits nothing further than the half-day's visit sometimes accorded by travellers to or from the East, who think they have "done" the whole island in a scamper ashore from the mail steamer. By most architectural writers, even when treating of the buildings of the whole world, the very existence of Malta has been ignored. One may search through nearly every general history of architecture without finding so much as a hint given that this little island contains any buildings worthy of notice. By way of exception, it must, of course, be mentioned that Fergusson, in the Introduction to his *History of Modern Architecture*, describes *one* Maltese building—of quite recent erection, and probably the ugliest in the whole island—but no others find any place in his work; also that under the heading "Valletta," in the *Dictionary of Architecture*, some information, mainly statistical, is given; but these seem to exhaust the list of references in English architectural books.

As a matter of fact, to couple Gibraltar and Malta together as exactly similar places, because they are both fortresses in the Mediterranean Sea, is much as if one were to liken Reading to Oxford, because both happen to be garrison towns situated upon the banks of the Thames. The resemblance in either case ceases when we come to considerations of artistic interest, and, small as Malta is, it has many claims upon the attention of architects. This tiny island teems with huge buildings, the produce of many centuries of activity and ambition. There is no trace of littleness about the churches, the palaces, the castles of Malta; there belongs, furthermore, to most of them a certain character, unusual, striking, commanding

—if not exactly captivating—which renders this out-of-the-way corner, to my mind, one of the most interesting parts of Europe. In justification of this perhaps over-bold statement, two reasons, at least, may be adduced. In the first place, Malta, like Constantinople, has been since the beginning of history a meeting-place of many nations and races, and thus, in a metaphorical sense, a very rich soil, fertile in diversified and luxuriant architectural

growths. Secondly, it has the unique peculiarity of actually being, in the most strict and literal sense, one solid block of almost perfect building stone. The island might justly be described as a mason's earthly paradise, and of its inhabitants a large proportion seem to be born masons.

Malta is principally composed of a limestone most easily worked, and yet, in its own climate at all events, of immense durability. This by itself, apart from the special features of Maltese history, has naturally been a great factor in architectural development. Just as in our own fields a bank may be thrown up with the earth dug from the corresponding ditch, so in Malta a house may be built almost anywhere with the stone cut out from its own cellars, a fortress from its own moats, a cathedral from its crypts. The tractability of this stone is extraordinary: it almost looks as if it could be shaped with a brush and comb—at any rate the mason seems to require little beyond a small axe. He, moreover, by virtue, I suppose, of hereditary instinct, does most of his work solely by eye, and seems to revel in ornamental details, boldly conceived and dashingy carried out. I have been several times



FIG. 1.—THE CATHEDRAL, VALLETTA: WEST FRONT. 1573-78.

assured, on credible authority, that, even down to our own days, the custom in Malta as regards masonry has been that carved work, however elaborate and varied, was never reckoned or separately charged for in building contracts, but thrown in as a matter of course, and rather by way of pleasure to the workmen. For instance, as it was once explained to me, if, instead of a uniform row of plain corbels under your balcony, you suggested that you would like to have them diversified with scrolls, foliage, lions' heads, or even coats-of-arms, the mason would take it as a compliment to his own skill and taste which he could not have the impoliteness to

expect you to pay for. And yet this Maltese stone, so fascinating to handle, weathers, as a rule, so excellently that three or four centuries seem to make no damaging impression upon the fine-wrought ashlar with which every building, great or small, is clothed. External plaster or cement is nowhere to be seen in Malta, except as a covering to flat roofs; nor paint, except on wood—a material used very sparingly. The contrast in this respect with many Italian cities is most striking; the latter, with their cracking stucco, stained and patched, look positively mean and flimsy on passing from a land where everything has such an air of rock-like stability. What looks to an Englishman at first sight an extravagant use of stone is noticeable all over the island, even among the fields. If a peasant wants to rig



FIG. 2.—THE CATHEDRAL, VALLETTA: INTERIOR.

up a pulley for a well-bucket, instead of putting up a couple of posts, he builds something like a triumphal arch; the simple reason being that big blocks of stone are much more easily got than any sort of timber, and every one is perforce more or less of a mason. Buildings in course of construction may be seen surrounded, in place of scaffold-poles, by temporary but substantial piers of dry-jointed masonry carried up in a tapering form to considerable heights.

No higher testimony could be given to the intrinsic beauty and interest of the buildings of Malta than the enthusiasm they called forth from such a cultivated and critical mind as that of Dr. Church, the late Dean of St. Paul's. His impressions are given in some of his letters, published two years ago. Visiting Malta, accidentally as it were, in the course of a voyage to Greece, he frankly confesses his astonishment at finding so much to admire; and I

doubt if a more vivid or more truthful description could be given both of the first view of the capital, Valletta, and of the general aspect of the interior of the island :—

This is a most wonderful and beautiful place, quite the perfection of street architecture. The first thought that strikes one is that the whole town must have been built yesterday ; it looks as if only just out of the stone-masons' hands. Fancy the richest and warmest freestone (much warmer and richer than even the Bolsover stone)



FIG. 3.—THE CATHEDRAL, VALLETTA : ST. JAMES'S CHAPEL.

employed with the greatest profusion, and cut into the most picturesque doorways, windows, galleries, and balconies, and set off with green wood-work in the balconies—streets of this stone seen from end to end, looking like streets of palaces for size and ornament, and seen in all kinds of curious perspective from the varied rise and fall of the ground ; and, further, these magnificent streets are the cleanest I ever saw. As a city, taking it as a whole, and seen by walking through its streets, I have never seen anything which struck me so much. . . . Then the separate *au-berges* of the different nations or "languages" of the Order are as grand as they can be, all of the sixteenth century : a rich and somewhat heavy and barbaric Italian or Palladian, but of very noble proportions.

The great church here, St. John's, the chapel of the Grand Master, and now called the Cathedral, is in the same style, heavy Italian piers and arches, and waggon vault ; but the pillars are cased with verde antico or with richly carved and gilded woodwork, and the floor is made up of the gravestones of the knights, all of the richest mosaic, and the roof painted in fresco. Valletta is quite worth a voyage to see. I had no idea that it was such a sight in itself.

Then there is the magnificent harbour and fortifications. . . . I only write to say how much I am delighted with Malta.

Ten days later Dean Church writes again :—

I still think Valletta one of the most striking specimens of architecture I have ever seen. . . . If ever you come travelling to Italy, don't miss Malta if you can help it.

Outside Valletta the country looks as if the people spent their time in nothing but building big stone walls across their land. But, in spite of this extremely unpromising similitude, it is anything but commonplace or uninteresting. It is in reality made a great deal of, these walls being a sort of buttresses to prevent the light soil being washed away by the rains ; and the narrow fields are now brilliantly green between their dreary grey boundaries, with wheat, barley,

and clover. The trees are very few: scattered, black, shrubby carobas (or locust-bean) are the most numerous over the fields; fig-trees, and here and there a single palm; and in one direction an olive plantation, in another a garden with dark Turkish-looking cypresses. . . . And the oriental look is increased by a number of square flat-roofed buildings, with few windows, either cottages or cattle sheds. The whole of the country round Valletta is densely populated—the people collected in large villages, or *casals*—so large that they look at a distance like great towns, most of them containing some striking-looking houses in narrow, winding lanes, and all of them a fine Italian church with its piazza, and its towers and central dome, whose outlines quite crowd the horizon, and stand out most picturesquely along the line of hills which inclose Valletta. On one of the highest points stands the old capital, Città Vecchia, fortified and looking down from a precipitous ridge over plain and sea, and crowned by a grand church.

In this graphic account of the salient features of Malta, it may be noticed that mention has been made of a third element, which contributes largely to the special peculiarities of



FIG. 4.—AUBERGE DE CASTILLE, VALLETTA.

Maltese architecture. Besides the ethnological and geological conditions, which in themselves make for an exceptional architectural development, there has been a politico-religious influence at work—that of “The Order.” What is this “Order” which has so impressed its seal upon Malta that, although it has been banished for a hundred years, one cannot go anywhere about the island without being reminded of it at every step? It is, I need hardly say, the semi-monastic, semi-military brotherhood of the Knights Hospitallers, or Knights of St. John of Jerusalem, without whose temporary occupation of Malta the greater part of its architectural splendours would never have come into existence. There are, it is true, many relics of former rulers of the island still remaining, but mostly of a sort belonging more to the province of archæology than of architecture. Much might be said about the so-called “Phœnician” remains, rude stone monuments still in fair preservation; of the many fragments of Greek and Roman structures; of the still more important and beautiful evidences of Sicilian-Norman influence. But though all these may be hunted up and discussed by those zealous for the pursuit, they contribute very little to the extant architecture of Malta, which is quite sufficient

by itself to occupy us for a considerable time, and has perhaps received less attention. This later architecture—to which I propose to confine these “Notes”—buildings still in regular occupation and use, is all practically of one character, most conveniently described as “Renaissance,” and all the principal examples of it were erected within a space of two hundred years, during the palmy days of the Order. To be more precise, it may be said that the great building era extends from the last quarter of the sixteenth century to the first quarter of the eighteenth. During this comparatively short period an extraordinary series of public works were carried out, on such a scale of magnitude and solidity as to give the impression that, however circumstances may alter and particular methods of use be changed, Malta has been sumptuously endowed with buildings for almost every purpose to the end of time.

The greater number of the photographs now exhibited were collected with the idea of illustrating—as far as possible, but the collection is by no means complete—the architecture, religious, official, military, characterising the period during which Malta was the headquarters of the Knights of St. John. Some of these photographs may perhaps be more or less familiar, but others are from buildings of which little notice has been taken; while a good many of them represent subjects practically inaccessible to the ordinary photographer, as I owe them entirely to the kindness and interest in architectural matters shown by Colonel John R. Hogg, late Commanding Royal Engineer in Malta, under whose directions these views were specially taken by Corporal Meiklejohn, R.E. His work will, I think, compare favourably with that of most professional photographers. Before referring to these photographs separately, it may be worth while to refresh our memories, very briefly, as to the connection of the Order of St. John of Jerusalem with the island of Malta, so far as it may help to explain the circumstances in which these buildings were erected. In doing so, it is hardly necessary to say that for our main historical facts we have to rely upon that excellent and almost exhaustive work, General Porter’s *History of the Knights of Malta*.

The Order of St. John had its first beginnings in a small hospital for the relief of sick and poor pilgrims, established at Jerusalem by some Italian merchants about the year 1020, while the Holy Land still belonged to the Caliphs of Egypt. In connection with this several churches were founded, of which the principal was dedicated to St. John the Baptist, and gave the name by which the whole institution came to be known. When, some eighty years later, the Crusaders captured the city, and installed Godfrey de Bouillon as King of Jerusalem, the hospital was found to be doing such good work, particularly for the wounded men of the besiegers, that Godfrey showed his appreciation of its usefulness by the gift of a manor in Europe; an example which was followed by several of the other leaders. Crusaders who returned home carried reports which resulted in further donations, while a good many joined the brotherhood themselves. All this encouraged the rector of the hospital, Peter Gerard, to give it a more definite organisation; at his suggestion all the members, in addition to devoting their lives to the service of the sick and poor, took upon themselves the three monastic vows as belonging to a regularly constituted religious body, and the establishment of the new Order was sanctioned by a Bull of Pope Paschal II., in the year 1113. The distinctive habit of a plain black robe, having on the breast a white cross of eight points—famous afterwards as the Malta Cross—was adopted at this time. During the next few years branch hospitals, to assist the rapidly increasing number of pilgrims, were established, under the management of members of the Order, in most of the maritime towns of Europe. But the character of the society soon underwent a remarkable change. When Gerard died, Raymond du Puy, a nobleman of Dauphiné, was elected in his place. The new superior was not content with the peaceful duties of the Order, and the general body, mostly old Crusaders, who had been pleased enough for a time with monastic quiet, were beginning to get restless and to long to

join in the constant fighting with the Saracens in which the King of Jerusalem was engaged. So with general approval a new constitution was adopted, and a new vow added, by which the whole body bound themselves to support the Christian cause against the infidels to the last drop of their blood, though promising at the same time not to bear arms, on any pretence, for any object but the defence of their faith. Raymond thus became the first military Master of the Order, and led the Knights Hospitalers, as they now began to be called, into action for the first time at the relief of Antioch, in the year 1119. For seven hundred years onwards from this time the history of the Order is one continuous story of warfare, carried on with marvellous determination against one Moslem enemy after another, first by land and afterwards chiefly by sea. Brilliantly successful in their first engagement, as in many others which soon followed, the Hospitalers rapidly gained a reputation which brought them recruits from all parts of Europe; besides leading to a form of imitation too interesting to be quite passed over. A French knight, Hugh de Payens, collected at Jerusalem another

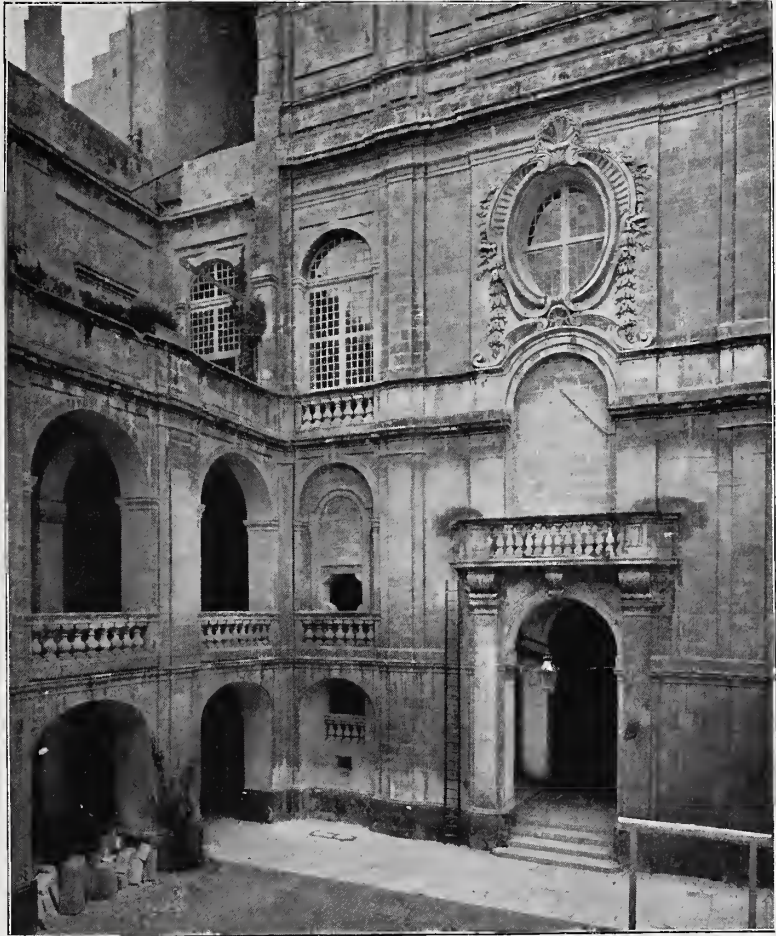


FIG. 5.—AUBERGE DE CASTILLE, VALLETTA : COURT.

fighting brotherhood, bound by the same monastic vows, but without any of the charitable duties which the Hospitalers still regularly performed. This likewise received Papal sanction, with a direction to wear a white mantle with a red cross, in contradistinction to the black mantle and white cross of the other Order. A portion of the palace, adjacent to Solomon's Temple, was assigned to the new fraternity, whence they became known as the Knights of the Temple, or, as they were afterwards called, the Templars. Founded almost at the same time, the two military Orders were perpetual and bitter rivals; but the career of the red-cross knights, although their name is more widely known, was in fact the less glorious, and within two centuries from its foundation the Order of the Temple came to a somewhat ignominious end, leaving that of the Hospital to carry on the defence of Christendom alone.

Time will not allow of tracing, even in outline, the wars and wanderings of the Hospitalers during the long period which elapsed before Malta became their headquarters;

we must pass on at once to this event, which happened in the year 1530. The group of Maltese islands were then little better than desolate, barren rocks, thinly inhabited by a poverty-stricken race of mixed, but mainly Arabic descent, and formed a valueless possession of the Spanish monarchy. The Knights of St. John had just been driven from Rhodes, their last stronghold in the East, by the Turks, after a memorable siege; with nothing left them but their ships, they were sailing hither and thither in search of a new home. Their chief desire was to obtain somewhere a good harbour, for they had come by this time to look upon naval enterprises as their regular occupation. According to modern ideas, it might be

said that they lived by piracy; though at all events they refrained from assaults upon their fellow-Christians, which was certainly not the custom among other sixteenth (and seventeenth) century navigators. As nothing more attractive could be acquired, L'Isle Adam, the Grand Master of the Order, obtained from the emperor Charles V. a grant of the Maltese islands, which were ceded to the Hospitallers in perpetual sovereignty. L'Isle Adam, the greatest man the Order ever produced, and one of the ablest commanders and diplomatists of his time in Europe, clearly foresaw the possibilities of Malta as a base for naval operations, poor, neglected, and undefended as the place then was. From the time of his landing there, in the year 1530, his efforts, and those of nearly all his successors for two centuries and a half after, were constantly directed to improving and strengthening the natural advantages of



FIG. 6.—AUBERGE D'ITALIE, VALLETTA.

the island. During the first few years of their occupation, the Knights, through poverty and the immediate prospect of Turkish attacks, were unable to undertake any kind of works but the most necessary fortifications; these, besides, had nearly all to be reconstructed after the great siege of 1565, so that we may take that date as marking the beginning of the

period with which we are concerned at present. This siege, the most striking event in the history of Malta, and one of the most heroic defences ever recorded, is hard to pass over

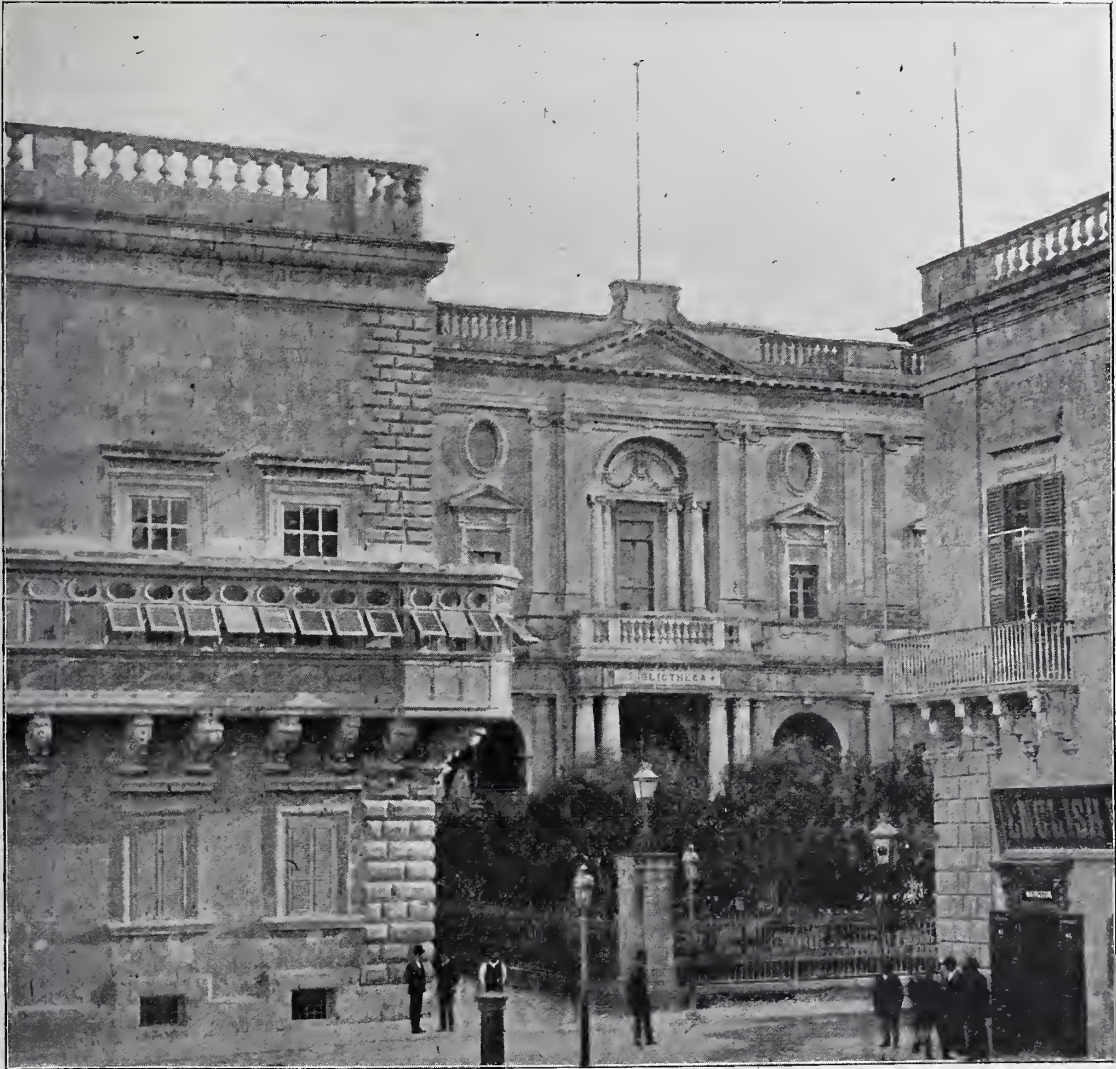


FIG. 7.—A CORNER OF THE PALACE, AND PUBLIC LIBRARY, VALLETTA.

entirely; but a curtailed account would be so unsatisfactory that it seems better to go on at once to the founding of Valletta, which followed immediately on the final repulse of the Turks.

The creation of Valletta, a city which suddenly sprang up on a very unpromising site, the summit of a steep bare ridge, never before occupied by buildings, was entirely the work of the Grand Master La Vallette, the hero of the great siege. Military considerations dictated both the position and dimensions of the town, and also the exceptional rapidity with which it was built. The ancient capital of Malta, Notabile, or Città Vecchia, as it came to be called after its supersession by Valletta, did not commend itself to the Knights, on account of its distance from the sea. Therefore at their first coming they had established themselves on the shore of the large inlet now called the Grand Harbour, but on the opposite side to where

Valletta now stands, strengthening a little town and fort already existing there. They had only been able, before the Turks came down upon them, to make one attempt at securing the other side of the harbour, by the construction of Fort St. Elmo. With the greatest difficulty they had just succeeded in holding their main position, although with tremendous losses, including that of St. Elmo with its whole garrison. The events of the siege had shown the defects of their present situation, as well as the vital importance of fortifying Mount Scerberras, the high peninsula between the two harbours, where the most formidable of the Turkish batteries had been planted. La Vallette adopted the bold idea of transferring the headquarters of the Order, occupying the entire peninsula with a new town, and surrounding it with such fortifications as should defy all attacks. Subscriptions were collected from all parts of Europe, both from the members of the Order and from the principal Roman Catholic sovereigns. The Pope sent not only a contribution in money, but his chief military engineer, Francesco Laparelli, who played an important part in the carrying out of the scheme: he stayed for upwards of four years in Malta, and all the original fortifications of Valletta are said to be of his design.

On the 28th March 1566 the first stone of the new city was laid, with abundant ceremony, at the corner of St. John's bastion; La Vallette forthwith took up his abode in a wooden hut in the midst of the works, where he continued directing them from day to day, up to his death in the summer of 1568. So far nothing had been actually built except the outer fortifications; but the new Grand Master, del Monte, began his term of office by announcing that no one should enjoy his favour who did not, to the best of his ability, promote the building of the city, in which he took as great an interest as La Vallette himself. In consequence probably of this, Eustachio del Monte, his nephew, began at once to build a house—the first in Valletta—in the centre of the high ground, on the place occupied by one of the Turkish batteries during the siege. Others soon followed, but the special interest of this house is that it formed the nucleus of the present Governor's Palace. In the next year, 1570, the fortifications being well advanced, Laparelli returned to Rome, and the designing of all the works, military, civil, and even ecclesiastical, undertaken by the Order, fell from that time into the hands of a very remarkable man, about whom it is a pity that so little appears to be known, Gerolamo Cassar. Probably the best account to give of him will be by quoting from a document among the registers of the Council of the Order, part of which is printed in an official publication of the Government of Malta. This paper bears the date of the 18th May 1581, and begins as follows: "The Grand Master, Jean Levesque de la Cassière certifies that Girolamo (*sic*) Cassar, of the Maltese nation, ordinary Architect and Engineer of the Order, during many years lent his services in the said capacity, from 1565 to 1581." After mentioning his services during the siege, it goes on: "Girolamo Cassar was one of the Engineers under whose direction Valletta was built. The designs for the seven Auberges of the Languages are his; and that of the Magisterial Palace; and the most remarkable of all his works, is the Church of St. John." A list of other buildings designed by Cassar follows, including, in Valletta, the churches of Sta. Caterina d'Italia, San Paolo Naufrago (since rebuilt), and monasteries and churches for the Augustinians (since rebuilt), Carmelites, Dominicans (since rebuilt), and Franciscans; outside, the Capuchin monastery (since altered and enlarged) at Floriana, and the fortress-palace called the Tower of Verdala. It is interesting to notice that Cassar was succeeded as Chief Engineer to the Order by his son, Vittorio Cassar, several of whose military works remain round the coast, though there never fell to him such grand opportunities as were enjoyed by his father.

The story of the building of Valletta may be completed in a few words. Del Monte was so eager to press on the work that on the 18th March 1571 he left the old head-

quarters of the Order, and made a formal entry into the unfinished city. Nothing had yet been done upon the site intended for the magisterial palace, but the house just built by Eustachio del Monte was purchased by the Order, and its enlargement begun, when, early in the next year, the Grand Master died. He was succeeded by La Cassière, a native of



FIG. 8.—CHAPEL IN FORT ST. ELMO, VALLETTA, BUILT 1583, RESTORED 1649.

Auvergne, to whom, although singularly unsuccessful in other affairs—his rule is described as “an era of turbulence and confusion from beginning to end,” and terminated in open mutiny—belongs the merit of having encouraged Cassar to his highest efforts, and of having carried to completion the finest of the architectural works which give to Malta its claim to distinction. La Cassière died in 1581, the year in which the record of Cassar’s principal

achievements was attested; and at this point it is time to leave historical matters, and turn to the consideration of the buildings themselves.

From an architectural point of view by far the most interesting building in Malta is the Church of St. John the Baptist at Valletta, formerly the particular church of the Knights of St. John. It is now styled "Co Cathedral," because of equal ecclesiastical rank with the Cathedral Church of The Conversion of St. Paul, at Notabile, or Città Vecchia, the ancient capital of the island; each having its own independent chapter, but containing each a throne for the same archbishop. For so large and massive a structure, this church took a remarkably short time to build; the foundations having been begun on the 22nd November 1573 the fabric was completed by July 1577, and the consecration ceremony took place on the 20th February 1578. As already mentioned, it was the work of one architect, Gerolamo Cassar, and of one Grand Master, La Cassiere, by whom the entire cost of its construction, as well as a large endowment for maintenance, was provided. Since that time St. John's has undergone no structural changes of importance: its interior has grown richer and richer in its furniture, its decoration, its monuments; but, on the whole, all these additions seem to harmonise wonderfully well with the original conception. The plan* of the building is somewhat peculiar, though extremely simple. The church itself consists only of a large nave, with side chapels—there is no structural choir—and two western towers; but the west (or, to be strictly accurate, south-west) façade is extended laterally on both sides by attached buildings in the same alignment and of equal height with the end of the actual nave, so that the plan becomes practically of the form of the letter T reversed. It is stated by Ferres in his *Chiese di Malta* that the church as first projected was to have been very much longer; that it was, in fact, intended to have had a structural choir considerably longer than the present ritual choir, so that the building would have extended on to the ground now occupied by the Public Library, and have been connected by a corridor with the Grand Master's Palace. But at all events this idea must have been very soon abandoned, for the church appears to have been finished off by its original builders in its present shape. The most striking thing about the nave is its enormous width—51 feet—which is made the more apparent by the barrel-vault which spans it being of the very moderate height of 64 feet 3 inches only. The total internal length, including the small apse at the eastern end, is about 189 feet, and the total internal width of the church itself, including the side chapels, but not the corridors outside them, is 118 feet. The form of the main vault, as regards its transverse section, will at once be noticed as unusual in a building of the date and style of this church. It is very perceptibly pointed, and what is, perhaps, still more curious, the same thing is to be found in the windows of the belfry stage of the towers. In both cases the departure from a semicircular shape must be due to a desire for greater stability, and shows that Cassar was to some extent unfettered by Italian precedents. Whether, however, the pointed vault of St. John's may be traced beyond this to the Maltese architect's previous acquaintance with Sicilian-Gothic work, of which a few good specimens still remain in Malta; or to the predominant Arabic strain in the blood of his nation; or, again, to suggestions from the Knights themselves, remembering the former buildings of the Order in Rhodes and Cyprus—all this is matter of conjecture, about which I will not attempt to theorise. It may be of some interest, though, to notice how nearly this vault resembles, in its curves, those slightly pointed vaults of the French-Romanesque builders, raised just enough to obviate the risk of sinking at the crown, which Viollet-Le-Duc supposes to have originated

* For the plan and section of St. John's Church, which I have made in illustration of this Paper, I am primarily indebted to some MS. drawings and notes given to me by the late Sir Ferdinand Ingloft, of Valletta: these have

been supplemented by additional particulars and corrections kindly supplied by Chevalier E. L. Galizia (F.), of Valletta, and to some extent by photographs and my own observations.—A. S. F.

the regular use of pointed-arch construction. Equally, perhaps even more noticeable, as an architectural singularity, is the fact that the vault springs straight from the architrave of the nave-arcade, without the intervention of any kind of frieze or cornice. The absence, however, of an internal cornice, utterly anomalous as it may be called, is, I venture to think, one of the principal elements which render St. John's Church so satisfactory in general effect. In the first place, it adds greatly to the impression of ample width. In the next, it allows the arches of the nave-arcade to appear of their due importance; and, finally, it does not abruptly check the eye before it reaches the vault, with the inevitable suggestion that a horizontal ceiling would be the only appropriate termination to such a projection. A shelf-like intermediate cornice is the



FIG. 9.—ST. HELENA GATE, COTNERA LINES (1675).



FIG. 10.—GATE OF FORT MANOEL (1726).

bane of almost every Renaissance interior, and St. John's is, perhaps, unique among large churches in being free from this deformity. That it is so is very probably due more to accident than to intention, though the accident was at any rate a happy one in its results. Two separate reasons to account for it have been given. In Ferres' book, before referred to, it is stated that, difficulties occurring because of the weight of the main vault, the design was considerably modified during execution. This is the prosaic mode of explanation. The other, a sort of legend current in Malta, which I have not seen in print, is to the effect that when Cassar had raised the walls of his nave as high as the architrave, some of the other military engineers—either really apprehensive or affecting to be so through jealousy—pointed out to the Council of the Order that if the new church were carried up much higher it would interfere with the clear range seaward of the guns of an important battery, St. James's Cavalier, situated just above. So Cassar, the story goes, was reminded how with the Knights of St. John thoughts of display must ever give place to the stern exigencies of perpetual

preparation for war, and was constrained to keep down his roof accordingly. It has never, so far as I know, been suggested that he might have been original enough and bold enough to make his building as we see it, simply because he liked to have it so; he could not, it seems to be thought, have been so daringly unconventional. Still there is enough about Cassar's



FIG. 11.—AN ECHAUGETTE, FIORENSA LINES.

work, here and elsewhere, to arouse the feeling that this might have been the true reason—I must confess I should rather like to believe that it was—though at the same time the tale of the lowering of the intended height of the church, for the chance of a better shot at the Turks, is so characteristic of the Order that it has a value of its own.

If St. John's Church were described as it deserves it would not be possible even to mention, however briefly, the other buildings of which views are exhibited: but there are one or two features which must be alluded to in passing. The unusual position of the organ, or organs (against the east wall, on either side of the small apse which terminates the choir, and overhanging the returned stalls), very effective in every sense, but only possible in a church of great width, will of course be noticed: this, however, has already been described, with full appreciation, by the late Mr. R. Herbert Carpenter [*F.*] in his *Addenda* to the paper on *Musical Requirements in Church Planning*, by Mr. John Belcher [*F.*], read here some years ago.* The side chapels require a word of explanation as to their original use, which will also apply to a group of buildings by the same architect, next to be mentioned. It will be seen, on the

plan, that most of these chapels bear, in addition to the name of a saint, a geographical title. This was in consequence of the cosmopolitan nature of the Order, which contained within itself a number of distinct and quasi-independent brotherhoods, each one composed of Knights hailing from a particular country or province of Europe. These divisions, each of which had its own elected head, were termed *langues*, or "languages," and from the time when they were regularly organised, in 1331, every candidate wishing to join the Order had to satisfy one or other of them, not only of his knighthood, but of the nobility of his descent, in the most strict accordance with the heraldic customs of the particular country. Heraldry always figures largely in the buildings of the Order, and the importance attached to it can be better understood when we read of the rigid and elaborate rules laid down by different *langues* as to the number of quarterings requisite for admission, and the proofs by which claims had to be supported. The number of *langues* at first was seven, viz. Provence, Auvergne, France, Italy, Germany, England, and Aragon. An eighth, Castile and Portugal, was added in 1461; but the *langue* of England, was practically destroyed in 1540 by the action of Henry VIII., so that, although it had played a great part in the earlier history of the Order, we hear very little of it in connection with Malta. A new *langue* was created in 1782 for Bavaria, and joined to the *langue* of England, still considered as only dormant, under the title of the Anglo-Bavarian *langue*.

* See TRANSACTIONS, Vol. V. N.S. p. 46.

This, however, which had not any real association with England, disappeared at the dispersal of the Knights from Malta in 1798, the branch of the Order of St. John now flourishing in England being a revival, dating from 1831, of the old sixth *langue*, suppressed at the Reformation. Those members of each *langue* who were for the time serving at headquarters—a considerable number of Knights were usually occupied in their own countries, managing the “commanderies,” or estates belonging to the Order—lived all together, very much like members of a college in one of our own universities, in a large building called an *auberge*, under the presidency of their “conventual bailiff,” as the head of the *langue* was styled. These eight bailiffs were the principal dignitaries of the Order, ranking next to the Grand Master, and forming by themselves his ordinary council. Each of them held *ex officio* one of the great administrative posts of the Order, each of these offices being attached in perpetuity to a particular *langue*, probably to maintain a balance of power; so that the *auberge*, besides being the residence of a body of from 100 to 150 Knights, was also the office of a department of the Government, and the palace of a wealthy grandee.

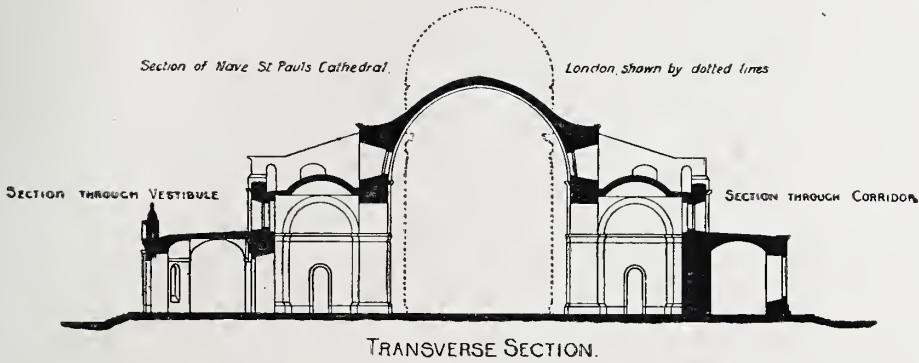
At the building of Valletta, as soon as each *langue* had been told off to its own post along the new ramparts—for it was customary, in every place garrisoned by the Order, that each should be responsible for a particular section of the front, adding thus the element of national rivalry to the general *esprit de corps*—the erection of *auberges* was begun. Most of these, as already mentioned, were the work of Cassar, and the finest of them, though adapted to different uses, still remain in good preservation. The most striking, both in architecture and position, is the *Auberge de Castille*, now the Royal Artillery and Royal Engineer Mess. This, besides an imposing exterior, open on three sides, has a very effective court, with two-storied arcades round three sides (the illustration (p. 31) unfortunately shows only a small part of the arcades), and a fine double staircase. Next, probably, comes the *Auberge d'Italie*, now the R.E. office, standing



FIG. 12.—ATTARD CHURCH: WEST DOOR (circa 1620).

in a narrow street, but interesting in its details. Much larger than any of the *auberges*, but severely plain in its exterior, the Magisterial Palace, occupied formerly by the Grand Masters, now by the Governors of Malta, must now be mentioned, though very briefly. It forms an almost square block, 316 feet by 266 feet, open all round, and mainly of two stories only, though from the great height of the rooms the building is loftier than might appear from this description. The two principal courts are 135 feet by 65 feet, and 102 feet by 98 feet, respectively. The ground floor is occupied by Government offices and by stables, all the State apartments, as well as the residential portion of the building, being on the first floor. The great hall of the Knights, 82 feet long by 37 feet wide and 31 feet high, is at present ruined in appearance by the treatment it underwent at the hands of English decorators, about the year 1820, to adapt it to the purposes of a throne-room and ball-room. A Georgian-Greek interior, all white and gold, has been formed by coverings of wood and canvas, although behind them are a series of historical frescoes commemorating the great siege, and a ceiling of carved and painted beams, such as may still be seen in several of the other rooms. The council-chamber, which retains its original aspect almost unimpaired, is a fine room, 69 feet long by 25 feet wide, and 27 feet high; besides a frieze of naval battles, it has some remarkable hangings of Gobelin's tapestry. One other room only can be mentioned now—the famous armoury, 255 feet long by 38 feet wide, containing one of the most interesting collections of arms and armour in Europe. Close to the Palace there will be noticed in one of the views a building of good late Renaissance design: this is the Public Library, which was built as the Library of the Order about the year 1780. Two other palaces of the Grand Masters are still used by the Governors of Malta—St. Antonio, about four miles from Valletta, dating from about 1630, but of comparatively small architectural interest; and the fortified hunting-lodge called the Tower of Verdala. This is very prettily situated in one of the remotest parts of the island, and remains much the same as when built by Gerolamo Cassar for the Grand Master Verdala in 1586. It consists of a square keep of three stories, with a turret, of somewhat unusual shape, forming on plan an irregular pentagon, like the bastion of a fort, rising a story higher at each angle. In the interior are some good rooms, mostly vaulted in stone, and enriched with frescoes and other paintings.

It is hard to say anything about the fortifications of Valletta without seeming to exaggerate, but they are literally stupendous. Their extent can only be appreciated by looking at the map, and even then their scale will almost certainly be underestimated, so much do they exceed ordinary works of the kind in magnitude. They are the result of the devotion for centuries of the immense resources of the Order, both in money and in slaves, under the direction of the ablest engineers of Europe, to rendering the place not merely reasonably, but also ostentatiously secure against any possible attack. It soon became an object of ambition with every Grand Master to add some new fort or line of works—to which he generally attached his own name—to the existing defences, which were thus ever extending further and further from the capital. So all the later fortifications have as much the character of monuments of personal pride as of utilitarian undertakings. The readiness, too, with which the ground lent itself to the construction of enormously deep dry ditches and towering stone ramparts, when labour was of no account—every cruise of the galleys bringing a fresh supply of Turkish prisoners of war—resulted in works of a total height to be seen, I believe, nowhere else. The inner lines of Valletta, which stretch across the peninsula from harbour to harbour, measure, in some places, as much as 153 feet sheer up from the bottom of the ditch to the crest of the parapet; and this does not refer to an isolated tower, but to a wide bastion. Besides the many concentric lines defending Valletta and its suburbs on the land side, on every point of rock jutting out into the harbour is built an imposing fort—or rather castle,



- References to Plan
- | | |
|--|--|
| A. High Altar | J. Chapel of St Paul |
| B. Chapel of the Baptism of Christ | K. - - - St Michael |
| C. - - - the Blessed Sacrament & Our Lady of Philermos | L. - - - St Charles |
| D. - - - St Sebastian | M. Stairs to Crypt, Chapel of the Crucifixion. |
| E. - - - St George | NN Organ (over Choir Stalls) |
| F. - - - St James | O. Sovereign's Throne |
| G. - - - The Decollation of St John | P. Archbishop's Throne |
| H. - - - The Adoration of the Magi | Q. Pulpit |
| I. - - - St Catharine | |
- The names in the side Chapels are those of the Languages of the Order to which each was appropriated

ERRATUM.—St. Michael's Chapel (K) should be assigned to Provence, and St. Charles's Chapel (L) to England and Bavaria.

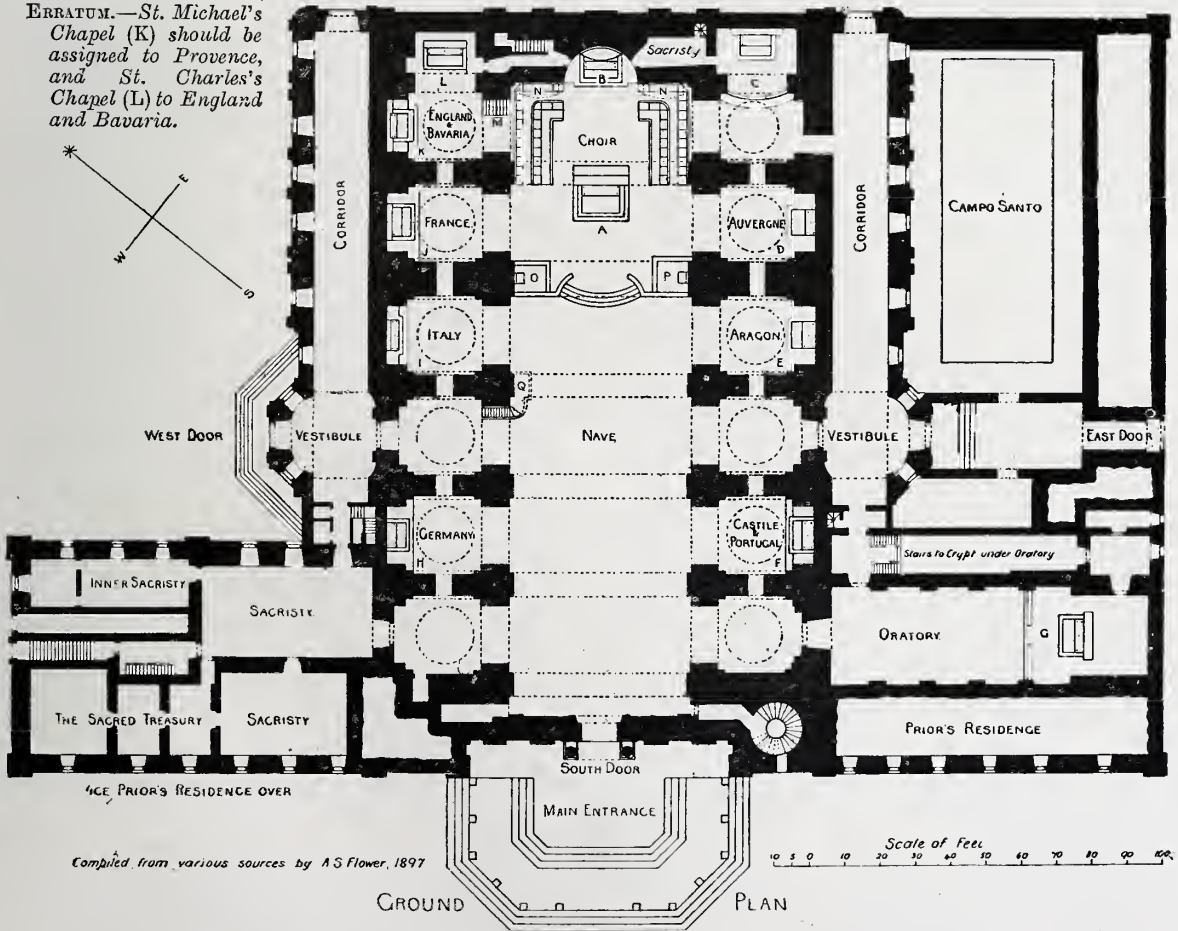


FIG. 13.—THE CATHEDRAL CHURCH OF ST. JOHN, VALLETTA, MALTA. GEROLAMO CASSAR, ARCHITECT. 1573-78.

according to the ordinary sense of the two words—and to several of these, especially Forts St. Angelo and St. Elmo, belongs a good deal of architectural as well as historic interest. The heroic incidents associated with the little chapel of Fort St. Elmo form probably the most familiar scene in the history of Malta; but the appearance of the building is by no means so well known, so that I am particularly fortunate in being able to show a view of the interior. In fortifications such as these the gates are of course very striking: some of them are in themselves worthy to rank with the grandest works of Sanmichele at Verona, but their effect is increased immensely by their position. As Mr. E. Ingress Bell [*F.*], in “An Architect’s Notes in Malta,” published in *The Builder*, 28th March 1885, graphically describes it, “we enter the Porta Reale across the drawbridge, which trembles over the dark abyss of the main ditch which separates Valletta from Floriana, the bottom of which no eye can see.” As a matter of fact I have walked along the bottom of this ditch, but certainly felt almost lost there: it was like a mountain pass with both sides absolutely precipitous. To get into Valletta at all, except by water, it is necessary to pass through three of these tremendous barriers: these are all represented in the photographs exhibited, as well as some of the most remarkable gates of the outlying works, though there are many others of nearly equal merit.

Valletta alone contains so many buildings of interest that a mere list of them would occupy too much time. Of all those of which views are shown brief particulars are annexed. There is one, however, which deserves mention for its intimate connection with the Order of St. John. This is the Great Hospital, which, true to their traditions, was one of the first buildings the Knights erected, and always maintained on a positively lavish scale of expenditure. It is perhaps chiefly noteworthy for containing the largest ward ever built—503 feet long by 35 feet wide, with a shorter ward of the same width opening out of it. Of the churches it must now suffice to say that there are twenty-four, several of them splendid buildings, besides chapels and oratories. Outside Valletta, in the suburbs and country villages, may be counted a still greater number of churches, together with almost innumerable detached chapels. Many of the latter are circular or octagonal on plan, and domed, with very graceful outlines. The larger village churches have usually two western towers and a dome at the crossing. To give an idea of their scale two typical churches, both dating from the seventeenth century, may be mentioned: Zeitun Church, 153 feet long and 111 feet broad, including side chapels, with a nave of 31 feet wide; and Zebbug Church, 165 feet long, 122 feet wide, and 32 feet across the nave. As to that ungainly giant, Musta—which, as Mr. Ingress Bell says, is “the show church of the island”—I can only endorse his remarks that the exterior ornamentation is absurdly out of scale, and that of the decoration of the interior the less said the better. A warning, though, must be added here that Fergusson, in his well-known account of the building of this church, has—for rhetorical effect, apparently—very unjustly depreciated the architect, Signor Giorgio Grognet. Fergusson’s statement, that “although the merit of the original suggestion of the design is due to a local architect of the name of Grognet, the real architect of the building was the village mason, Angelo Gatt,” can only be compared for accuracy to some of those playful perversions of events which Macaulay passed off as history. No one certainly would gather from these words that Grognet was actually the architect of the church from its inception to its final completion, while Gatt was only employed as master-mason during the latter part of the operations.

Città Vecchia, or Notabile, originally the chief city of the island, and the scene of St. Paul’s sojourn there, commemorated in the dedication of many religious buildings, is exceedingly picturesque, both within and without. Its Romanesque cathedral was destroyed by an earthquake about two hundred years ago, and the present grandly situated building, of

which Lorenzo Gafà, a Maltese, was architect, was consecrated in 1702. The wide nave, upwards of 36 feet in span, is noteworthy; also the carved and inlaid choir-stalls, said to date from 1480, and very good in design and execution; and, in a different sense, the gorgeous altar-ornaments and other treasures which escaped the general pillage of the island by the French invaders in 1798.

There remains something to be said on the characteristics of the architecture of the Order. If I could follow the author of a popular book of travel, who has described Malta at some length, this would be easy. Of St. John's Cathedral he says: "There is no architectural character whatever in this edifice" [!] To Dean Church these buildings appeared "rich and somewhat heavy Italian or Palladian, but of very noble proportions." Mr. Ingress Bell, taking a more general view, says "there is a curious similarity between the architecture of Malta and that of some of the Belgian towns, which is explained by the presence of the Spaniard. Spanish architects in great numbers were in all probability employed upon the city of Valletta. Those peculiarly licentious forms of Renaissance art which are distinctive of Spain—those defiant discursive curly-wurly doorways and dressings, which are plentiful in Antwerp—have their exact counterparts in Valletta." This is a pretty fair description of many Maltese buildings; a strong resemblance to Spanish work, particularly in ornament, may often be traced. But of the actual presence of Spanish architects I can find no evidence. There are even circumstances which suggest that Maltese masons may have been transferred to Spain, rather than Spaniards to Malta. This florid manner, however, belongs only to the later part of our period, and rather to the ecclesiastical and domestic work of the Maltese themselves, who, it must be remembered, always maintained a separate national existence, than to the official architecture of their rulers. This, in the days before the Order itself fell away into luxury and ostentation, was marked by severe sobriety. Heaviness it may have had, but not richness; even the term Palladian is inappropriate. It is really more akin to early Florentine Renaissance than to any other type; and it is significant that Laparelli, the only foreigner known to have taken a leading part in the building of Valletta, was a Tuscan. His name even suggests a possible descent from the great Brunellesco dei Lapi. But whencesoever derived, all the buildings of what may be called the heroic age of the Order have a particular stamp upon them—they are exclusively Doric. They are marked by a restraint, and therefore a unity, somewhat uncommon in Renaissance design; moreover, the style so consistently followed, from plinth to parapet, is in singular conformity with the spirit of the Order. The Knights of St. John were in many respects the representatives, the re-incarnation of the Spartan ideal; and just as the Dorian character created, as has been well said, the old Doric architecture, with its severity so expressive of the sternness of Dorian purpose, so another phase of the same manly style was most fittingly employed in the temples and the dwellings of this equally military and monastic society, whose watchwords were courage and temperance. Their architects were soldiers also; and if we miss from their works Ionic softness or Corinthian profusion—if, in other words, we call them hard and bare, we may at least recognise in them the merit of strong and single-minded devotion to honourable aims, which is after all a form of beauty.

In reaching the limit, not by any means of my subject, but of the length allowable in a paper of this kind, the superficial and desultory nature of these remarks comes sadly home; but the field to be covered is a very large one, and it is extremely difficult even to indicate the extent of it, which is all that I have been endeavouring to do. The names of some of the friends who have given valuable aid have been already mentioned; but I have now to add a grateful acknowledgment, that for my introduction to the architectural wonders of Malta,

and for facilities in examining them, I am wholly indebted to the kindness of General Sir Henry A. Smyth, K.C.M.G., late Governor of the island.

POSTSCRIPT.—In the collection of material for this Paper, at first intended to have a wider scope, I have been greatly indebted to the valuable and most readily given assistance of Chevalier E. L. Galizia [*F.*], of Valletta, whose knowledge both of the ancient and modern architecture of Malta is probably unrivalled. Among other information thus supplied was a full description of the present method of constructing the flat roofs so characteristic of Maltese buildings of all ages. My "Notes" having been confined to the works of an earlier period, Chevalier Galizia's interesting memoranda, which were offered to the Institute as much as to myself, are printed below as an appendix.

METHOD FOLLOWED IN THE CONSTRUCTION OF ROOFS ("TERRAZZI") IN MALTA.

BY THE CHEVALIER E. L. GALIZIA [*F.*].

Roofs (*terrazzi*) are made of thin slabs of freestone (glogicrina limestone), the same kind as that generally used for building purposes. The dimensions of these slabs are as follows:—Length 2 ft. 6 in., width 10 in. to 12 in., thickness $2\frac{1}{4}$ in. to $3\frac{1}{2}$ in. (fig. 1). The slabs are let into the bays between the iron joists, and set with lime mortar flush with bottom flanges (fig. 2). They are afterwards jointed together, and properly wedged in with small bits of stone, more or less wedge-shaped, and also set with lime mortar.

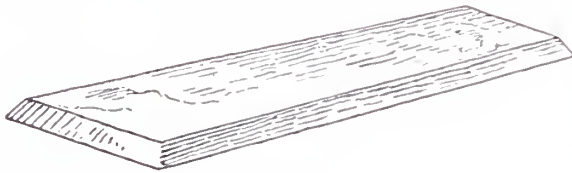


FIG. 1.

When the above work is completely carried out a layer called *psisa* (see fig. 2) is laid all over the roof. This layer consists of stone chippings obtained from the dressing of building stone, and it has a thickness varying from 4 in. to 5 in. This

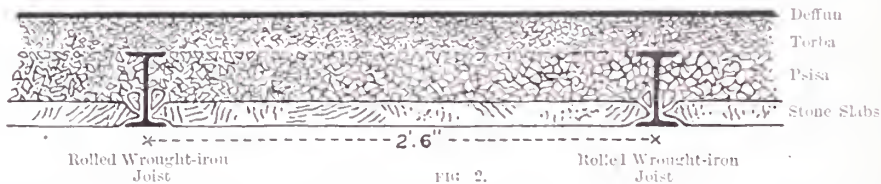


FIG. 2.

material when laid is properly watered and sloped towards those parts where rain-water pipes are intended to be fixed, in order that the rain water may find its way off.

Another layer called *torba*, of a thickness of about 4 in., as shown in fig. 2, is afterwards applied: it consists of twelve parts stone chippings, rather finer than those already described, and one part of lime, mixed together and thoroughly saturated with fresh water. These ingredients are prepared previous to their being laid, and afterwards deposited in a uniform thickness all over the first layer (*psisa*). As soon as laid it is rammed down gently with wooden rammers (see fig. 3), in order to correct all irregularities; a quantity of water is sprinkled at intervals upon the surface while ramming, in order to render it compact. This process is carried out by a gang of countrywomen under the charge of a good plasterer.



FIG. 3.

Immediately afterwards a thin grouting, about $\frac{1}{2}$ in. thick, composed of two parts of liquid lime and one part of fine broken pottery, properly crushed (*deffun*), is spread over the *torba*; the surface of this mixture, as soon as spread, is also gently rammed down. During the ramming three other parts of finer *deffun* are spread on the grout at intervals, accompanied by sprinkling fresh water with a white-washing brush, and thus the operation is continued until the whole mass is properly rendered compact and smooth. This process takes a rather long time, otherwise the formation of *terrazzi* will not be of a good consistency.

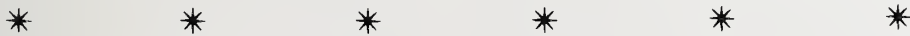
When the *terrazzo* is thoroughly indurated, its surface is finished off very smooth and even by

means of small iron or steel trowels (see fig. 4). During this operation (which is executed by another gang of countrywomen) the surface is kept in a damp state by sprinkling water continuously while it is trowelled over and over again for a long time until it is properly set, and turned out into a very sound condition.



A square foot of this kind of roof and terrace, not including the iron joists, and of a thickness of 10 in., costs threepence, and weighs 70·3902 lb.

The terrace after completion must not be disturbed until it is sufficiently hardened. Walking across a terrace before it is hard enough will cause the same to crack. A great quantity of water used in making terraces has a great influence on their good results; too much water is never injurious. The success of this kind of work, however, depends entirely upon the proper management of the plasterer directing the work. Rapid evaporation is injurious, causing cracks: it is prevented by covering the terrace for a few weeks (the longer the better) with straw kept continually moist, which protects the roof from the direct action of the sun and wind. But in order to have a very good and more substantial work, the construction of *terrazzi* should always be carried out in winter time if possible.



Mr. Arthur Cates [F.] sends the following inscriptions, copied by him from the monuments of the Designer and the Builder respectively on each side of the entrance to the great domed church of Moustá:—

GEORGIUS · GRONGNET · DE · VASSÉ ·
 ILLUSTR · FAMILIA · MELITENSI ·
 VIR · ERUDITISSIMUS ·
 PHILOSOPHICIS · DISCIPLINIS ·
 EGREGIE · EXCULTUS ·
 PLURIMUM · LINGUARUM · PERITUS ·
 QUI ·
 IMPERANTE · NAPOLEONE I ·
 XVIII · ANNOS · MILITAVIT ·
 QUANTUM · ARCHÆCTONICA · ARTE ·
 PRÆSTITERIT ·
 ADMIRABILE · HOC · TEMPLUM ·
 ROMANI · PANTHEONI · EMULUM ·
 CUJUS · IPSE · EST · MOLITOR ·
 SATIS · SUPERQUE · DECLARAT ·
 OBIT · PRID : NON : SEPT : AN : MDCCCLXII
 ANNOS · NATUS · LXXXVIII
 SAC : JOSEPHUS · ZAMMIT · LLD ·
 AMICO · SUO · DULCISS : SCRIPSIT ·

ANGELUS GATT

ÆDIFICATOR · CEMENTARIUS ·
 MIRANDO · ARTIS · MAGISTERIO ·
 TEMPLUM · HOC · SINE · ULLO · FULCIMINE ·
 XXVII · ANNORUM · SPATIO ·
 AB · IMO · AD · SUMMUM · EXEGIT ·
 ABSOLVITQUE · ANNO · MDCCCLX ·
 HEIC · IN · PACE · ✱ · REQUIESCIT ·
 OBIT · PRID : ID : NOV : AN : MDCCCLXXV ·
 ANNOS · AGENS · LXXX ·

DISCUSSION OF MR. FLOWER'S PAPER.

COLONEL LENOX PRENDERGAST [*H.A.*] asked permission to move a vote of thanks to Mr. Flower for his extremely interesting paper. As the lecturer had truly said, Malta was a closed book to the general British public. Many, and he among them, had touched there, but few had any knowledge of its great architectural attractions, and he interposed merely for the purpose of inducing those visitors from the island who were present to give the Institute the benefit of their experience. The material at the builder's disposal was a joy to anybody interested in great architectural works. This most beautiful stone, which could be almost manipulated like chalk, lent itself to decoration not merely in the soft, but as it hardened with exposure, it became a most enduring and charming decorative material to deal with. That of itself was an immense recommendation. It was almost unique to find such a series of buildings erected, so to speak, for one employer. The Grand Masters were great personages, having large funds at their disposal, which they used pretty freely. With regard to Mr. Flower's criticism of the Church of St. John, he (the speaker) had very little knowledge of this building, but he had been in it, and thought there was something exceedingly attractive about it. There was no doubt that it was out of proportion, the height was altogether wrong, but it had been so skilfully dealt with, and was so magnificent in appearance, that one could hardly say anything against it. Mr. Flower seemed to be under the impression that the style necessitated a large internal cornice. He (the speaker) thought the Maltese architect deserved the greatest credit for having dealt with this matter so skilfully. In discussing these things, one often failed to recollect the purpose for which these buildings were erected. They were not erected in order to make merely a pretty church—this proceeding had been left to the Victorian era!—they were built for a specific purpose. There were half a dozen or more—seven, he thought in all—*langues*, *i.e.*, lodges of the Order, whose business it was to deal with the work belonging to different countries, and this church was merely a series of chapels; the *langue* of each country having its own chapel, which opened into a spacious hall with a barrel-vault over it, and this was the nave of the church, but the *raison d'être* of the whole building was this series of chapels. The architect set to work, and, being a local man, he had not very far to go. Amongst the illustrations was a view of an early church in St. Elmo [p. 35]. The architect had a very beautiful suggestive precedent in this simple early Renaissance building. He simply carried out that idea; and it would be found that there was pretty much the same sort of early Renaissance idea about the church which would preclude the

use of that heavy cornice suggested by Mr. Flower. It was not in the mind of the architect to accentuate the fault this church possessed through want of height by a heavy horizontal line of cornice running the whole length of the church.

THE REV. W. K. R. BEDFORD said that, knowing Malta as well as any Englishman could possibly know it, he could endorse most heartily the remarks of Colonel Prendergast, and very highly appreciate the admirable Paper read by Mr. Flower. With regard to the Church of St. John, the roof was, of course, original. A great deal of the church was much more modern than Cassar's day, because Cotoner, a Grand Master of the time of Charles II., lavished a great amount of treasure on the building, and signs of this were to be found all over it. Most of the ornamentation dated only from about 1660, but the construction of the roof was due to the original architect and was part of the original plan. With regard to the genesis of that roof, it would be seen, by the small church at the top of St. Angelo where L'Isle Adam was buried, which dated from about 1530, that there used to be a much more decided Gothic pointed arch feeling, and that gradually, as time went on, they came down a little, though they still preserved a certain family likeness. There was a family likeness between those two churches. Whether the church at the top of St. Angelo was earlier than the coming of the Knights or not he could not tell, but the church contained a porphyry column which was certainly put there by L'Isle Adam, and he altered and enlarged it for his own burial-place: therefore it might be taken as the first building of the Knights in the island. The little chapel in the fosse of St. Elmo, which in its lines still remained as originally built, was decorated by Lascaris in 1636. In the Church of St. John the same principle actuated the architect, Cassar, who was no doubt influenced by what he already found there. Then he would call attention to the very important fact that subsequent to the first construction of Valletta, when Italian influence prevailed to a great extent, two great waves of reconstruction passed over the fortunes of the Order. The Spanish Grand Masters, of whom there were several in succession, brought in Spanish ways, and Spanish balconies could be found affixed to Italian buildings. There were one or two interesting examples of that in the hotels, as some of the buildings erected by individuals were called. In the Hôtel Verdelin, for instance, one of the most beautiful, the Spanish influence could be seen very plainly. After the lapse of another century the last Grand Masters, Pinto and De Rohan, erected some very handsome buildings more in the French style: thus the various nationalities one after the other impressed

in some degree their artistic feeling upon the buildings of the Order. In conclusion he would ask all Englishmen who cared about architecture to take note of another wave of reconstruction that was setting in. He was sorry to say that as the leases of these fine old courtyard buildings expired—not those used as public offices, but those let as dwellings—they were turned into flats, the courtyard filled up with bad stone (for there was bad stone in Malta), in fact the era of jerry-building had set in in Malta, and he hoped Englishmen would bring to bear all the influence they could to put a stop to such a state of things.

COLONEL J. R. HOGG, R.E., late Commanding Royal Engineer in Malta, made a few observations on the subject of the Paper, and referring to works carried out in the island during his term there, remarked on the difficulties those in charge had to contend with in the preparation of designs harmonising with architecture in official favour in England, rather than with that existent in Malta. With regard to the masonry work, he thought that nowhere in Europe could be seen such feeling, tasteful, and gentle designs as were conceived and executed by Maltese working masons.

MR. THOMAS BLASHILL [*F.*] asked the name of an old town outside Valletta, of which a description is given by Elliott Warburton in a book published some thirty or forty years ago. Speaking from recollection it was a very ancient town, containing fine old buildings, but quite deserted.

THE REV. W. K. R. BEDFORD, replying, said the town was Città Vecchia. The author's words in the work referred to were: "It reminded me of a city of the dead." There were a great many fine houses there. A great part of it was Sicilian Norman architecture, but the houses were all in courtyards, and had no windows looking to the outside, so that in walking along the lanes the whole place seemed to be deserted and dead. The houses had the peculiar little cornice about half-way up, shown in some of the photographs, with little corbels all along, and always the Sicilian Norman arch. It was a walled town, with six or seven streets of that character which evidently much impressed Elliott Warburton.

THE PRESIDENT said that not having seen Malta he could only speak of its architecture from Mr. Flower's photographs, drawings, and description. Valletta was interesting in every way, not only from the excellence of the architecture, but from being a city in Europe which was partly cut out of its own stone, like some of the Egyptian cave temples, and partly built from that which was cut out, and also from its style. There was one point mentioned which was profoundly interesting, that all the ornamental work had been done by the masons gratuitously, from the mere pride of skill and knowledge. This, however (the President continued), is not absolutely singular, for one of my brothers was in Mogador, and saw

a large brass dish of curious pattern in a brazier's shop, and knowing that I had a fancy for ornamental things he thought it would be interesting to me, and inquired the price of it. The brazier was a young fellow, and was of course short of money. My brother inquired how much the one he admired would cost, but it was sold; the brazier told him he could make him one, and asked him of what thickness he wanted it. My brother said that the thickness of the one he admired would do, but what he was particular about was the pattern; to this the brazier replied, "Oh, if you will only tell me the thickness of brass you want you may have any pattern you like; that adds nothing to the cost." So it seems to be in Malta. The masons, Mr. Flower tells us, even to this day pride themselves on their artistic skill, and do not look to be paid for it. It is a skill and pride that I am afraid is extinct in every other part of Europe, although it may still exist in some of those barbarous countries where they can do nothing good except in the way of art or beauty. I think it was Théophile Gautier who said that if you saw a beautiful basket, mat, or water-bottle, you might be sure it was made by savages who were probably cannibals, but if you saw anything that was hideous and repulsive it probably came from the most highly civilized and pious nation in the world. I do not know that there is any immediate connection between art and cannibalism, but still, it only shows that these savages have been more in the company of nature, have better observed it, and have greater delight in producing beauty than more highly civilized people. The plan of the Church of St. John reminds one of San Francesco at Rimini, which Alberti, in the fifteenth century, turned from a Gothic church into a temple to Isotta and the humanists. It consists of a wide nave with chapels on either side instead of aisles, only the divisions between the chapels are wide to form niches for the sarcophagi. These square niches are arched, and the composition rivals Roman work in simplicity and grandeur. The sarcophagi contain the ashes of some of the early Greek teachers and the early scholars of Italy, who were sepulchred there by that horrible tyrant, Sigismondo Pandolfo Malatesta. This plan seemed to have taken Alberti, for when he built the Church of St. Andrea at Mantua, he carried out this same plan, only there was a transept to it, and over the crossing of the transept and the nave there was a dome. The character of most of the work at Malta, which is late sixteenth century, is not unusual in Italy of that time, but the chapel of St. Elmo is a remarkably fine example of the early Renaissance, and in fact is one of the most charming things I have seen. There is that delicacy of treatment and that peculiar character which marked the works of these early sculptors who turned architects; and gave us the benefit of their original conception,

slightly flavoured with classical knowledge, and which strike us as being the most beautiful things that were ever done since Greek days. There is a freshness of invention and treatment about their work that, together with their consummate skill, has never been repeated since. The early Renaissance men were men of such extraordinary powers that we do not come across their like in the present day. The only man I have ever known that could compare with some of the great early Renaissance artists was the late Lord Leighton, who was, like them, equally brilliant all round. You must consider that these men had become accomplished sculptors when they were almost boys, and that mostly it was after that time that they took up architecture. If any architect ever expects to rival the early Renaissance architecture, he must, of course, bring the same vigour, determination, and invention that they brought, and must expect to go through the same training, *i.e.* be apprenticed to a goldsmith, and after he has learned that art he must become a skilful painter and sculptor, and then turn architect. Of course, it is not our idea of architecture at all, but still as far as sweetness and beauty go it is unique; and if we can shut our eyes to the want of anything that we should call architectural skill—that is, exactly meeting the wants with the exact amount of material that is required, putting them in the exact place, and giving the proper character to the building—of course there is nothing like the early Renaissance architecture for charm and beauty since the days of the Greeks. Well, here we see a specimen of it that, as far as I know, has never been seen in Europe before—some of the other structures are fine, but of a much later date and of a less delightful character; as Mr. Flower remarked, many of the doorways put one in mind of the great gateways by Sanmichele. Altogether Malta seems to be a most wonderful place, and has been most admirably described by Mr. Flower. We are extremely obliged to him for the trouble he has taken in drawing our attention to this very charming architectural spot which is so little known to most people in Europe.

MR. ARTHUR S. FLOWER, in responding to the vote, thanked Colonel Prendergast for his suggestions as to the possible origin and derivation of some of the peculiarities of the Church of St. John. Had he known Mr. Bedford was to be present, he should have hesitated about reading his Paper at all. Mr. Bedford's name was a household word so far as everything connected with Malta was concerned, and he hardly liked saying anything about the place in his presence. He wished they could have an opportunity of hearing more about it from such an authority. He hoped that many present might have the pleasure of going to Malta; they would find that he had told them only a tithe of the things to be seen there.



9, CONDUIT STREET, LONDON, W., 20th November 1897.

CHRONICLE.

Mr. Flower's Paper and Illustrations.

Mr. Flower's Paper attracted a full attendance both of members and visitors, among the latter being military officers acquainted with Malta, and officials of the Order of St. John of Jerusalem in England, including its distinguished Secretary, Sir Herbert C. Perrott, Bart., and the Librarian of the Grand Priory at St. John's Gate, the Rev. W. K. R. Bedford, whose observations [pp. 46-47] were received by the Meeting with every token of appreciation.

The illustrations hung on the walls and screens comprised plans and sections of the Cathedral Church of St. John, Valletta, and of the Governor's Palace, all specially prepared to large scale by the lecturer, a map of Malta and dependencies, and a plan of Valletta and its harbours. The photographs, numbering seventy-two in all, kindly lent by Mr. Flower for exhibition, formed an extremely interesting and beautiful collection, and were allowed to remain on view in the Library for a few days for the benefit of those unable to attend the Meeting. A list of them is appended:—

- 1 to 12. St. John's Cathedral, Valletta.
- 13 to 16. Auberge de Castille, Valletta.
- 17, 18. Auberge d'Italie, Valletta.
- 19 to 23. Governor's Palace, Valletta.
- 29, 30. Public Library, Valletta.
- 31. Palace of St. Antonio.
- 32. Tower of Verdala.
- 33, 34. Chapels, Forts St. Elmo and St. Angelo.
- 35 to 46. Fortifications and Gates.
- 47, 48. Great Hospital, Valletta.
- 49, 50. St. James's Church, Valletta.
- 51. Opera House, Valletta.
- 52 to 55. Street Views, Valletta.
- 56 to 59. Buildings in environs of Valletta.
- 60, 61. Parish Church, Musta.
- 62, 63. General Views, Città Vecchia.
- 64 to 68. St. Paul's Cathedral, Città Vecchia.
- 69 to 72. Phœnician and Roman remains.

Architects' Charges in Respect of Fire Claims.

MR. HENRY COWELL BOYES [*F.*] writes:—

Members of the Institute may be glad to know that the action lately taken by the Practice Standing Committee has not been without effect. I

have recently superintended on behalf of the insured a reinstatement after a fire. The office concerned was the Imperial. When the work was finished I received, much to my surprise, a cheque from the builder employed by the office, with a letter informing me that it was for my fees, which it was arranged that he should pay. This I returned, and the attention of the office having been called to the transaction, I received a letter from Mr. Cozens-Smith, the manager, informing me that it was the result of an error on the part of an official. Mr. Cozens-Smith adds: "The Company has taken special pains to terminate the very unsatisfactory practice of making architects dependent on the good offices of the builders they superintend for the payment of the fees to which they are entitled; you also had been informed of this, and might well be surprised to find the Imperial continuing the objectionable practice." I have since received the Company's cheque for the amount. Architects having any difficulty in dealing with Fire Offices in these matters may find their hands strengthened by the knowledge of the action of the Imperial Office in thus meeting the wishes of the Institute.

The Study of Coloured Decoration.

It should interest architectural students generally, and especially junior members of the Association, to learn that the Painters' Company is again offering a Travelling Studentship of £50, to encourage the study of coloured decoration. Competitors must be attached to some school or institution connected with the study of applied art, situate within the larger metropolitan postal area, and must be prepared to spend at least six weeks in Italy during the year 1898. The competition will take place early in March. The conditions and full particulars can be obtained from the clerks of the Company, Painters' Hall, 9, Little Trinity Lane, E.C.

The Perth Architectural Association.

The Perth Architectural Association, the outcome of the aspirations of young men in the district interested and actively engaged in the study of architecture and engineering, held its first meeting on the 9th inst., Mr. G. P. K. Young [A.], President, in the chair. In an opening speech the President explained the objects of the Association, stating that it had been formed to improve their knowledge of the art and science of building, and to obtain better facilities for that purpose. To this end, working classes had been established, at which subjects were given out for study and discussion under the guidance of practising architects of the city. Arrangements were also in progress for the delivery of lectures. There had been a very good attendance at the classes, and much enthusiasm displayed. Mr. Hippolyte J. Blanc, R.S.A., then delivered the in-

augural address, of which the following is a brief abstract:—

The formation of the Society, Mr. Blanc said, was an important step on the part of local practitioners, showing that they recognised the dignity of their profession, and the responsibility attaching to those entering its ranks. The banding together of members of the same profession undoubtedly tended to the maintenance of professional etiquette, yet their influence for good would be weakened unless there was a recognised freemasonry, a fraternal and confident co-operation among its members. He wished to lay before them, as a young society, a few thoughts upon the interests of their profession, and indicate how best they could aid in promoting these. The future grew out of the past, and any effort towards progress which did not recognise the value of the past was unreliable. The enthusiasm of their beginning should be maintained as life progressed by a constant springing up of new actors as the old actors subsided in the restfulness of autumnal repose. Such an association should be raised upon the concrete of a fraternal communion, with a superstructure of unaffected love for the profession. Love was their keynote. Another requisite was devoted study towards knowledge, but it must be patient, persistent, and consistent. All knowledge acquired would never make an artist, but it would at least prevent the errors and anachronisms which betrayed the untutored hand. To Mr. Ruskin's mind there were two qualities which distinguished great artists—imagination and industry. Imagination was a high gift, though it could not be boasted that many artists possessed it. But industry had promised to it great rewards, and its exercise was within the power of all. The Association should be made helpful primarily to young members of the architectural profession, and also to the public who interested themselves in art matters. There was no knowledge which would not be useful to the architect, but it was not intended that an architect should be expert in all. He should, however, have such experience of all branches that in the interests of the public he should be able to design a building that would be sound in construction and healthful, without extravagant waste of material. Architecture was a definite art, much more so than the arts of painting and sculpture. It was in the decoration of the forms of the building that the art was expressible. The only way to obtain these requirements was by a course of well-directed study and by concurrent office practice during a specified number of years—five at least. In this country there was an absence of anything like State aid, and the burden was, in consequence, laid upon communities to establish, either by private enterprise or congregated effort, the necessary ateliers and larger schools where the instruction required by the architectural student might be obtained. The defect of their system was the too great ease with which one could enter the profession, take three or four years at very mechanical work in an architect's office, and without official study of any kind commence the commercial pursuits of an architect. With all the machinery in schools of art for training students there was still an important requisite wanting. There should be some form of test at the close of a youth's ordinary school education, from the result of which a direction might be given him as to the avocation he was best fitted for. The Association should exist primarily for instruction. It should be a nursery and training room for all entering the profession. Dealing with what should be their objects of study, he said the best subjects were to be found in the past. These designs, however, should be studied, and not merely copied. Lectures, &c., should be systematically pursued, and every encouragement given to outside measuring and sketching. In this connection they should make the camera their friend. The student, too, must not overlook his opportunities in gaining office practice. The great difference between the British system and that pursued on the Continent was that instead of being

too academic they had joined the practical with the academic. His care in the office should be to become a great draughtsman. In his early years of office work he should jealously guard himself against slovenliness. In architecture there should be a balance of light and shade as much as in the work of the sculptor or the painter. An architect's best help towards a satisfactory design was his first carefully finished drawing, and perspective should be carefully studied. In conclusion, Mr. Blanc gave advice as to examinations, and recommended the formation of an architectural library.

THE Cavaliere Boni [*Hon. Corr. M.*] writes to the President that he hopes to discover a dedicatory inscription of the Forum and Temple of Mars Ultor by Augustus behind some plastering on a wall by the Pantani at Rome.

REVIEWS. LXI.

(169)

QUANTITY SURVEYING.

Quantity Surveying, for the Use of Surveyors, Architects, Engineers, and Builders. 3rd edition, revised and enlarged. By J. Leaning. 8o. Lond. and New York, 1897. [Messrs. E. & F. N. Spon, 125, Strand, London; 12, Cortlandt Street, New York.]

Mr. John Leaning's *Quantity Surveying* is too well known a work to need any description of its general plan; little more is here intended than an indication of some of the leading features of the most recent issue. This, the third edition, is in many respects an improvement on its predecessors. It has been revised with evident care from the first page to the last, and has received many useful modifications and additions. The pages of the previous editions were headed throughout with the title of the book; in this edition the more useful method is followed of using a page heading that has reference to the matter immediately below it. As an indication of the amount of additional matter in the volume, it may be noted that the number of pages has been increased from 403 to 547, and the number of cuts from 54 to 68.

One of the most noticeable features of this edition is the considerable extension of the chapter on Prices, in which may now be found much information as to approximate estimates and cubing various classes of buildings, wages and overtime, trade discounts, and cognate matters. The usefulness of the tabulated form in schedules and elsewhere is emphasised, and several specimen tables have been inserted.

In the Law chapter there are additions, and the interesting case of *Gordon v. Blackburne* has been omitted.

The index is copious and, on the whole, correct; but the following errors may be noted:—

“Dressers, 87,” should be “176.”

“Stipulation, &c., 260,” should be “403.”

“Law, 383,” should be “386.”

The author has a good deal to say upon the professional practice of surveyors, and upon their

relation with the architect, and his views upon the latter subject are instructive—though, perhaps, not very flattering to the architect. It would appear that Mr. Leaning regards the architect as being possibly an “artist” and planner of buildings, but scarcely as a master-builder. The key to his view of the case may be found in his assertion that the surveyor “will be practically the technical adviser of the architect on all matters of construction and detail,” and a general glance through his book shows that he is by no means unprepared to regard as a surveyor's possible duties the detailing of mouldings, the determination of scantlings, and the writing of the specification. He does not deny that the architect may write a specification himself, and in that case “the surveyor has simply to correct the specification furnished by the architect,” and when so corrected “it should agree with the quantities.” Surely this looks like the tail wagging the dog.

If the foregoing extracts give a fair notion of what the quantity surveyor is to-day expected to do, there has been a considerable change since the days of our early youth, when the architect produced drawings and specifications so complete and clear that the surveyor's functions could not extend far beyond measuring and billing.

MATT. GARBUTT.

(170)

TWO OXFORD GUIDE-BOOKS.

Oxford and its Colleges. By J. Wells, M.A., Wadham College. Illustrated by E. H. New. 12o. Lond. 1897. Price 3s. [Messrs. Methuen & Co., 36, Essex Street, Strand, W.C.]

The Cathedral Church of Oxford: a Description of its Fabric, and a Brief History of the Episcopal See. By the Rev. Percy Dearmer, M.A. 8o. Lond. 1897. Price 1s. 6d. [Messrs. George Bell & Sons, York Street, Covent Garden, W.C.]

This is a very charming little book; it is more than a guide-book; it epitomises in an eminently readable way the history of the University, and, with the leading facts of architectural growth, development, and change, records all that is most important and worthy of remembrance in connection with the city, the cathedral, the various colleges, halls, and institutions of Oxford. The origin of the different colleges is described, and the vicissitudes of fortune they have undergone. References are made to the great personages associated at different times with these historic buildings, and to the political, social, and religious movements and events with which they have been connected. The various episodes and anecdotes scattered through the work endow it with that vitally human interest so often lacking in the ordinary dry-as-dust guide-book. Admirably bound, and printed in old-face type appropriate to the matter, the work is a most dainty and artistic production, and cannot fail to commend itself to the topographical and historical book lover. A good map of the city, showing the position of the colleges, is conveniently prefixed to the body of the

book. The illustrations, of which there are twenty-six, greatly enhance the attractiveness of the volume; they are from pen-and-ink drawings by Mr. New, and with a bright and sparkling effect convey an excellent general impression of the various buildings. From their breadth of treatment, right amount of detail, and judicious lighting and shading, these drawings, though small, illustrate in themselves that happy mean between the crude, coarse, archaic method of some illustrators, and the forced and overwrought, or vaguely sketchy, fashion of others. Charming, however, as the illustrations are, the introduction of a few figures would, in many of them, have imparted that touch of life which seems lacking, and rendered them more realistic and still more pleasing. The lettering and labels, too, might in many cases have been smaller with advantage; at present they are disproportionately large, and dwarf the drawings they are attached to.

The insertion in the letterpress of artists' names in connection with the portraits of college celebrities disturbs the continuity of the reading and in another edition would be well modified. The names should be retained, but in smaller type, or as foot-notes.

Mr. Wells has made a reputation as a lecturer and authority on Oxford and its colleges, and no visitor to the noble old city could possibly—in the absence of the author himself—have a pleasanter or more instructive guide than his book. It would be a happy thing if Mr. Wells (and Mr. New) would give the public, in a subsequent volume uniform with this, a more detailed history of the City and its municipal institutions, &c., in contradistinction to the University. Mr. Wells, though a *gownsmen*, is able and impartial enough to present the City's story from the *townsman* point of view, and do justice to such a supplementary theme.

The Cathedral Church of Oxford is one of a series of cathedral guides produced by Messrs. George Bell under the general editorship of Messrs. Gleeson White and E. F. Strange, and of which several have already appeared.

Much that has been said in commendation of Mr. Wells's book is due to Mr. Dearmer's also. It fully deals with the general history of the cathedral, its monastic origin, the legendary history of St. Frideswide and her convent, the changes that occurred at the Reformation, and the establishment of "Cardinal" College, now Christ Church, and of the bishopric, &c. The book describes in detail the growth and development of the cathedral and college buildings, and all matters and features of interest connected with the fabric and its adornment. Numerous illustrations are given by photographic reproductions and sketches; a very good drawing by Mr. R. Phené Spiers of part of the celebrated fifteenth-century choir vaulting forms a frontispiece. The

various monuments are described, and a list of the Bishops of Oxford is given, with some brief but interesting biographical notes.

Mr. Dearmer writes in a scholarly manner and with a loving regard for the edifice he so ably describes—with a regard, in fact, which would make out the cathedral to be much older than many will be inclined to admit. He takes great and repeated pains to establish and support the theory that in 1004 King Ethelred "built the splendid church which forms the main part of the cathedral as we know it to-day." It must be admitted that he adduces many good arguments in favour of his contention, to discuss which fully would necessitate a close study of the fabric and comparison with other remains, as well as time and space not at the disposal of the writer of this notice. A charter of Ethelred is quoted which may or may not be authentic, and which at best proves nothing but that Ethelred established a monastery at Oxford, where St. Frideswide reposes.

Ancient documents are not always reliable. The old monks and clerics were not only clever at concocting stories of the miraculous, but also adepts, if need be, at forging documents to better the title to their possessions—witness the deed described on page 50 of Mr. Wells's book—invented, written, and sealed to prove that University College was founded by King Alfred the Great, which legendary deed was confirmed as late as 1726 by the Court of Queen's Bench: being bolstered up by the Fellows of the college, who pleaded that "religion would receive a great scandal" if it were decided in a Court of Justice that a "succession of clergymen" had "returned thanks for so many years for an idol, a mere nothing."

If Ethelred built a monastic church at Oxford, which he may have done, as his charter declares, is it not more likely that the Saxon work at the east end of the cathedral (consisting of the lower part of the eastern wall, with arches and apsidal foundations) is a remnant of Ethelred's building (1004) than a relic of Frideswide's primitive church (said to date from about 727)? It may be noted that these triple apses somewhat resemble remains at Deerhurst, though the openings to the side ones at Oxford are so small and narrow that the apses may have served merely for depositories of relics.

While it is probable, of course, that much of the old stone material of the earlier church was used up and incorporated in the walls and piers of the present structure, it seems exceedingly unlikely, on the face of it, that as early as about 1004, in the troublous times of Ethelred the Unready, one of the weakest and worst of the Saxon kings, when most of the country was overrun and devastated by the vengeful Danes, beggared by vast money payments to purchase their peace, and stricken with famine and disease, an arcaded church of

the dimensions of Oxford should be erected, with details superior to and more refined than most other buildings in the country, to which dates a hundred or a hundred and fifty years later are generally ascribed.

If it can be proved that "the main part of the cathedral as we know it to-day" was built at such a time (1004) and under such conditions, then old antiquaries who regarded most of our Romanesque structures as Saxon are probably right, and such authorities as Rickman, Bloxham, Parker and others, wrong. In such a case architects and archaeologists generally will have to modify their views and rearrange their dates and nomenclature.

Turning to other matters, one cannot help feeling pleased on comparing the east end of the cathedral, as it stands now from Scott's design, with its fenestration and aspect in old prints. It is a pity, however, that the ugly and seemingly useless buttress in the south transept was built by him or should be allowed to remain. It might at least be reduced in size.

To follow Mr. Dearmer through all the interesting particulars in his book is impracticable. Many of his comments will commend themselves to the reader and visitor, though few will be likely to share his pleasure in the Frideswide window of the Latin chapel. Anything more "loud" and garish in the way of stained glass can scarcely be imagined. Its legendary subjects may be curiously interesting, but their presentment is not beautiful. This window is like a gory blotch on the fair face of the cathedral.

The other Burne-Jones and Morris windows are exquisite in their quiet harmony, though they strike one as being conceived and treated rather too much in the classical spirit to be perfectly appropriate for a mediæval church. The principal figures are also somewhat out of scale, being rather too large for the lights they occupy, and St. Cecilia, from her cramped attitude, ugly drapery, and want of balance with the space around her, is, perhaps, the least successful of the representations.

Architects and others regardful of the national monuments, in which we all have a property and interest, cannot do better than procure, as they are published, this very excellent series of guide-books to our cathedrals. They embody in a handy and artistic form a great deal of historic and up-to-date information, are written by very competent authorities in a readable manner, are useful for reference, and are well illustrated. The plan, however, given with the Oxford volume is too small, and is badly placed in the book. To be useful the plan should be at least twice the size of that given, and should be put at the commencement or end of the book for ready reference without the necessity of turning over pages to find it. The diagrams on pages 33, 34,

and 35 would be better together, on opposite pages, but placed the same way of the compass for comparison.

JOHN COTTON.

Oxford.

Books received for Review.

The Ruins and Excavations of Ancient Rome. A Companion Book for Students and Travellers. By Rodolfo Lanciani, D.C.L. Oxford, LL.D., Professor of Ancient Topography in the University of Rome. 80. Lond. 1897. Price 16s. [Messrs. Macmillan & Co. Ltd., Bedford Street, Covent Garden.]

The Chippendale Period in English Furniture. By K. Warren Clouston. With illustrations by the Author. 40. Lond. & New York, 1897. Price 21s. [Messrs. Debenham & Freebody, Wigmore Street, London; Edward Arnold, 37, Bedford Street, Strand, London, and 70, Fifth Avenue, New York.]

A History of Renaissance Architecture in England, 1500-1800. By Reginald Blomfield, M.A. 2 vols. 40. Lond. 1897. Price 50s. net. [Messrs. George Bell & Sons, Covent Garden.]

The Dwelling House. By George Vivian Poore, M.D., F.R.C.P. With 36 illustrations. 80. Lond. 1897. Price 3s. 6d. [Messrs. Longmans, Green, & Co., 39, Paternoster Row, E.C.]

The Canon: an Exposition of the Pagan Mystery perpetuated in the Cabala as the Rule of all the Arts. With a Preface by R. B. Cuninghame Graham. 80. Lond. 1897. Price 12s. net. [Elkin Mathews, Vigo Street, W.]

Windows: a Book about Stained and Painted Glass. By Lewis Day, Author of "Nature in Ornament," and other Text-books in Design. 80. Lond. 1897. Price 21s. net. B. T. Batsford, 94, High Holborn, W.C.]

Decorative Heraldry: a Practical Handbook of its Artistic Treatment. By G. W. Eve. 80. Lond. 1897. Price 10s. 6d. net. [Messrs. George Bell & Sons, York Street, Covent Garden, W.C.]

Historic Ornament: Treatise on Decorative Art and Architectural Ornament. By James Ward, author of "The Principles of Ornament." 2 vols. 80. Lond. 1897. Price 7s. 6d. each. [Messrs. Chapman & Hall, 11, Henrietta Street, Covent Garden, W.C.]

Library Construction Architecture, Fittings and Furniture. By F. J. Burgoyne, M.A. Vol. II. of the Library Series edited by Dr. R. Garnett. 80. Lond. 1897. Price 6s. net. [Mr. George Allen, 156, Charing Cross Road.]

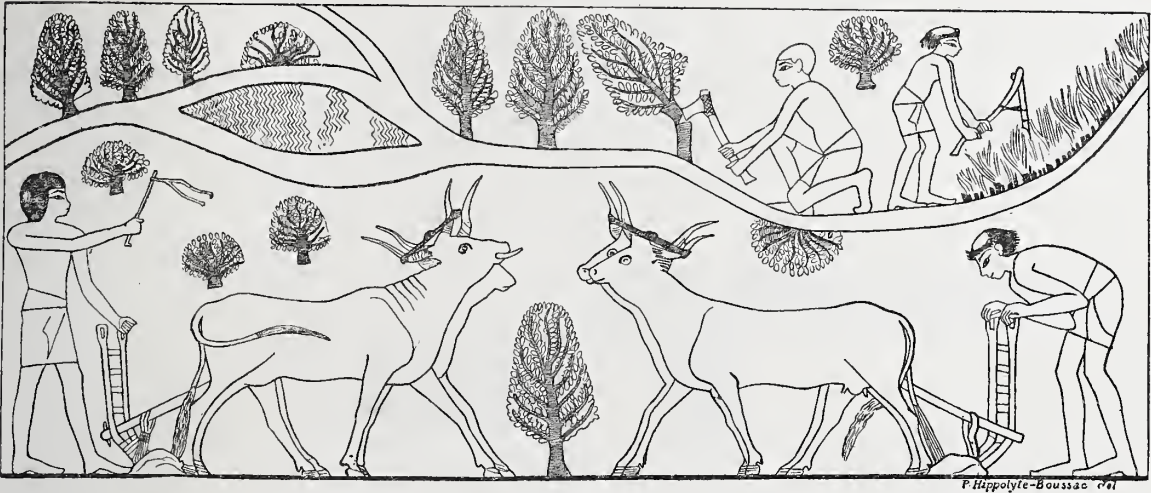
Modern Architecture: A Book for Architects and the Public. By H. Heathcote Statham, F.R.I.B.A., Editor of *The Builder*, Author of *Architecture for General Readers, Form and Design in Music, Changes in London Building Law, &c.* With numerous illustrations of contemporary buildings. 80. Lond. 1897. Price 10s. 6d. [Messrs. Chapman & Hall, 11, Henrietta Street, Covent Garden.]

MINUTES. II.

At the Second General Meeting (Ordinary) of the Session, held Monday, 15th November 1897, at 8 p.m., Professor Aitchison, A.R.A., *President*, in the Chair, the Minutes of the Meeting held 1st November 1897 [p. 24] were taken as read and signed as correct.

A Paper by Mr. Arthur S. Flower [A.], M.A., F.S.A., entitled NOTES ON RENAISSANCE ARCHITECTURE IN MALTA, WITH SPECIAL REFERENCE TO THE BUILDINGS OF THE ORDER OF ST. JOHN, illustrated by a large collection of photographs and specially prepared plans, was read by the author, and the same having been discussed, a vote of thanks was passed to him by acclamation, and briefly acknowledged.

The proceedings then closed, and the Meeting separated at 10 p.m.



TOMBEAU D'UN ASTROLOGUE THÉBAIN DE LA XVIII^E DYNASTIE.

Par P. HIPPOLYTE-BOUSSAC, Architecte (Paris).

L'ÉTUDE des syringes égyptiennes est du plus haut intérêt; en nous révélant, jusque dans ses moindres détails, la vie des premiers habitants de la vallée du Nil, les sujets qui se développent sur les parois de ces monuments nous permettent parfois de résoudre des questions historiques restées longtemps indécises. Les tombeaux des hauts fonctionnaires, dus à la générosité du pharaon, qui donnait ainsi une dernière marque d'estime à un serviteur dévoué, sont généralement traités avec le plus grand soin et d'une régularité irréprochable dans toutes leurs parties. Il n'en est pas toujours ainsi pour les sépulcres que des fonctionnaires d'ordre inférieur achetaient, tout faits, à des industriels établis dans les Memnonia, et qui, de même que les marbriers fixés aux abords de nos modernes nécropoles, vivaient de ce genre d'industrie. Mais si ces tombeaux préparés pour des inconnus présentent parfois quelques imperfections, elles sont généralement rachetées par l'intérêt qu'offrent les peintures qui les décorent et le soin avec lequel elles sont exécutées.

Tel est le monument que je présente à mes lecteurs.

Creusé dans la chaîne libyque au sommet d'un mamelon du Cheik-abd-el-Gournah, cet hypogée regarde l'orient. Il appartenait à un scribe du nom de Nakht (Fort), attaché au temple d'Ammon en qualité de Ounnout, c'est-à-dire d'homme de l'heure de ceux qui servent Ammon, fonction difficile à déterminer, mais dans laquelle on ne serait pas éloigné de recon-

[Translation.]

THE TOMB OF A THEBAN ASTROLOGER OF THE EIGHTEENTH DYNASTY

The study of the Egyptian tombs is of the highest interest, in that it reveals to us, down to its most minute details, the life of the first inhabitants of the valley of the Nile. The subjects which are developed on the walls of these monuments sometimes enable us to solve historical problems which have long remained obscure. The tombs of the high officials, due to the generosity of the Pharaoh who thus paid a last mark of esteem to a devoted servant, were generally erected with the greatest care and with irreproachable regularity in all their parts. This does not always hold in the case of the tombs of officials of lower rank, who used to buy them ready-made from manufac-

turers who had settled within the Memnonia, and, like the monumental masons who carry on their business near our modern cemeteries, made their living by this industry. But if these tombs prepared for unknown tenants sometimes present certain imperfections, they are generally redeemed by the interest offered by the paintings that decorate them and the care with which the latter are executed.

Such is the monument which I present to my readers.

Dug in the Libyan chain, on the top of a mamelon of the Cheik-abd-el-Gournah, this hypogeium faces the east. It belonged to a scribe of the name of Nakht (*strong*), attached to the Temple of Ammon as an Ounnout, that is to say, "a man of the hour of those who serve Ammon," a function difficult to determine, but one in which it would not be hard to recognise an astrologer. As to its date,

naitre un astrologue. Quant à sa date, bien que nul cartouche ne puisse, ici, nous la révéler, on peut approximativement l'établir à l'aide du martelage systématique du nom d'Ammon, partout où il était reproduit, et qui fournit un critérium certain, permettant d'en faire remonter l'origine à la première moitié de la XVIII^e dynastie et antérieurement à Amenhotep IV, c'est-à-dire à environ 1700 ans avant Jésus-Christ (près de trois siècles avant Moïse).

Ce sépulchre se compose de deux salles [fig. 1], dont l'une, celle du fond, ne possède qu'une niche destinée à recevoir la statue du défunt; c'est aussi dans cette pièce que se trouve le

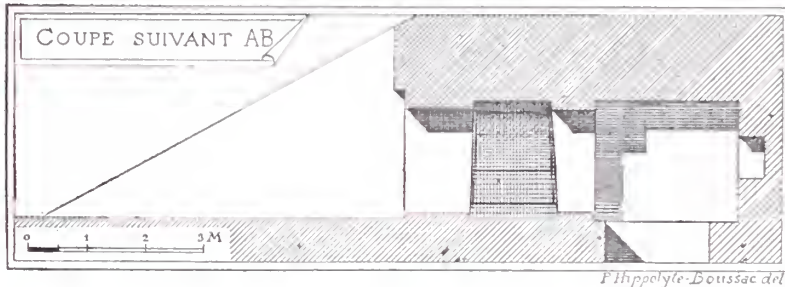
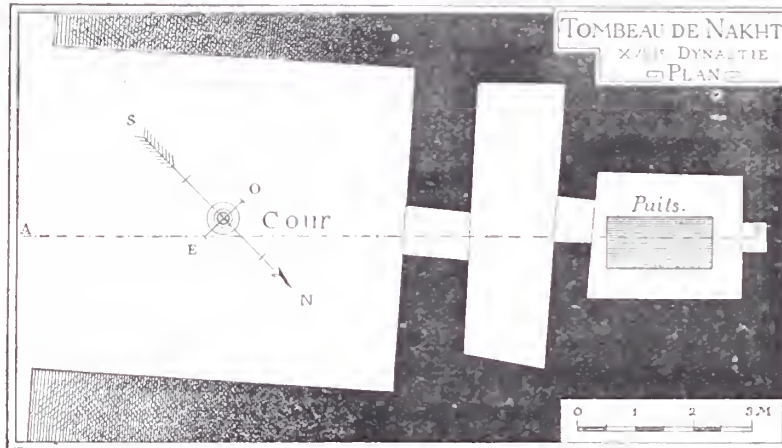


FIG. 1.

Hippolyte-Boussac del.

rendre compte de ses procédés; les traits de couleur rouge, indiquant la mise au carreau, y sont encore apparents. Comme dans tous les tombeaux de simples particuliers, ici les figures n'ont point ce caractère hiératique que l'on retrouve sur les parois des temples et des syringes

although no cartouche here can reveal it to us, we can fix it approximately by the systematic hammering of the name of Ammon wherever it was reproduced, which furnishes a sure criterion, allowing us to trace the origin to the first half of the Eighteenth Dynasty, before Amenhotep IV., that is to say to about 1700 B.C. (almost three centuries before Moses).

This sepulchre consists of two chambers [fig. 1]. of which the inner one possesses only a niche for the statue of the deceased; here also is the shaft leading to the cave in which were laid the mummy of Nakht and that of his wife. As to the outer chamber, the principal object of this sketch, it presents the form of a very long rectangle. Here, at definite periods, the relations and friends of the deceased gathered together for the dead watches and the celebration of certain anniversaries; here, also, took place

the *inferiæ*, sacrificial banquets in honour of the dead. The sides of this chamber are ornamented with paintings, which, in spite of an existence of nearly 4,000 years, have kept the glow and freshness of their first days. The majority of them, left unfinished by the Theban artist, give us an insight into his processes: streaks of red, indicating the division into squares, are still discernible. As in all tombs of ordinary private individuals, the faces here have not that hieratic character which is found on the walls of temples and royal tombs; it is a freer, more familiar art, much less known. All proportion kept, it is to religious or symbolical art what the little statuette of Tanagra are to the great conceptions of Greek sculpture. The animals especially are treated with a perfection which one may deny to have ever been surpassed. We shall examine successively the various scenes which these pictures reproduce.

royales ; c'est un art plus libre, plus familier, beaucoup moins connu. Toutes proportions gardées, il est à l'art religieux ou symbolique ce que les figurines de Tanagra sont aux grandes conceptions de la sculpture grecque. Les animaux surtout y sont traités avec une perfection qui, peut-on affirmer, jamais ne fut dépassée. Nous allons examiner successivement les différentes scènes que ces peintures reproduisent.

Chacune des grandes parois, celle de l'est et celle de l'ouest, est divisée en deux panneaux, de grandeur à peu près égale, par la porte d'entrée et une porte intérieure. Comme il n'est pas indifférent de commencer l'examen plutôt d'un côté que d'un autre, nous allons examiner d'abord la partie méridionale de la paroi sud-est. Elle nous montre en plusieurs registres superposés diverses scènes relatives à la culture des céréales. Dans la partie inférieure s'étend la plaine de l'Égypte, traversée par un chemin ombragé d'arbres aux multiples essences, et qui, vers le centre de la composition, enserre un lac dont la nappe est ridée de légers frissons. Disséminés çà et là au milieu des champs, des ouvriers sont en train de vaquer aux travaux agricoles [*vide vignette*, p. 53]. Celui-ci arrache les mauvaises herbes qui, de toutes parts, poussent à profusion, celui-là abat un arbre. Plus loin deux individus sont en train de piocher la terre, tandis que d'autres procèdent à l'ensemencement du blé et du lin. Ici deux ouvriers armés de maillets brisent les mottes de terre, et là un de leurs camarades vient étancher sa soif à une outre suspendue aux branches d'un grand arbre. Voici deux laboureurs conduisant chacun son attelage : l'un, jeune et vigoureux, sans le moindre effort dirige sa charrue : l'autre, un vieil esclave, sans doute, s'appuie sur le soc et semble avoir quelque peine à faire sa besogne. Enfin à l'extrémité droite de la composition Nakht, assis sous un kiosque, surveille ses serviteurs. Immédiatement au-dessus du labourage des moissonneurs fauchent le blé et des femmes vêtues de blanc récoltent le lin. Enfin le vannage et le mesurage du blé occupent le registre supérieur. Ici comme dans le bas Nakht, assis sous un kiosque, un bâton à la main, surveille ses domaines.

Par ces images les Egyptiens croyaient assurer la nourriture du double qui, du fond de la tombe, venait faire de fréquentes apparitions dans le monde des vivants ; une ombre se nourrissait d'une ombre. Mais les gâteaux de froment ne constituaient qu'une faible partie de cette nourriture ; des viandes succulentes, des vins capiteux, des parfums odoriférants, etc., devaient aussi être déposés sur l'autel pour assurer l'existence des mânes et leur concilier les dieux. Les scènes figurées sur les autres parois vont nous montrer comment on complétait cette nourriture divine exigée par les rites.

A de rares exceptions près, les vendanges, les scènes de chasse et de pêche sont généralement reproduites à droite de la porte intérieure. En deux registres superposés ces différents sujets sont peints, ici, à leur place respective. La pêche à la traîne occupe l'extré-

Each of the great walls, that of the east and that of the west, is divided into two panels of almost equal size by the entrance door and by an inner door. As it is not a matter of indifference whether we begin the examination on one side rather than on another, we shall examine first the southern part of the south-east wall. It shows us, in several superimposed compartments, various scenes relating to the cultivation of cereals. In the lower part stretches the plain of Egypt, across which runs a road shaded by trees of manifold essences, which road, towards the middle of the composition, encircles a lake whose surface shivers with faint ripples. Labourers, dotted here and there about the fields, are busy at their agricultural toil [*vide headpiece*, p. 53]. This one is tearing up the weeds which grow everywhere in profusion ; that one is felling a tree. Further away, two individuals are digging the soil, whilst others are in the act of sowing corn

and flax. Here two labourers, armed with mallets, are breaking up the clods of earth, and there one of their companions is quenching his thirst from a wine-skin hanging from the branches of a large tree. Two ploughmen are driving their teams : one, young and sturdy, guides his plough without the slightest effort ; the other, apparently an old slave, leans upon the ploughshare and seems to be accomplishing his task with difficulty. Finally, at the extreme right of the composition, Nakht, sitting under a kiosk, keeps an eye upon his servants. Immediately above the ploughing scene harvesters reap the corn, and women, clothed in white, gather in the flax. Last of all the winnowing and measuring out of the corn occupy the upper compartment. Here, as below, Nakht, sitting under a kiosk, with a stick in his hands, watches over his domains.

By means of these pictures the Egyptians thought they

mité droite de la frise inférieure. Plus loin un individu est en train de plumer les oiseaux aquatiques que l'on vient de prendre, tandis que, sous un hangar, un second personnage les sale et les accroche ensuite à une poutre d'où ils sont retirés pour être déposés dans les jarres placées non loin de là [fig. 2]. Au-dessus se développe la scène des vendanges. Les raisins, cueillis à une treille, sont jetés dans une cuve et foulés par six individus [fig. 3].



FIG. 2.

P Hippolyte-Boussac del

Après les travaux des champs les plaisirs de la chasse et de la pêche ; dans le registre du haut, en deux tableaux affrontés, Nakht, accompagné de sa famille et monté sur un canot, est au milieu des marais dans un fourré de lotus d'où s'échappent toutes sortes de volatiles, cailles, oies, canards, papillons, libellules, etc. A droite il harponne deux poissons laissés inachevés par l'artiste thébain.

could assure the sustenance of the Double, who, emerging from the depths of the tomb, made frequent appearances in the world of the living, a shade thus finding sustenance in a shadow. But the wheaten cakes composed only a small part of this food. Succulent meats, strong wines, savoury perfumes, &c. must also be placed upon the altar to provide means of subsistence for the Manes and to propitiate the gods towards them. The scenes depicted on the other walls will show us how they completed this divine food demanded by the rites.

With rare exceptions the vintages, the hunting and fishing scenes, are generally reproduced to the right of the inner door. In two superimposed compartments these different subjects are painted in their respective places.

Trawl-fishing occupies the right extremity of the lower frieze. Further on, an individual is in the act of plucking the waterfowl which have just been caught ; whilst, under a shed, a second personage salts them and hangs them up afterwards to a beam, whence they are detached, so as to be put in the jars not far off [fig. 2]. Above is displayed the vintage scene. The grapes gathered from a trellis are thrown into a winepress and trodden by six individuals [fig. 3].

After the labours of the fields come the pleasures of hunting and fishing. In the upper compartment, in two adjoining panels, Nakht, accompanied by his family, is sitting in a small boat among the marshes in a clump of lotus, whence escape all kinds of winged things—quails,

La chasse au boumérang* fait face à la pêche. Sur le rivage des serviteurs assistent à ces divers exercices ; l'un d'eux tient à la main le bâton et les sandales de son maître. "Il s'amuse, il se donne du bon temps, Nakht," nous dit l'inscription. Comme dans la scène des



FIG. 3.

P. Hippolyte-Boussac del.

travaux agricoles Nakht est assis sous un kiosque, mais au lieu d'être seul il a, assise à ses côtés, "sa sœur chérie, dame de sa maison," qui est également son épouse.† Cette dame est chanteuse d'Ammon et répond au nom de Taoui. Des serviteurs apportent aux deux époux le produit de la chasse et de la pêche.

Nakht est allé voir les lieux où sont ses pères, mais sa mémoire est chère à tous les siens, car ses parents et ses amis, réunis dans le sépulcre, viennent souvent y célébrer, en

* Cette chasse est encore de nos jours en usage en Australie.

† Les Egyptiens se mariaient entre frère et sœur.

geese, ducks, butterflies, dragon-flies, &c. To the right he is harpooning two fish, left unfinished by the Theban artist.

Hunting with the boomerang* faces the fishing. Servants watch these various exercises from the bank; one of them is holding his master's stick and sandals. "Nakht amuseteth himself and taketh his pleasure," the inscription tells us. As in the field-work scene, Nakht is sitting under a kiosk, but instead of being alone he has

at his side "his beloved sister, the Lady of his House," who is also his wife.* This lady is a singer of Ammon, and answers to the name of Taoui. Servants bring the pair the produce of the chase and of the fishing.

Nakht has gone to visit the spots where his fathers are, but his memory is dear to all his folk, for his friends and relations, gathered together in the tomb, often celebrate there,

* This mode of sport is practised to-day in Australia.

* Marriage between brother and sister was common among the Egyptians.

son honneur, quelque fête commémorative et faire les agapes funéraires. Telle est la scène qui occupe la paroi à gauche de la porte intérieure. Une partie de cette composition a, malheureusement, été détruite, et ce qui reste fait vivement regretter la perte de ce qui a disparu.



FIG. 4.

F. Hippolyte-Bouissac del

Dans le bas de la composition, à droite (du spectateur), Nakht et sa compagne, assis côte à côte, assistent aux agapes célébrées en leur honneur. Un chat, commensal de la dame

in his honour, some commemorative festival and hold the funeral banquet. Such is the scene which occupies the wall to the left of the inner door. Unfortunately a portion

of this composition has been destroyed, and what remains awakens keen regret for the loss of what has disappeared.

At the bottom of the composition, to the right (of the

Taoui, placé près du siège de sa maitresse, se régale d'un poisson qu'on lui a abandonné. Debout en avant des défunts, leur fils Amenemap présente à ses parents des fleurs et des fruits. Derrière celui-ci se développe la salle du festin, où des convives, hommes et femmes, sont assis les uns sur des sièges, les autres sur des nattes. Des musiciens et des danseuses égayent cette fête. Accroupi sur ses genoux, un aveugle tire de sa harpe des sons harmonieux. Derrière lui des jeunes femmes, dont la noire chevelure s'épand sur leurs épaules en des flots abondants, sont couronnées de fleurs, et, assises sur des nattes, devisent entre elles. Revêtues de tuniques transparentes lamées de flammes de safran, elles ont les oreilles ornées de larges anneaux d'or, et à leurs gorges scintillent des colliers enrichis de grenats, d'émeraudes et de lapis-lazuli. Au registre supérieur des almées, sommairement vêtues, jouent de la double flûte, de la harpe et du nebel [fig. 4].

Toute cette composition est charmante de couleur, et le caractère hiératique que l'on trouve ordinairement sur les œuvres de l'art égyptien est ici fort peu apparent. Les deux parois extrêmes nous montrent, celle du midi, une stèle en simili granit, au devant de laquelle sont déposées toutes sortes d'offrandes, gâteaux de froment, raisins, grenades, quartiers de veau, rognons, côtelettes, etc. La dame des sycomores, Hathor, apporte aussi ses offrandes; elle est suivie de nombreux serviteurs qui d'abord s'échelonnant de chaque côté de la stèle se développent ensuite sur la paroi opposée. Enfin des deux côtés de la porte d'entrée des serviteurs égorgent une victime que Nakht et son épouse offrent en holocauste à la divinité.

Tel est ce tombeau dont les peintures sont si bien conservées qu'on pourrait les croire l'œuvre d'un artiste contemporain. Des monuments de ce genre existent en grand nombre dans l'antique nécropole thébaine, et la plupart d'entre eux ont odieusement été saccagés par des mains barbares. Aussi y aurait-il grand mérite de reproduire soigneusement tous ces souvenirs du passé, qui, réunis et méthodiquement classés, formeraient un merveilleux recueil où l'on retrouverait non seulement tous les genres de peintures cultivés par les anciens Egyptiens, mais encore les détails les plus précieux et les plus exacts sur leur manière de vivre.

spectator), Nakht and his companion, sitting side by side, are present at the banquet held in their honour. A cat, the house companion of the Lady Taoui, placed near his mistress's seat, is feasting off a fish that has been thrown him. Standing in front of the deceased, their son Amenemap offers flowers and fruit to his parents. Behind him extends the banquet hall, where men and women guests are sitting, some on chairs and others on mats. Musicians and dancers add gaiety to the feast. Squatting on his knees a blind man draws melodious strains from his harp. Behind him young women, whose black hair is scattered in profusion over their shoulders, are crowned with flowers, and, sitting on mats, converse among themselves. They are clad in transparent tunics embroidered with saffron flames; their ears are adorned with broad gold rings, and at their throats gleam necklaces enriched with garnets, emeralds, and lapis lazuli. In the upper compartment Indian dancing girls, summarily clad, play on the flute, the harp, and the nebel [fig. 4].

The whole of this composition is charming in colour, and the hieratic character usually found in works of Egyptian art is here very little apparent. Of the two

extreme walls that of the south shows a granite stela, before which are laid all kinds of offerings—wheaten cakes, grapes, pomegranates, quarters of veal, kidneys, cutlets, &c. The Lady of the Sycamores, Hathor, also brings her offerings: she is followed by numerous servants, who at first are lined on either side of the stela, and then are continued upon the opposite wall. Lastly, on both sides of the entrance door, servants are slaughtering a victim, which Nakht and his wife offer as a holocaust to the deity.

Such is this tomb whose paintings are still so well preserved that one might take them to be the work of a contemporary artist. Monuments of this kind exist in great numbers in the old Theban necropolis, and the majority of them have been hatefully despoiled by barbarian hands. So there would be great merit in carefully reproducing all these mementoes of the past, which, collected and methodically classified, would form a marvellous collection, in which would be found, not only every kind of painting cultivated by the ancient Egyptians, but also the most precious and the most minute details of their manner of life.



9, CONDUIT STREET, LONDON, W., 4th December 1897.

CHRONICLE.

THE NOVEMBER EXAMINATIONS.

The results of the November Examinations, as duly announced at the Meeting of Monday, the 29th ult., are as follows:—

The Preliminary: Newly registered Probationers.

The Preliminary Examination, to qualify for registration as *Probationer R.I.B.A.*, was held in London, Manchester, and Bristol on the 9th and 10th ult. Of the 113 candidates admitted, claims for exemption by thirty-three were allowed, and the remaining eighty examined, with the following results:—

	Number examined	Passed	Relegated
London	53	34	19
Manchester	21	12	9
Bristol	6	1	5
	80	47	33

The names of the successful candidates, including those exempted—making a total of eighty—have been entered on the Register of Probationers, and are here printed in alphabetical order:—

ARCHER: Edward Percy; Fairlea, Etchingam Park, Church End, Finchley, N. [*Master*: Mr. E. A. E. Woodrow *].

BAX: Edwin George Goodson; 45, Rosenthal Road, Catford, S.E. [*Master*: Mr. Thomas Dinwiddy].

BINNEY: William Leaycraft; 118, Adelaide Road, Hampstead, N.W. [*Masters*: Messrs. Read * & MacDonald *].

BIRCHENALL: Charles Alfred; Thorn Bank, Guest Road, Prestwich [*Masters*: Messrs. Maxwell & Tuke].

BLANC: Louis; 17, Strathearn Place, Edinburgh [*Master*: Mr. Hippolyte J. Blanc, R.S.A.].

BODEN: Leonard; Beech Mount, Langham Road, Bowdon, Cheshire [*Masters*: Messrs. Mills & Murgatroyd].

BRIGGS: George Hamilton; c/o P. H. Adams, Esq., 65, Leadenhall Street, E.C. [*Master*: Mr. P. H. Adams *].

CALDWELL: Robert Whitelaw; 83, Finlay Drive, Glasgow [*Masters*: Messrs. Clarke & Bell].

CHENNELLS: Ernest William; 31, High Street, Hemel Hempstead, Herts [*Master*: Mr. W. H. Syme *].

CLARKE: John Daniel; 84, Lancaster Road, Kensington Park, W. [*Master*: Mr. Arthur Green *].

COOKE-YARBOROUGH: Arthur Capel; South-Eastern College, Ramsgate.

CRAIG: William; 8, Stockwell Park Walk, Brixton, S.W. [*Master*: Mr. G. T. Hine *].

CUBITT: Horace William; Langham House, Gordon Road, Lowestoft [*Master*: Mr. J. W. Cockrill *].

DADD: Charles John Thomas; 13, Spring Gardens, S.W. [*Master*: Professor Banister Fletcher *].

DEAN: William Stanley; Hughenden, Westby Road, Boscombe, Bournemouth [*Master*: Mr. G. A. Blich Livesay *].

EDDISON: Henry; e/o H. G. Gamble, Esq., Bank Street, Lincoln [*Master*: Mr. Henry G. Gamble *].

ELMS: Edward Furness Marson; 16, Buckingham Palace Road, S.W. [*Master*: Mr. H. O. Cresswell *].

EWING: James; 70, Church Street, Berwick-on-Tweed [*Masters*: Messrs. James Stevenson & Son].

FERRIER: Claude Waterlow; 34, Cavendish Square, W. [*Master*: Mr. Aston Webb *].

FORSTER: Frank Jamieson; Harewood Hill, Darlington [*Master*: Mr. W. J. Moscrop *].

GOLDSMITH: Henry Liversage; 16, Bellevue Road, New Southgate [*Master*: Mr. F. H. Jones].

GOOD: David; 91, Highbury Hill, N. [*Master*: Mr. Ernest Flint *].

GREIG: Baxter; 90, Shenley Road, Camberwell, S.E. [*Master*: Mr. G. E. Nield *].

GRUNDY: Charles Frederick; 25, Baxter Gate, Loughborough, Leicestershire [*Master*: Mr. G. H. Barrow-cliff].

GULLEY: Frederick Elford; 4, Palmer Street, Wrexham, N. Wales [*Master*: Mr. M. J. Gummow *].

HEATON: Charles Herbert; 54, Earl Street, Wigan, Lancashire [*Masters*: Messrs. Heaton & Ralph].

HENDERSON: Harold Edgar; 12, Ridge Road, Upper Armley, Leeds [*Master*: Francis W. Belford *].

HEWITT: Stanley Goodison; 82, Shrewsbury Road, Birkenhead University College, Liverpool.

HILL: Thomas Jackson; 229, Oldham Road, Longsight, near Oldham [*Master*: Mr. Fred. W. Dixon].

HOLSTEAD: Abraham; 46, Hopwood Lane, Halifax, Yorks [*Masters*: Messrs. Petty & Ives].

HORTH: Frederic John; The Shawberries, Shustoke, near Birmingham [*Masters*: Messrs. Ingall & Son].

HOSKING: Reginald; Wyndham Place, Bryanston Square, W. [*Master*: Mr. Henry Hall *].

JAQUES: Thomas Arnold; 29, Dartmouth Park Avenue, N.W. [Polytechnic School of Architecture].

JONES: Robert Cadwaladr; 1, Chapel Street, Menai Bridge [*Master*: Mr. Joseph Owen].

KNIGHT: Frederick William; Darley, Cottenham Park, Wimbledon [*Master*: Mr. Frederick G. Knight *].

LING: Frederick Allen; The Homestead, Wimborne Road, Winton, Bournemouth [*Masters*: Messrs. Jennings & Goater].

LONGHURST: Albert Henry; The Woodlands, Barnes Common, S.W. [*Master*: Mr. Charles E. Sayer *].

MACKENZIE: John Arthur Kerr; Waterford, Exeter Road, Bournemouth [*Masters*: Messrs. Jennings & Goater].

MARTIN: William; c/o Messrs. Parker & Unwin, The Quadrant, Buxton [*Masters*: Messrs. Parker & Unwin].

MELDRUM: Alexander Robert; 92, Bonnymuir Place, Aberdeen [*Master*: Mr. A. H. L. Mackinnon *].

MORLEY: Frederick Louis; Lowell House, Herbert Avenue, Meirion, co. Dublin [*Master*: Mr. G. P. Sheridan *].

MOSS: Charles Percy; 58, Ashley Road, Crouch Hill, N. [*Master*: Mr. Henry Blackburn *].

NATHAN: Percy Phineas; 53, St. Charles Square, Notting Hill, W. [*Masters*: Messrs. Francis Chambers * & Son *].

NAYLOR: James John Sydney; 68, Hereford Road, W. [*Master*: Mr. E. W. Jennings *].

NEW : Claude Edward ; 62, George Street, Portman Square, W. [*Masters* : Messrs. New & Son*].

NORMAN : Geoffrey ; 21, Cadogan Square, W. [*Master* : Mr. F. W. Hunt*].

ONIONS : George Harry ; 34, Fisher Street, Great Bridge, Tipton, Staffs [*Master* : Mr. Alfred Long].

PAGE : George Montague ; 7, Dryden Street, Nottingham [*Master* : Mr. G. S. Doughty].

PETCH : Joseph Herbert ; Stepney Rise, Scarborough [*Master* : Mr. J. Caleb Petch].

PROCTER : Paley ; 14, Gray's Inn Square, W.C. [*Masters* : Messrs. Schultz & Troup*].

REYNOLDS : Harry Martin ; c/o Henry G. Gamble, Esq., Bank Street, Lincoln [*Master* : Mr. Henry G. Gamble*].

RIDER : Frank Victor ; 156, Lancaster Road, Notting Hill, W. [Polytechnic Architectural School].

ROBERTS : Richard McMinnies ; Rock Villas, Latchford, Warrington [*Master* : Mr. Wm. Owen*].

ROLLO : Andrew ; 6, Willowbank Crescent, Glasgow [*Masters* : Messrs. Malcolm Stark & Rowntree].

ROTHWELL : Edwin ; Brentwood, Walkden, near Bolton [*Master* : Mr. J. R. Earnshaw*].

ROYDS : George Freeman ; St. Mary Bourne, near Andover, Hants [Reading School].

RUSSELL : George Leonard ; 9, Morpeth Road, South Hackney, N.E. [*Master* : Mr. Edmund Woodthorpe*].

SALISBURY : Arthur Henry ; Limbrick Hall, Harpenden, Herts [*Masters* : Messrs. Burch & Forge*].

SAMSON : Harold Overall ; The Laurels, Taunton, Somerset [*Master* : Mr. C. H. Samson*].

SEARLE : Norman Odell ; 35, Macaulay Road, Clapham Common, S.W. [Manor House School].

SHEPPARD : George Henry ; 116, Pyle Street, Newport, I.W. [*Master* : Mr. E. A. Swane].

SIMPSON : Hugh Dykes ; Nursery Street, Kilmarnock [*Master* : Mr. Thomas Smellie].

SMART : John Gordon ; 13, Brunswick Street, Hillside, Edinburgh [*Master* : Mr. Hippolyte J. Blanc, R.S.A.].

SMITH : Horace Frank ; 13, Acramans Road, Southville, Bristol [*Master* : Mr. Geo. H. Oatley].

STRATTON : Frank Edward ; Quidhampton, Salisbury, Wilts [*Master* : Mr. A. C. Botham].

STUBBS : Rowland ; Fern Villa, Winsford, Cheshire [University College, Liverpool].

STURDY : Philip ; The Wick, Branksome Park, Bournemouth [*Master* : Mr. G. A. Bligh Livesay*].

SWARBRICK : John ; 11, Circular Road, Wittington, Manchester [*Master* : Mr. Joseph Swarbrick].

TANNER : Albert Stringer ; 29, Pelham Place, South Kensington, S.W. [*Master* : Mr. A. W. Tanner*].

TEBBUTT : Horace ; 29, Waldeck Avenue, Bedford [*Masters* : Messrs. C. E. Malloes & Grocock].

THACKER : Alfred Dennis ; Strathearne, Rushall Road, Walsall [*Masters* : Messrs. Bateman & Bateman*].

TWIZELL : Robert Percy Sterling ; 133, Cromwell Street, Newcastle-on-Tyne [*Masters* : Messrs. Hick & Charlewood*].

WALKER : George ; Clyde Villa, Barrow-in-Furness [*Master* : Mr. John Butler].

WALKER : John Wilson ; Hillside House, Portlethen, Aberdeen [*Master* : Mr. R. G. Wilson].

WARWICK : Septimus ; 98, Lancaster Road, North Kensington, W. [*Master* : Mr. Arthur Vernon].

WILES : Ralph Cunningham ; 30, Kew Road, Richmond, S.W. [*Master* : Mr. Frank J. Brewer*].

WILSON : Charles Braithwaite ; 5, Bank Field, Kendal [*Master* : Mr. John F. Curwen*].

WILSON : Robert Gordon ; 12, Belgrave Terrace, Aberdeen [*Master* : Mr. R. G. Wilson].

WOOD : Joseph John ; 27, Cardigan Road, Leeds [Yorkshire College].

WOODWARD : Charles ; 13, Southampton Street, Strand, W.C. [*Master* : Mr. Wm. Woodward*].

The asterisk (*) denotes members of the Institute.

The Intermediate : Newly registered Students.

The Intermediate Examination, to qualify for registration as *Student R.I.B.A.*, was held in London, Manchester, and Bristol, on the 9th, 10th, 11th, and 12th ult. Sixty-four candidates were examined, with the following results :—

	Number examined	Passed	Relegated	Failed
London	54	29	24	1
Manchester	8	4	4	—
Bristol	2	2	—	—
	64	35	28	1

The successful candidates have been registered as *Students R.I.B.A.*, and their names, placed by the Board of Examiners in order of merit, here follow :—

ADSHEAD : Charles Thomas [*Probationer*] ; 9, Poplar Grove, Stepping Hill, Stockport [*Masters* : Messrs. Woodhouse* & Willoughby*].

HAYWARD : George Whitehead [*Probationer* 1894] ; 217, Upper Brook Street, Manchester [*Masters* : Messrs. Horton & Bridgford*].

NOBBS : Percy Erskine, M.A. [*Probationer* 1897] ; 4, Comelybank, Edinburgh [*Master* : Mr. R. S. Lorimer*].

BIRD : Iennox Godfrey [*Probationer* 1895] ; Royal Marine Barracks, Chatham [*Master* : Mr. G. H. Fellowes Prynne*].

MOULD : Stuart Mill [*Probationer* 1894] ; 36, Salters Road, Gosforth, Newcastle-on-Tyne [*Masters* : Messrs. Badenoch & Bruce].

MILLS : John Donald [*Probationer* 1892] ; Marsbank, Tayport, Fifeshire, N.B. [*Master* : Mr. J. Murray Robertson*].

HARDING : George Robinson Cuthbert [*Probationer* 1897] ; Lindum, Beckenham, Kent [*Master* : Mr. Ernest R. Barrow*].

GREEN : Leslie William [*Probationer* 1891], Sumptermead, Datchet, Bucks [*Master* : Mr. Arthur Green*].

HAMP : Stanley Hinge [*Probationer* 1896] ; Park House, Alperton, Wembley [*Master* : Mr. T. E. Collett].

KNIGHT : Edward Frost [*Probationer* 1896], North Bank, Oakleigh Park, N. [*Master* : Mr. George Baines*].

GREGORY : Leolin Charles [*Probationer* 1895] ; 29, Shaftesbury Road, Ravenscourt Park, W. [*Master* : Mr. A. B. Burnell*].

GIBBINS : Arthur Everett [*Probationer* 1895] ; 3, Vernon Terrace, Brighton [*Master* : Mr. J. G. Gibbins*].

MAC GIBBON : Alfred Lightly [*Probationer* 1895] ; 23, Learmouth Terrace, Edinburgh [*Master* : Dr. R. Rowand Anderson].

FRANCK : James Ernest [*Probationer* 1893] ; 44, Boundary Road, St. John's Wood, N.W. [*Master* : Mr. R. E. Tyler*].

BENSTED : Sidney Walter [*Probationer* 1893] ; 11, Wakehurst Road, Wandsworth Common, S.W. [*Master* : Mr. C. Stanley Peach*].

HONAN : Matthew [*Probationer* 1896] ; 31, James Street, Liverpool [*Masters* : Messrs. Grayson* & Ould].

BOTTERILL : Austin Barugh [*Probationer* 1895] ; Kew Lodge, Kew Road, Weston-super-Mare [*Masters* : Messrs. Henry Crisp & Oatley].

RODWAY : Ernest George [*Probationer* 1895] ; 6, St. John's Terrace, Weston-super-Mare [*Master* : Mr. H. Dare Bryan].

NEWCOMBE: Charles Frederick [*Probationer* 1892]; Erlsmead, Gosforth, near Newcastle-upon-Tyne [*Master*: Mr. W. Lister Newcombe*].

BENNETT: Charles Herbert [*Probationer* 1895]; Foden Bank, Macclesfield [*Master*: Mr. C. H. Heathcote*].

ALLEN: Francis Henry [*Probationer* 1895]; 28, High Street, Kettering [*Master*: Mr. Ingman].

ANSON: Henry Percy Richmond [*Probationer* 1895]; 159, Denmark Hill, S.E. [*Master*: Mr. Langton Cole*].

BATES: Ernest [*Probationer* 1894]; Oak Lodge, Thornton Heath [*Masters*: Messrs. Gordon, Lowther, & Gunton].

BIGGS: Alfred Ernest [*Probationer* 1895]; 56, Penschurst Road, South Hackney, N.E. [*Master*: Mr. Rowland Plumbe*].

BISHOP: John Percival [*Probationer* 1896]; Kline House, London Road, Forest Hill, S.E. [*Master*: Mr. W. W. Gwynter].

BOURNE: Walter Hargreaves [*Probationer* 1895]; 29, West End Lane, West Hampstead, N.W. [*Master*: Mr. Edwin J. Stubbs].

COPLAND: George Donaldson [*Probationer* 1895]; 20, Sandyford Place, Glasgow [*Masters*: Messrs. Clarke & Bell].

GILFORD: Hubert Ernest [*Probationer* 1895]; Edwalton Lodge, Edwalton, near Nottingham [*Master*: Mr. A. W. Brewill*].

JARDINE: Henry [*Probationer* 1895]; 63, King's Road, Queen's Road, Peckham, S.E. [*Master*: Mr. Thomas Blashill*].

MERILLE DE COLLEVILLE: Henry Louis Emile [*Probationer* 1895]; 24, Chatham Place, Brighton [*Masters*: Messrs. Anthony & Dixon].

ROE: Arthur Henry [*Probationer* 1893]; 55, Dalrymple Road, Brookley, S.E. [*Master*: Mr. Lewis Angell*].

SALMON: Nathan Thomas [*Probationer* 1895]; Castle Street, Reading [*Master*: Mr. Galt Millar].

SMITH: Frederick John Osborne [*Probationer* 1893]; 7, Old Queen Street, Westminster, S.W. [*Master*: Mr. J. Osborne Smith*].

SPALDING: Reginald Henry [*Probationer* 1894]; 3, Lyndhurst Road, Hampstead, N.W. [*Masters*: Messrs. Spalding* & Cross*].

TORRANCE: Andrew Mitchell, jun. [*Probationer* 1893]; Clydesdale, 16, Highbury Quadrant, N. [*Master*: Mr. Wm. Young*].

The Final: Qualifying for Candidature as Associate.

The Final and Special Examination, held in London only, began on the 19th ult., and closed on the 25th. Of the twenty candidates admitted, nine passed, and the remaining eleven were relegated to their studies. The names of those passed, and who, subject to Section 8 of the Charter, have become qualified for candidature as Associate, are as follows:—

DUTHOIT: John Frederick [*Probationer* 1892, *Student* 1895]; 6, Claremont Place, Dover.

HOBSON: Laurence [*Probationer* 1893, *Student* 1896]; 14, Hale Road, Liscard, Cheshire [*Arthur Calcs Prizeman*].

HULBERT: William Charles; 10, Stanley Road, Wimbledon.

MCCULLOCH: William; 1, St. Mary Street, St. Andrews, Fife, N.B.

MAYNARD: Dudley Christopher [*Probationer* 1893, *Student* 1895]; 31, Westbourne Park Road, W.

MORTON: Ralph Henry [*Probationer* 1890, *Student* 1894]; 2, Whitehall Court, S.W.

ORMROD: John [*Probationer* 1891, *Student* 1895]; 29, Royal Avenue, Chelsea.

PEARSON: Harry John [*Probationer* 1895, *Student* 1897]; 49, Parliament Street, S.W.

SHEPHERD: Herbert [*Probationer* 1892, *Student* 1894]; 19, Larkfield Road, Richmond, Surrey.

The asterisk (*) denotes members of the Institute.

The following table shows the number of failures among the relegated candidates in each subject of the Final Examination:—

I. Design	9
II. History of Architecture	6
III. Mouldings, Features, &c.	6
IV. Principles of Hygiene	3
V. Materials	2
VI. Strength of Materials	1
VII. Construction	2
VIII. Specifications	1
IX. Professional Practice	1

The Examinations: Revised Scheme.

The subjoined Report, drawn up by the Board of Examiners, has been approved and adopted by the Council, and regulations framed in accordance with its recommendations are to come into operation for the Examinations in June 1898.

Report to the Council on the General Arrangements of the Examinations.

The Board, having carefully considered the general arrangements of the Examinations, beg leave to report that they believe some simplification is desirable, particularly such a rearrangement of subjects as will prevent their overlapping; and a modification in the work required as "Testimonies of Study."

They consider generally that the Preliminary Examination (No. 1) should be treated as the test of all subjects coming under the head of General Education; the Intermediate (No. 2) the test of Elementary Architectural Studies; and the Final (No. 3) as that of advanced architectural studies and of Practical Knowledge.

It is thought undesirable to retain the separation into Art and Science Sections.

The Board propose that the Outlines of the History of Mediæval and Renaissance Architecture in Europe should be included in the Intermediate Examination; Sketches in Perspective of Details and Ornament should also be required.

In the Final Examination (No. 3) it is proposed that the Candidate's attention should be concentrated on those subjects which will claim his care in the practice of architecture.

The Board consider that more weight should be given to the Testimonies of Study, which have hitherto been merely regarded as qualifying or disqualifying for admission to the Examination.

The following schemes are recommended:—

That those testimonies which, after examination by the Board, are marked "excellent" should receive an Honorary Mention; and further:

That a certain number of marks (not exceeding 10) should be allocated to each Sheet

of Testimonies, and allotted at the Oral Examination by the Examiners taking the several subjects.

Suggested Testimonies of Study.

In a good course of training a large number of these studies will necessarily be prepared. Those specified below will be looked upon as the smallest number which may be selected and submitted, in order to enable the Examiners to ascertain the fitness of Probationers or Students for admission to the Examinations.

INTERMEDIATE EXAMINATION.

1 and 2. Two sheets, giving examples (one on each sheet) of any two of the Orders of Architecture here named—the Doric, the Ionic, or the Corinthian—drawn in outline with the ornament and enrichments filled in; each sheet to contain two columns of one Order with entablature complete, drawn to scale (the columns being not less than 10 inches high on the paper) and details to three times the scale of the columns.

3. One sheet of details of Classic Ornament from the round, in outline.

4 and 5. Two sheets, containing examples (one on each sheet) of any two of the Periods here named—the Early English, the Decorated, or the Perpendicular—such as a door, a window, or an arcade, in plan, elevation, and section, with details of Mouldings and Ornament relating to such examples.

6. One sheet of Medieval Ornament—freehand drawing from the round, in outline.

A concise description, giving such particulars as may be accessible, of the building or buildings from which the several subjects are taken, with the dates of erection and other details, illustrated by sketches of plan, general elevation, &c., and written on foolscap paper, on one side only—the whole to be the work of the Probationer's own hand.

* * It is desirable that some of the drawings submitted should be from actual measurement by the Probationer.

Probationers R.I.B.A. who are Architectural Students of the Royal Academy are permitted, in lieu of the Testimonies of Study Nos. 1 to 6 above specified, to submit for the approval of the Board of Examiners their work done in and for the Royal Academy School, provided that the drawings so submitted comprise studies applicable to paragraphs Nos. 4 and 5, whether prepared for the Royal Academy or otherwise.

7. One sheet containing diagram of timber-framed Roof Truss, not less than 30 feet span, with the nature of the strain on the several parts marked thereon, the ironwork and the junctions of the timbers drawn to a scale of one inch and a half to the foot in isometrical projection and dissociated.

8. One sheet showing the construction of Floors—Framed timber, combined iron and timber, and fire-resisting materials, suitable for a room 30 ft. × 20 ft., drawn to a scale of $\frac{1}{2}$ inch to the foot.

9. One sheet of details of Joiner's Work in doors, windows, and fittings, shown in plan, elevation, and section, to a scale of one inch to the foot; with details, to a large scale, of mouldings and framing.

* * Each of the nine sheets must be carefully finished as a complete work. They must be delivered flat, in a portfolio 30 inches × 22 inches, which can be purchased for about 4s.

FINAL EXAMINATION.

1. A study of Ornament from the round, shaded.

2. A design for a Building of moderate dimensions, such as a detached villa, parsonage, school, local institution, or cottage hospital, to be fully drawn out as working drawings to a scale of not less than one-eighth of an inch to the foot, in plans, elevations, and sections,

duly figured and showing construction, drainage, with details of the construction and ornament, and a perspective view.

3. Drawings of some Historical Building, or part of a Building, made from actual measurement, with the jointing of the masonry, &c., correctly shown, and the construction; the whole in plan, elevation, and section, carefully figured, with details at least one quarter full size. The original sketches measured and plotted on the spot are to be appended.

4. One sheet of Diagrams of Constructive Masonry or Brickwork, such as arches or groined vaults, with the projection of arch and vault stones.

5. One sheet of Diagrams of a roof truss of iron or steel, not less than 40 feet span, with details to a large scale, with all the calculations for strength at the various parts fully worked out and appended thereto.

The Candidates must also submit sketch-books or other evidences of study of buildings and of travel, and satisfactory evidence, with sketches, of having followed the carrying out of building works, and notes of the progress and conduct of such works.

Revised Forms and Programmes are in preparation, and may shortly be had on application to the Secretary.

THE LONDON BUILDING ACT.

Proposed Amendments.

The Report of the Building Act Committee of the London County Council, showing the urgent need for an Act to amend the London Building Act 1894, is as follows:—

1. Recent decisions of the High Court as to the construction to be put upon certain sections of the London Building Act are such as appear to us to render the working of the Act as it stands very difficult; and we have also been informed that the Housing of the Working Classes Committee has, owing to a defect in the Act, found it necessary, when land belonging to the Council is leased for the erection thereon of artisans' dwellings, to insert in the leases a provision to insure that such dwellings abutting upon narrow streets shall not be of undue height.

One of the decisions above referred to, both of which were given so recently as 2nd November, materially affects the proceedings relative to dangerous structures. [Section 188 (1) *is here set out.*]

One of the magistrates recently dismissed certain summonses taken out by the Council, as he held (a) that all dangerous structure summonses must be served under the Summary Jurisdiction Acts, and (b) that even if they could be served by affixing a copy upon premises when unoccupied (which course was taken by the police authorities when the law relative to dangerous structures was enforced by them, and has been continued by the late Metropolitan Board of Works and by the Council), that was not a sufficient service unless the Council had after some reasonable inquiry failed to find the owner. The question being of great importance, affecting many cases in the course of each year, the Council on 19th October on our recommendation directed that application should be made to the High Court for a mandamus upon the magistrate to hear the summonses with which he had declined to proceed. The case came before the High Court on 2nd November, when, after hearing counsel on both sides, the Court decided that the first point taken by the magistrate was bad, and that if the Council made reasonable inquiry, and could not discover the owner, a summons could be served under section 188; but discharged the rule for a mandamus on the technical ground that no evidence was given before the magistrate in the case referred to that

such inquiry had been made. The Court said that such inquiry need not be a prolonged or expensive inquiry, but such reasonable inquiry as any constable knew how to make on the spot in a few minutes. The decision will put most serious difficulty in the way of proceedings. It appears to us that, having regard to the decision as to who is "owner" for the purpose of these proceedings, it must involve a search in each case for *documentary* proof of the ownership of premises before a summons can be taken out, as without evidence of ownership, to get which evidence must in many cases be almost impossible, the case might be dismissed with costs against the Council. We consider it essential that structures certified to be in a dangerous state should be dealt with with the utmost promptitude, which will be impossible if such inquiries, which have never hitherto been required, have to be made. In illustration of the necessity for swift action we may state that only a very short time since, owing to a magistrate having refused to adjudicate upon a case in consequence of the point raised as to the service of the summons, two men narrowly escaped being crushed through the falling down of a part of a structure certified to be dangerous; and moreover, since the decision of the High Court, other summonses similarly served have been dismissed. We are therefore of opinion that the section referred to should be so amended as to make it absolutely clear, as the Building Act of 1855 made it clear, that in *all* cases of dangerous structures all documents in proceedings may always be served on some person on the premises to which such documents relate, or if no person be found on the premises by affixing such documents thereto.

In another case the magistrate dismissed a summons taken out with regard to a building erected on the south side of Moscow road with the boundary of the forecourt at less than the prescribed distance from the centre of the road; he taking the view that as the building itself was at the prescribed distance, no power to proceed was given by section 14 of the Act, which, in his opinion, merely applied to a *building or structure* erected within the prescribed distance. This and the preceding section 13 were, however, in our opinion clearly intended to insure that no part of any new building, nor of the forecourt boundary fence or wall in front thereof, should be at less than the prescribed distance from the centre of the road; and, on our recommendation, the Council on 18th May last directed that the matter should be submitted to the High Court by means of an appeal against the magistrate's decision. This case also came before the High Court on 2nd November, when the Council's appeal was dismissed, and the decision of the magistrate confirmed, and the Council was ordered to pay the respondent's taxed costs. The Court expressed the opinion that the intention of the sections was obvious, but that as section 14 stood the intention was not expressed, and that it was a slip which Parliament should be asked to amend. We consider that it is very desirable that the Council should at once endeavour to obtain the amendment required, in order that it may be made clear that no part of any new building shall be erected with its forecourt boundary fence or wall at less than the prescribed distance from the centre of the road.

It is also desirable that sub-paragraphs (a) (d) and (e) of sub-section 3 of section 200, which section relates to offences against the Act, should be taken out of that sub-section and themselves be placed in a separate sub-section providing a penalty for the offences which these paragraphs (a) (d) and (e) deal with. Sub-section (3) as it now stands only provides for a penalty when an order of a magistrate is not complied with, and a question has been raised whether any procedure is provided in the Act for obtaining such an order. The matters are of great importance, one being as to the general line of buildings, and the other as to wooden and other structures. It is clear from reference to the previous Acts that these sub-sections have been

inadvertently misplaced, and should not have been included in the sub-section of which they now form part.

As regards the difficulty of the Housing, &c., Committee above referred to, we may point out that section 13 (5) contains a proviso that "no dwelling-house to be inhabited by persons of the working class shall, without the consent of the Council, be erected or re-erected within the prescribed distance to a height exceeding the distance of the front or nearest external wall of such building from the opposite side of the street;" and we think that the difficulty may be met by an amendment to make it clear that no working-class dwelling shall be erected within 20 feet from the centre of the street or way on which it abuts, which was obviously intended, although the section does not set out the intention in express terms.

The Report concludes with the following recommendation:—

That the Parliamentary Committee be instructed to insert in one of the Council's bills for the next session of Parliament, clauses for the amendment of the London Building Act 1894, in the matters above specified, namely—(a) as to procedure with regard to dangerous structures; (b) as to boundary fences or walls within the prescribed distance from the centre of the street in front of buildings which are themselves set back; (c) as to getting an order from a magistrate in respect of certain offences under the Act, and provision of penalties; and (d) as to erection of working-class dwellings in narrow streets.

This Report has been adopted, and the London County Council have decided to apply for an amending Act early next Session.

The Institute and the Amendments: A Suggestion.

At the conclusion of the business before the General Meeting of Monday, Mr. William Woodward [A.] asked permission to make a suggestion in reference to the contemplated amendment of the London Building Act. Architects, he said, practising in London would endorse his opinion that some of the clauses of the Act were not so clear or so simple as they might be, and those charged with its administration were often placed in much difficulty in giving decisions. The present was an occasion on which the Institute could do very good work, and he therefore ventured to offer the following suggestion to the Council: That a circular should be sent to every member of the Institute, asking him to note, as briefly and concisely as possible, the particular section or sections of the Act he considered it was desirable to amend, and to indicate the particular way he would have the points amended. A small committee should then be appointed by the Council of the Institute, to collate and put in order the results of the circular, and frame a report thereon. That report should be brought before the Institute at a Special Meeting and discussed; and finally, a formal report should go to the London County Council, setting forth the views expressed by the Institute as to the best manner of amending the imperfections, and improving the working of the Act. By that means the County Council would be put in possession of what they no doubt desired to know, and

the faulty provisions of the Act would be amended in accordance with expert opinion, with a result beneficial to all.

The Chairman thought Mr. Woodward's suggestion a valuable one, and stated that it would be considered by the Council.

Miscellaneous.

Mr. Charles John Shoppee [*F.*], who died on the 18th ult., in his seventy-fourth year, had been a member of the Institute since 1862.

THE Hon. Secretary of the York Architectural Society announces the death, on the 15th ult., of Mr. N. R. Yeomans, who had filled the office of Treasurer of the Society since its foundation in 1882.

A LETTER has been received from the Société Régionale des Architectes du Nord de la France, announcing the death, in his eightieth year, of M. Henry Contamine, one of the original founders and Past President of the Society.

OWING to the inability of Mr. F. T. W. Goldsmith [*A.*] to act as Hon. Secretary of the Practice Standing Committee, Mr. C. H. Brodie [*A.*] has been appointed to the office, in conjunction with Mr. Edmund Woodthorpe [*F.*].

AT the first meeting of the Competitions Committee, Mr. J. Macvicar Anderson [*F.*] was elected Chairman, *vice* Mr. Charles Barry [*F.*] resigned; and Mr. F. T. W. Goldsmith [*A.*] was re-elected Hon. Secretary.

PROFESSOR Baldwin Brown [*H.A.*] is delivering a course of twenty lectures on Italian Art, in connection with the Edinburgh Social Union.

MR. Hugh Stannus [*F.*] is giving a series of ten addresses on "The Classic Elements of Architecture" before the Sheffield Society of Architects.

THE President, Professor Aitchison, A.R.A., during his recent visit to Dublin, delivered a lecture before the Dublin Architectural Association on "The Architecture of the Renaissance."

AT the distribution of prizes at the Leeds & Yorkshire Architectural Society on the 16th ult., the two principal prizes were taken by *Students R.I.B.A.*, the Society's prize for measured drawings going to Mr. W. Driffield, and the President's prize for sketches of old work to Mr. C. W. Tomlinson.

MR. Laurence Hobson (Liscard), *Student R.I.B.A.*, on the recommendation of the Board of Examiners has been awarded the Arthur Cates Prize (value Ten Guineas) for Testimonies of Study prepared for the November Final Examination.

THE Festival Dinner of the Institute took place at the Whitehall Rooms on the 2nd instant. A full account will appear in the next number of the JOURNAL.



THE PICTURE GALLERY, CASSEL.

BY J. D. CRACE [*H.A.*].

THE Picture Gallery (Dehn-Rotfelser) at Cassel, in Central Germany, is distinguished by at least two circumstances. It occupies a site of unrivalled beauty; and it contains, among other treasures, a splendid series of Rembrandt's finest works. It must be added that architecturally it is not unworthy of a fine site. There is a dignity and repose about the exterior which is consistent with its purpose; and on the principal floor the architect has turned to account the command of a splendid outlook by the loggia, or gallery, to which I shall again refer. The galleries are for the most part well lit and conveniently arranged; whilst the entrance and staircase, though not large, are so planned as to produce considerable architectural effect—enhanced by sculptured figures of great merit.

It is not my purpose, however, to discuss the architecture itself; but rather the coloured decoration as affecting it on the one hand, and as affecting the pictures on the other. I should explain that, ten years ago, when the treatment of our own National Gallery was in progress, this Cassel Gallery was constantly quoted to me by the late Director, Sir Frederick Burton, and by one or two of the Trustees, as altogether the most satisfactory of the European galleries. From that time to this I have always entertained the intention of visiting it, but was unable to do so until last May. I confess that the interior decoration fairly disappointed me. The colouring is crude and ill-balanced; that which was described to me with some enthusiasm as "coloured marbles" proved to be to a large extent "scagliola"; and the pictures are hung on ordinary distemper paperhanging of lamentably weak tones. I will, however, endeavour first to describe the general arrangement.

The building—of the rather cold German Classic Renaissance type—stands with its long south-east side flanking a broad terrace planted with shrubs and trees; whilst its north-east end and main entrance confront an open space bordered by other buildings, but open on the terrace side. Below the terrace lies a steep slope overgrown by trees and intersected by paths which lead down to a park-like space of meadowland which borders the river Fulda; and, beyond the river, miles of open country, woodland, fields and villages, only limited by the more or less distant hills.

Having then this view to our left, we enter at the main doorway and cross a rather low hall,

from which doors open to the lower vaulted rooms, in which are the sculpture and miscellaneous collections. Immediately opposite the entrance is the Grand Staircase, which, like that in our National Gallery, rises in broad single flights between marble side-walls surmounted by a balustrade of dark marble. This balustrade is broken by square piers, on which stand eight fine single figures sculptured in white marble, and symbolising the countries which have been the homes of art. The surrounding walls on the first-floor level are carried up with columns and side vaulting, the architectural features being here more enriched and ornate than elsewhere. The ceiling panels are of glass for top light.

We enter the first large gallery by a door confronting the stairs, and find a second, third, and fourth saloon in succession like the first. To the right (and west) of these large rooms, which are lit from above, lie a series of smaller rooms, or "cabinets," lit by side windows, and containing the smaller pictures; whilst to the left is the long arcaded corridor, or loggia, accessible from the centre room or at either end, in which the eyes may be rested by overlooking the beautiful prospect already described. It must be admitted that it would be difficult to place a picture gallery more favourably, and certainly there is much to be said for the architectural treatment; but for the surface colouring I have little to say in praise.

So far as the coloured marble features go (even though they be of "scagliola") the combinations appear well considered and, as between themselves, harmonious in tone. The misfortune is that the painted decoration, though not elaborate, sins as to its own discordancy and in its apparent ignorance of what is in harmony with pictures.

However, to take the interior in detail, beginning at the entrance: The hall is to all appearance entirely of polished marble; the walls, a sort of "rosso"; the columns, pilasters, architraves, skirtings, &c., are of a full grey marble. The two marbles harmonise well with each other and with the pavement of Roman mosaic, in which the plain centre is of mixed marbles, giving the general tint of red granite; and the ornamental border of black, white, red, and Siena tesserae. The doors are of oak. The ceiling is panelled in simple forms, painted a very pinky drab tint, with the enrichments relieved by a harsh red, and the central panels grounded with a malachite green. There are no pictures here; but this green is a very jarring note in the decoration.

The "rosso" marble of the hall is carried through to the walls flanking the stairs which conduct to the principal floor, and on this first floor we are in what may be called the staircase, a vaulted hall, in which stand the eight white marble figures on the balustrade of the landing. Here, from a plinth of dark marble, rise pairs of fluted Siena marble columns which carry the enriched frieze

and cornice, from which again springs the vaulted coving of the roof. The capitals and bases of these Siena columns are of a heavy clay-yellow colour, and the same tone of yellow prevails in all the enrichments, to which the grounds are picked in with a hot terra-cotta red. In hard contrast with this is a strong crude blue in the vaulting over the lunettes and in the principal wall panels. A dark chocolate-brown is used as margin in the vaulting, and as a ground to the clay-yellow ornament in the wall margins. As a result, one can but say that a really fine architectural effect has been seriously deteriorated by the hot and badly contrasted colouring. Fortunately, there are no pictures here. But we pass from the Grand Staircase directly into the first large picture saloon; and they are all four alike. Above, about one-third of the width is occupied by a low-pitched inner light of ground glass. This is surrounded by a bold frame in yellow and gold, with a 12-inch margin of strong ultramarine blue, broken by large gold stars at intervals, and framed again by a yellow and gold enrichment. This stops the large cove which rises from the cornice, and presents a surface of perhaps 6 feet girth, decorated with a sort of vertical stripe diaper in dull reds, varied at the centres and angles by a group of griffin and scroll ornament in yellow, outlined black, and with a bright blue medallion in the centre of each such group. This decoration appeared to me to be executed in paperhanging; as was also the wall decoration, of a pinky terra-cotta tone, with a wiry, meagre pattern in darker shade—each wall being thrown into a panel by a darker 5-inch margin and gold mouldings. The dado, 3 feet high, is of a dark greenish harewood, with black surbase and skirting; and the dressings of the doorways are of a cool grey-green marble with black mouldings.

An iron rail projects 16 inches from the wall at the dado height, to protect the pictures. The floor is of oak parquet.

It is on these somewhat pinky walls, sharply contrasted by the black doorways, that hang some of Rembrandt's masterpieces; whilst, overhead, the 12-inch wide border, of a brilliant deep blue, is brought into startling prominence by its gold stars and yellow framing. It seems as if human ingenuity would be severely taxed to find an assortment of tones less calculated to favour the powerful but low-toned colouring of Rembrandt's grand portraits; yet, by sheer force of holding the spectator's attention, and by their power and originality, they almost make one ignore the truculent decorations.

Of the smaller side rooms, or "cabinets," it is only necessary to say that they have plain flat ceilings, are lit by side windows, and that their walls have the same paper decoration: only the tint of this in the alternate rooms is of a peculiarly cold, thin blue green, which is, for the

majority of old pictures, rather worse than the pink terra-cotta.

The corridor, or "loggia," on the south-east side is divided by projecting piers and pilasters into eleven square bays. These pilasters and arches are highly enriched: the ornament, all in the "clay-yellow" already described; the plinth, of "rosso" scagliola; and each bay is covered by a low cupola, alternately greenish blue bordered by Indian red, and *vice versa*. The perspective effect is of a hot orange yellow tone, very unpleasant.

I have already mentioned that on the ground floor are vaulted galleries. These are devoted on the one side to casts of sculpture arranged chronologically; on the other to miscellaneous objects, such as gold and silversmiths' work, bronzes, clocks, coins, &c. The colouring of these seemed to me, on the whole, not unsatisfactory for their purposes. In the sculpture galleries (there are only *plaster casts*) the walls are of a light neutral grey with margined lines, the vaulted ceilings and piers of a rather too yellow-cream colour. The skirtings are of brown-paper tone, and the casts stand upon marbled pedestals of a willow-green. The general effect is cold, but otherwise not unfavourable to the casts.

On the "miscellaneous" side the walls are of a terra-cotta red with grey margins; the ceilings and piers of the cream tint, with marginal lines of a warm sage-green; and the showcases are painted a very light bronze tint, almost a greenish stone colour. This seems to me less satisfactory than dark wood, or black, but is not objectionable.

My general impression of the whole building was that its *permanent* features, both structural and decorative, were suitable to the position and purpose; and that the coloured marbles, or scagliola, were so arranged (as to their colours) as to admit of a very satisfactory decorative finish: but that—at least on the principal floor—the colouring, so far as it was produced by paint and paper, was bad for both building and pictures, and distressing to the visitor. Perhaps one must find consolation in the knowledge that the mistakes are made where they can most easily be remedied in the future.

REVIEWS. LXII.

(171)

BUILDING STONES.

Stones for Building and Decoration. By George P. Merrill, Curator of Geology in the United States National Museum. Second edition, 80. Lond. & New York 1897. Price 21s. net. [John Wiley & Sons, New York; Chapman & Hall, 11, Henrietta Street, Covent Garden, W.C.]

Of the many materials for constructive purposes with which an architect has to deal, few, perhaps, are of greater importance than stone, for upon the

selection of a suitable material the character and durability of a building alike in a great measure depend.

To obtain a reliable knowledge of this subject at first hand requires considerable research, combined with some acquaintance at least with the elements of physics and chemistry, geology and mineralogy. If this be the case, it is perhaps not remarkable that, with the many and varied requirements of the architectural profession, but few can lay claim to that expert knowledge which is essential to enable them to form a reliable judgment upon the building stones which are from time to time brought before them.

In one case the architect may wish for a stone of a particular colour to harmonise with a scheme of chromatic decoration, and find one which in that respect is admirably suited to his purpose; but, using it, regret to find that the very matrix which imparts the desired hue to the material is of such an unstable nature that his æsthetic mouldings and ornaments crumble to dust!

In another case he may wish for an exceedingly strong stone, and yet one which at the same time shall be of such texture and colour as to harmonise with its surroundings, and so free working that it can be readily and economically cut into moulded or ornamental work.

These considerations form but a tithe of the many points which may influence one in the choice of stone for building; and, failing an intimate personal knowledge of the subject, special treatises are of immense value to the architect in enabling him to make a satisfactory selection.

Our American *confrères* are better served than we on this side of the Atlantic in regard to stone and its allies. At least one periodical, *Stone*, has devoted its pages to this subject for a considerable period. Of late, however, in this country an allied paper, *The Quarry*, has been issued; but we are unable yet to say if it has met with the success which it merits; and although our architectural and building papers devote many articles to a consideration of the subject, special treatises in this country are almost, or entirely, unknown. The oft-quoted Report addressed in 1839 to the Commissioners of Woods and Forests, on the selection of stone for the then new Houses of Parliament, is, by virtue of its age, rendered in part obsolete; and, as it has been laid under contribution to a large extent in Rivington's *Notes on Building Construction*, that, too, is not as complete as could be desired. Professor Hull's work on the building and ornamental stones of Great Britain, excellent, though not exhaustive even at the time of its publication, has also suffered by the lapse of years. *Slate and Slate Quarrying*, again, is twenty years old, and other works of minor importance are still older. Possibly, one of the most complete special works is the more modern treatise on *Granites and our Granite Industries*, by G. F. Harris. Small

though the above-enumerated list may be, it nevertheless includes the most important works on building stones which we possess in this country.

Mr. Merrill's work under review, so far as the United States are concerned and to quote the words of the preface, "supplies a comprehensive and not too technical a work on this subject." Although the question is treated, as the author intends, principally from an American standpoint in its detail, yet the broad principles apply to stone wherever it may be found. The mineralogy of stone, the physical and chemical properties, the weathering, selection, methods of testing and preservation, are alike applicable to all classes of stone, whatever country may be their source of origin.

In time-honoured manner the author devotes his first chapter to an historical retrospect on the use of stone in the United States. As we might expect, stone was not used to any appreciable extent in that country until a comparatively recent date. One of the first stone-built houses was that erected at Boston about 1650 for Deacon John Phillips. The stone was not quarried; but this and other houses, erected in 1737 and 1749, were constructed of granite "bowlders" (the orthography repels us) found in their vicinity. The quarrying industry of the States did not assume any importance till early in the present century, when in 1825 granite quarries were opened at Quincy, Massachusetts. To us—with a stone quarrying industry which commenced at least as early as the seventh century for the Saxon work at York, Ripon, Hexham, and elsewhere, and continued with renewed vigour in Norman times—the newness of the New World is striking. The use of "bowlders" at Boston, Massachusetts, in one sense had its prototype in England in the employment of the "sarsens" of Stonehenge and Avebury; but we may not linger on this aspect of the subject.

The distribution of stone in the United States is sketched, and the present and prospective resources of the States and Territories are classified and tabulated in such a manner that the actual or possible products of each can be readily seen. The British reader, however, inexcusably ignorant, it may be, of the exact disposition of the several States, Territories, Counties, and other geographical features of the vast tracts included in the United States, would be assisted by a map in following the descriptions of the distribution of stone therein. The author, perhaps, is satisfied that the many maps appended to the "Correlation Papers" of the United States Geological Survey will amply supply the deficiency. But maps are given of the marble regions of Knoxville, in Tennessee, and of Western New England.

The minerals which enter into the composition of building stones are dealt with under four headings: those which are (1) *essential*, as quartz is to granite; (2) *accessory*, those, that is to say,

like mica, hornblende, or biotite, which give a distinct type to the rock apart from its essential character; (3) those which are *original*; and (4) those which are *secondary*, owing their introduction in most cases to the action of percolating waters with minerals in solution, after the deposition of the original mass. The minerals which usually occur in rock masses are then dealt with in detail and their characteristics systematically discussed. The description of the effect of various minerals upon the colour, hardness, physical properties, and other characteristics of many of the United States building stones is particularly instructive, applicable as it is to stone generically. One or two examples may prove interesting. We are shown that mica has a very important bearing upon the working and weathering qualities of stone. Mica in itself is soft and friable, and hence an element of weakness; it therefore follows that when mica is present care should be taken to select those stones in which only small flakes are evenly distributed throughout the mass. Then, too, mica is of several species—some white, as *muscovite*; others black, as *biotite*; the prevailing colour, therefore, of a micaceous rock is largely dependent upon the particular variety of the contained mineral.

From a study of the component minerals of rocks we are naturally led to consider the condition in which they are aggregated, as the *density* and *hardness* of the resultant material will be altogether due to the manner in which those minerals are compacted; moreover, the *structure* is dependent upon the form, size, and arrangement of the component minerals. The author, following a well trodden path, then treats of the structure of rocks under two heads: (1) *macroscopic*, or that which may be detected without the aid of a microscope, and (2) *microscopic*, in those cases where it becomes necessary to have recourse to transparent sections of the rock to determine its structure. Illustrations and descriptions are given of a few examples in which the importance of this method of research is demonstrated; and, scattered throughout the work, further details are supplied which amplify the information. We venture to think, however, the author might have used his knowledge of this important method of observation to greater advantage. We might then more fully appreciate the effect of microscopic structure upon the behaviour of stones under climatic influences.

One paragraph is devoted to the chemical character of rocks, and the statement is made that "the chemical composition of a stone is often a guide to its suitability for structural purposes. Those containing much lime are more liable to be unfavourably affected by the acid gases of cities, and the various forms of iron present are of importance both regarding the weathering properties of the stones and their colours."

Though this may be accepted as true, it must be added that it requires considerable care to discriminate between chemical analyses to assess the relative value of any stone for practical purposes. Just as the same words of a language may be arranged in speech or literature of varying refinement, so in chemical compounds, of which stones are often complex examples, we may have a good, bad, or indifferent quality, dependent, not on the matter, but on its arrangement. It is for that, among other reasons, that we should place more reliance upon a microscopical examination, aided and amplified it may be, in some cases, if not in all, by a chemical analysis.

The chemical properties of the minerals contained in a building stone affect its colour very considerably, as the author points out, and the constancy of that colour is almost entirely dependent thereon. It is not sufficient, for example, to ascertain that iron is present, but the particular condition of the ore must be ascertained; for while "the sulphide, carbonate or other protoxide compounds are liable to oxidation, . . . the sesquioxide can undergo no further oxidation, and hence the colour caused by it is the most durable."

It would have facilitated comparison if the tables of chemical analysis appended to the volume had been so planned that the stone under consideration therein could be compared with those described in the body of the work; but, with somewhat few exceptions, this is not possible.

The vast resources of the United States in regard to all classes of building and decorative stones and allied materials may be gathered from the fact that the description of the most important districts occupies over three hundred pages of Part II. of the work under review. In the State of New York alone, according to Professor J. C. Smock (*Building Stones in the State of New York*), 352 quarries were open in 1887, of which as many as 235 were sandstone quarries, principally in the Hudson River "blue-stone." In Iowa, on the other hand, according to Mr. Merrill, 128 quarries are in limestone or dolomite, out of a total of 131.

Each class of building stone is separately grouped, and in each class arranged alphabetically by States. This method may not fully satisfy the scientific mind, but is of considerable practical value in that it facilitates reference. From an architectural point of view, one of the first considerations, perhaps, is that of colour, and in the brief review of the several classes of stone which we now propose to make a colour classification has been attempted.

STEATITE OR SOAPSTONE.—Though not properly a building stone, this material is of some economic importance in the United States. It is principally used, cut into thin slabs, for washtubs, and it also serves the purpose of a firestone. It

was at one time extensively used in New England for heating-stoves.

The soapstone is found in varying quantity and quality in many States, no fewer than sixty beds of the mineral occurring in Vermont alone, while it is said to be found in inexhaustible quantity in Texas, and to be plentiful in New York State and in North Carolina.

SERPENTINE and allied rocks of varying colours, green, light yellowish, blood-red, or almost black are found in some of the States; the finest quality, the "precious serpentine," of a rich green colour, occurs principally at Montville, New Jersey, but small pieces only are obtainable. Inexhaustible quantities of serpentine exist in the neighbourhood of San Francisco and other parts of California. At Milford, in Connecticut, occurs a mixture of calcareous and serpentinous minerals, green in colour, called *verde antique* marble. An allied variety, but varying in colour from bluish-grey to dove, is found at New Haven, Connecticut. Extensive deposits of serpentine, suitable for decorative purposes, are likewise found at Harford, in Maryland, and the Hoosac Mountain range of Massachusetts; it is also common in the massive form in several States, of which North Carolina and Pennsylvania may be cited as examples. The author is careful to point out the unreliable character of serpentine for exterior use. It should unquestionably be restricted to internal decoration in slabs of moderate dimensions, or to positions where no great size or strength is needed. It is flattering to our British vanity to read that "None of the American serpentinous rocks now known can compare in point of beauty, in variety and elegance of colours, with those of the Lizard district in Cornwall, England."

GYPSUM.—This mineral occurs in several of the States; but, with the exception of that quarried at Fort Dodge, Iowa, which is used for building, it is principally exploited for the manufacture of "plaster of paris" and similar cements.

MARBLES.—Under the term "marble," the author includes those limestones or dolomites which are sufficiently hard to take a polish.

The marbles of the United States are exceedingly diversified in character and colour; they are abundantly developed in many of the States, notably in Vermont—the principal marble-producing State—and in the region of Knoxville, Tennessee. Some of the principal colour-varieties may be enumerated. White marbles are found in Alabama, Inyo County, California, where the stone is stated to be pure snow-white, harder and finer than Italian marble; while at Yule Creek, Colorado, a still finer belt of white marble occurs. In New York State the Tuckahoe marble is crystalline and pure white; and white saccharoidal statuary marble is found in Vermont. Veined or clouded white marbles, with varying

shades of colour, are recorded from Alabama, California, Georgia, Massachusetts, and elsewhere. Grey marble, veined with red and of great beauty, exists in Shelby County, Alabama. Grey marbles of several varieties are found in Georgia and New Jersey; blue-grey in Vermont and in Virginia. Fossiliferous grey marbles are worked in Clinton County, Tennessee; and at Lockport, in New York State, they are extensively used for mantelpieces and ornamental purposes. Blue, crystalline-granular marble is found in Montgomery County, Pennsylvania. Yellow or buff-coloured marbles are described from Alabama, Iowa, and Missouri, though we do not gather that they equal in beauty the well-known Siena marble, unless we except the Inyo County yellow marble, which is nearly allied to it. Pink marble occurs in the northern parts of Arkansas, in Pickens County, Georgia, and in Virginia; while from North Carolina is described a beautiful flesh-pink marble, sometimes blotched or striped with blue and yellow. Red marbles are quarried in several States—Alabama, Missouri, New York, Tennessee, and Virginia, apparently affording the most important varieties. Black marble is associated with the Siena-like marble already mentioned in Inyo County; the quality is not excellent, but at Glen Falls, on the Hudson River, is a fine-grained blue-black marble (sometimes varied with a small white fossil) which polishes to a lustrous black. Very dark blue-black marbles are also found at Isle-la-Motte and other localities in Vermont. Greenish marbles from Missouri and Wyoming, and variegated marbles of several types, still further attest the richness of America in this valuable material. Of the variegated marbles, some are instanced as particularly ornamental; among them are the “bird’s eye” marble of Iowa, a fossil coral-marble, only obtainable in small pieces; coloured marbles of various tints from Missouri, equalling the Tennessee marbles mentioned below; the “rose-crystal” marble of New Jersey, a beautiful combination of white, flesh-pink, and rose-coloured crystals of calcite with black mica and green pyroxenes; the chocolate and white, brownish-red, fossiliferous; rich olive-green, fossiliferous, red and green, pink and olive-green, and the dove-coloured marbles of Tennessee. Some of the most important foreign marbles—Canadian, African, and European—are dealt with in some detail.

ONYX MARBLES OR TRAVERTINES.—Onyx, properly so called, is a banded variety of the silicious mineral, chalcedony; but the name has been misapplied to certain calcareous stalagmitic or stalactitic deposits. Travertine (or calcareous tufa) is a chemical precipitate from the waters of hot springs. These stones, therefore, differ from marbles in being essentially chemical deposits. Some fine varieties are found in the United States, not perhaps so beautiful as those

from Mexico; but they do not appear to be very successfully worked from an economic point of view. These particular varieties of stone appear to have fascinated our author, for he somewhat elaborately details the onyx marble localities, not only of his own country, but also of Algeria, Egypt, Italy, France, and Spain. An interesting chapter on the use of onyx marbles in Egypt and other countries closes this section of his work.

LIMESTONES AND DOLOMITES (other than marbles).—Limestones and dolomites are well represented in the various States and Territories of America, a large number of workings being open. In Iowa alone, as we have already noticed, there are 123 limestone or dolomite quarries, and nearly all the quarrying in Illinois is in the same materials.

The dolomites, or magnesian limestones, are usually represented in the States by fine-grained, compact, light-coloured cream or buff-tinted stones, especially in Arkansas, Indiana, Iowa, Kansas, Minnesota, New York, Wisconsin, and elsewhere; while dark-coloured, grey, grey-blue, dull red, and brown dolomites are obtained in Illinois, Missouri, Minnesota, New York, North Carolina, and particularly in Ohio; but in the last-named State, the stones, though strong and durable, are principally used for pavings and rough works by reason of their dull colours. Compact crystalline limestones, but little removed from marbles, are quarried in some localities; a black, finely crystalline stone of this character occurs in Colorado, and light-coloured, fine-grained limestone of a like kind is met with in Texas. The compact, non-crystalline varieties of limestone are very abundant. For the most part they are either of light drab or cream colour, as in the greater number of the quarries enumerated in Kansas, Illinois, and Iowa; or dull grey, as in some of the quarries in Alabama, Maine, Missouri, Ohio, and other States. In some districts fossiliferous limestones are worked, of which the following may be mentioned: The coarse, shelly limestone of Florida; the grey, highly fossiliferous stone of Greenport, Columbia County in New York State; and the light pink, finely fossiliferous stone at Columbia in Tennessee; or the *Foraminiferal* limestones of Kansas and Nebraska, of which the author is careful to tell us, in both cases, that the fossil rhizopod *Fusulina* is the size of a grain of wheat. Oolitic varieties of limestone are also plentiful in the States. That most valued, apparently, is the light-coloured “Bedford oolite” of Lawrence County, Indiana, a stone which is now extensively used in nearly all the important cities of the country. In Kentucky, the fine, light-coloured oolites have only a local reputation, but they are said to be without superiors, or even, perhaps, equals. A beautifully oolitic, blue-grey stone of sub-carboniferous age is found in Missouri. Oolites of varying quality are likewise met with in other localities, of which Arkansas, Florida,

and Iowa are the most prolific; but they are not in most cases recommended for exterior work.

A chapter is devoted to the description of some ornamental stones, mostly foreign and rare, which are occasionally used for decorative purposes. Among such stones are included the attractive, iridescent *Labradorite*, the green and blue carbonates of copper, called respectively *malachite* and *azurite*, and others.

GRANITES AND GNEISSES.—The composition and general properties of granites are first described, together with the geological age, the mode of occurrence, and the varieties and uses of granites. Some of the principal colour-varieties of American granites may be noted. White granite occurs at Mount Katandin in Maine, and an almost white muscovite variety of granite is found in Vermont. Light and dark grey and blue-grey granites or gneisses are plentiful in California, Connecticut, Maine, Massachusetts, New Hampshire, and to a smaller extent in several other States. In some localities a greenish tint prevails, as in the quarries at Rockport, Massachusetts; in Montana; and in the Vernon Valley, New Jersey. As these rocks bear hornblende with biotite they are not true granites. Pink granites are not uncommon, that from the Calais and Jonesborough district of Maine is said to be finer in texture and of a more delicate pink than the Scotch granites. Our author does not specifically state that it rivals the Corrennie granite, which is of such a delicate salmon tint. Red granites are likewise plentiful, particularly in Connecticut, Maine, and Massachusetts: that from Lyme in Connecticut is said to far excel the Scotch Peterhead granite. Porphyritic varieties are often associated with the granites already mentioned—one from Rockingham, North Carolina, with large pink crystals of felspar, is said to recall that of Shap.

PORPHYRIES.—Rocks with distinct crystals, usually of quartz or felspar, scattered in a ground mass of a more or less amorphous character, are classed as porphyries; but only when this appearance is clearly discernible to the unaided eye, so that the term is somewhat loosely applied. The author states that “inexhaustible quantities of porphyries of a variety of colours and great beauty occur at Saugus, Malden, Lynn, and Marblehead, and other localities in eastern Massachusetts.” Many varieties ranging from red to black in colour are met with in New Hampshire. A fine stone with white crystals in a black base is found at Green Lake, Wisconsin. Another porphyry, the converse of the last-named, having black streaks in a white base, occurs near Charlotte, North Carolina; while a deep red quartz-porphyry, somewhat like the Egyptian red variety, has been met with on the Carson River, Nevada.

Space will not permit one to dwell upon the **LIPARITES**, or glassy eruptive rocks, of which obsidian may be instanced as a variety, nor upon the

felsitic or porphyritic varieties of the same, which are quarried and used to some extent, principally in the Western States.

SYENITES, or quartzless granites, in which the quartz is replaced by mica or by hornblende, augite, &c., occur in various localities, particularly in the vicinity of Little Rock, Sabine County, where a blue-grey variety has been extensively quarried, and, as the rock covers an area of many square miles, the supply must be almost inexhaustible.

We can here only allude to those rough, somewhat porphyritic, dull-coloured rocks of volcanic origin known as **TRACHYTES**; and to those eruptive rocks which are specially interesting to the geologist, forced up as they have been as dykes, or intruded in sheets or bosses into and among other rocks. Sombre in colour, usually of a dull grey, greyish-green, or nearly black, they are, by reason of their toughness and hardness, mostly employed for pavings, road-making, and similar purposes in the States, as elsewhere. Many varieties of these rocks, each bearing a distinctive name, depending upon its structure and composition, are known to the petrologist; they are roughly, though quite erroneously, often referred to as granites.

SANDSTONES and allied rocks are distributed over a wide area of the States, and thoroughly strong, reliable, and ornamental stones of a variety of colours can be obtained. Among the principal colour-varieties we notice the following. White, or nearly white, sandstones or quartzites are described from Colorado and New York. Yellow and buff sandstones are common in Alabama, California, Colorado, Mississippi, Missouri—where a fine light-buff sub-carboniferous stone of good quality is found, and in Ohio, Texas, and other States. Brown and red sandstones are still more generally represented, and we can here only notice the important stone quarries of reddish-brown triassic sandstone of Portland and Middletown, in Connecticut, and the Potsdam sandstone in New York State. The latter forms an ideal stone, the granules and cementing material alike being almost entirely silicious, with just sufficient iron oxide to impart a reddish tint. Pink sandstones are not so well represented, but examples are cited from Arizona, Kentucky, New Mexico, South Dakota, and elsewhere. Grey varieties are very generally distributed in the sandstone districts already alluded to; they are often termed “blue stones,” and are typically developed and worked in New York State. In Ohio the “Euclid blue stone” and the Berea grit both furnish excellent grey or blue-grey sandstones. A greenish-grey sandstone is quarried in Quebec; but that does not appear to have been used in the States.

SLATES.—Several interesting colour-varieties of slates are recorded from the United States. The most prevalent colour is apparently blue-black. One of the most important slate industries is that of Maine, in beds of reputed Cambrian and Silurian

age. These slates are all blue-black, as are also the slates worked in Maryland, Pennsylvania, Texas, and parts of Vermont. Some of the purple slates, notably those of the Western regions of Vermont, are said to resemble closely the Welsh slates. Dark blue slates are found in New Hampshire and in parts of Pennsylvania. Black slates are recorded from Michigan, where the quality is stated to be excellent, as the material is very uniform in colour and of fine silky grain; and from some other States, *e.g.* Minnesota and parts of Vermont. Reddish-brown or brick-red slates are not uncommon in some districts of Vermont and New York, and, finally, green slates of Cambrian age are quarried in Washington County, New York, and in beds of presumably Silurian age on the Hudson River.

In Part III. the geological causes of the bedding and jointing of rocks are discussed, together with the facilities which the bedding and jointing afford to the quarryman. The quarry methods proper to each class of building stone, the machinery for extraction, and the tools for dressing and finishing are described at some length. In a chapter on the weathering of building stones, the effect of physical agencies upon different kinds of stone is carefully considered. A somewhat striking example of the force exerted by changes of temperature is adduced in regard to the Bunker Hill monument:

"A hollow granite obelisk, 221 feet high by 30 feet square at the base, which swings from side to side with the progress of the sun during a sunny day, so that a pendulum suspended from the centre describes an irregular ellipse nearly half an inch in greatest diameter."

The effects produced by friction and by chemical agencies upon various kinds of building stone are then considered, followed by a description of the methods to be observed in selecting and testing stone; but the author warns his readers that the problem of ascertaining the actual qualities, good or bad, of any stone by laboratory or other tests is peculiarly complicated and difficult. After explaining the tests that are usually practised, he concludes this portion of the work by expressing his belief in the value of field examination in those cases where good natural exposures or quarry openings of long standing exist. It is certainly necessary thus to qualify the belief in the value of field observations. We could not determine the value of any new stone in a new quarry, unless we could be sure of its absolute identity with the weathered stone—a point not always easy of proof.

The concluding chapter treats of the methods of protection and preservation, and several of the preservative paints, oils, soaps, or solutions employed to doctor bad or indifferent stone are detailed. We notice that "Fluate," one of the best advertised, and possibly best, solutions used

in France, England, and elsewhere of late years, is omitted from the list.

The appendices are lengthy and useful. The first tabulates the crushing weights, rate of absorption, and chemical composition of many American building stones; the second, the prices and cost of cutting; the third, a long list of some of the more important stone structures of the United States; the fourth, a bibliography of works on stone; and the fifth, a careful glossary of terms used in the work.

Mr. Merrill is to be congratulated on the comprehensiveness of his work, and on the manner in which it is set forth. We regret, as has already been said, the paucity of maps. Some of the views, notably Plate III., are excellent; but others are somewhat uneven in character, and we confess to a preference for the photographic plates.

HENRY W. BURROWS.

(172)

THE GARMENT OF LIFE.

Art and Life and the Building and Decoration of Cities. Arts and Crafts Lectures. By Members of the Arts and Crafts Exhibition Society. 8s. Lond. 1897. Price 6s. [Messrs. Ricingtons, Henrietta Street, Covent Garden.]

"Art," observes Mr. Lethaby, "is but the garment of life. It is the well doing of what needs doing."

This pretty phrase may be said to form the *motif* on which this series of essays is constructed. The thought—in a hundred forms—reappears continually in the book, which is a reprint of a course of lectures delivered before the Arts and Crafts Exhibition Society, by well-known members, in the autumn of 1896. Mr. Cobden Saunderson opens with a delightful reverie on the intimate connection of art and life. Mr. Lethaby looks longingly back upon the romantic cities of the past, and peers a little tremulously into the future. Mr. Walter Crane pleads for the decoration of our public buildings. Mr. Reginald Blomfield rambles along the formal gardens that he loves so keenly. Mr. Halsey Ricardo bathes in an imaginative wealth of glowing colour. The essays are full of delightful definition and subtle suggestion, and should be read, if only for the sheer pleasure of reading them.

The essays, however, were not intended merely to charm and delight our sense of literary fitness. So far as I understand them, they were written with the object of inducing the readers to yearn for the realisation of the ideals which yield the writers such infinite pleasure. The critic therefore must take this as his standpoint; and when he does this, a fear suggests itself as to whether the essayists have gone altogether the best way to work. It may of course be urged that a beautiful conception strengthens the craving for beauty in our everyday life. If this view is

taken, much may be said in favour of the attempt to stimulate our imagination by weaving wonderful ideals—exquisitely beautiful, absolutely impossible. But alas! the wood that we are trying to set aflame is so cloggy and wet that our brave brilliancies are apt to flare up brightly for a time, and then flicker, flicker out with their purpose unachieved, and the resulting blackness but too accurately represents our own resulting despair. I would rather search for a living spark within the dull logs, and watch it ever so narrowly and tend it ever so tenderly until it bids fair to make headway by its own strength. We live in a dull prosaic age, with few noble ideals. Demos is moved by the needs of the moment, and all he will allow the idealist to do is to indicate the direction which his already determined action may take.

May I become personal? Mr. Lethaby in his consideration of modern London starts in the right vein. "We should begin on the humblest plane by sweeping the streets better, washing and whitewashing the houses, and taking care that such railings and lamp-posts as are required are good railings and lamp-posts, the work of the best artists obtainable." He admits the futility of heroic schemes of improvement, and repudiates all idea of grandifying London as a whole; but his nervous pen begins to write more rapidly, and we find ourselves carried away to the contemplation of a magnificent avenue from the British Museum to Waterloo Bridge—a Sacred Way, from which traffic is to be excluded. Now, to speak perfectly frankly, is there the remotest chance of such a scheme being adopted? We see the beauty of it. We may sit in our rooms and dream of it as we dream of the Golden City. We may wish our fellow-citizens saw what we see, and mentally chide them for being so blind as not to see it; but in our heart of heart, in that inner heart that never fails to speak the truth, we know that we are drifting away from the facts which govern action, and that we must reawake from our dream to the horrid realities of life, which become all the more horrid by the contrast. Do not mistake me. I do not say that our dreams should not pass the limits of immediate popular comprehension. There is no reason why our ambitious schemes should not be cosily tucked away in the back recesses of our brain, and brought out piece by piece as occasion seems to offer; but even then the scheme must be realisable, and, I think, also capable of being defended on other than artistic grounds.

One other protest, and I cease from girding at a book which contains so much that is admirable. I want to lift up my voice against pessimism. I know what a host of witnesses surround us, tempting us to enlist in the army of pessimists; but, honestly, what is the practical good of it? What good is it doing France to-day? Pessimism,

especially in its more cultivated forms, seems to sap that vital energy which is necessary for action. And surely to do nothing—and then to regret that nothing is being done—takes one perilously near the vicious circle. Moreover, is there any real ground for pessimism? I should say that the signs of a new awakening of artistic life in England have rarely been so promising as they are to-day. We have revived and revived till we are tired of revivals. We are beginning to yearn for the beautiful in itself, and if this yearning occasionally breaks out with strange and uncouth forms with which we are not familiar, let us nevertheless be tender and sympathetic. The general line of growth is good, and isolated eccentricities will in time correct themselves.

We must not be discouraged because our efforts do not at once produce the response we had hoped for. Modern life is terribly complex. Men become so specialised and so absorbed in the tiniest of tiny corners in which they are fated to earn their bread, that they cannot easily rise to the contemplation of the greater issues of existence. The factory worker, fagged out after a hard day's work, crowding with his fellows into a crawling train, and finally arriving at his small stuffy room, filled with children—how can he think of beauty? Yet it is idle to ignore the fact that these factory hands are an influence that must be reckoned with in any scheme for the beautifying of London.

Ah! this beautifying of London. What a very serious thing it is! I yield to no one in my intense love for London. Its wondrous half-lights, its grand grey spires, its mighty dome that reigns in silent majesty over the busy ebb and flow of life below, its noble river Embankment, one of the greatest works of this century! London is wonderful, but London is also hateful. It has its kitchens and its sculleries. Go from the "Angel" through Hoxton, Bethnal Green, Stepney, and Limehouse, and you will pass through city after city where meanness only gives place to meanness. Cross the river, and the same story repeats itself. It is all dull, all monotonous, all sordid. This is the problem that we twentieth-century architects have to solve, and I wonder how we shall do it?

OWEN FLEMING.

(173)

WOOD-CARVINGS.

Choir-stalls and their Carvings: Examples of Misericords from English Cathedrals and Churches, sketched by Emma Phipson, with an introduction and descriptive notes. 4s. Lond. 1896. [B. T. Batsford, 94, High Holborn.]

This is a book whose entire scope is defined on the title-page. The author has visited a great many cathedrals and churches in England, has sketched the choir-stalls, and appended a short

line of text to each. A book on the same plan, but dealing exhaustively with the subject, would serve as a final work of reference and be invaluable to the student. But the present volume, being confessedly incomplete, can have little value for the professional man, and its merits must be judged from the standpoint of the amateur. The volume is very tastefully got up, and the arrangement of pages of descriptive text facing the plates is one of commendable lucidity. The work bears evidence of loving care for the subject. It could be more greatly praised here if the JOURNAL appealed to the general public instead of a circle of professional readers.

Books received for Review.

Cambridge Described and Illustrated: being a short History of the Town and University. By Thomas Dinham Atkinson, with an Introduction by John Willis Clark, M.A., F.S.A. 8o. Lond. & Camb. 1897. Price 21s. net. [Macmillan & Co., 29 & 30, Bedford Street, Covent Garden; Macmillan & Bowes, Cambridge.]

Painting and Decoration. By Walter Pearce. 8o. Lond. 1898. Price 12s. 6d. [Messrs. Charles Griffin & Co., Ltd., Exeter Street, Strand.]

The Ecclesiastical Architecture of Scotland, from the earliest Christian Times to the Seventeenth Century. By David MacGibbon & Thomas Ross, Authors of "The Castellated and Domestic Architecture of Scotland." Vols. II. & III. 8o. Edin. 1896 & 1897. [Mr. David Douglas, Edinburgh.]

MINUTES III.

At the Third General Meeting (Business) of the Session, held Monday, 29th November 1897, at 8 p.m., Mr. W. M. Fawcett, M.A., F.S.A., *Vice-President*, in the Chair, the Minutes of the Meeting held 15th November 1897 [p. 52] were taken as read and signed as correct.

The Hon. Secretary announced the decease of Mr. Charles John Shoppee [F.], elected *Associate* in 1862, and *Fellow* in 1880.

A list of Donations to the Library [see SUPPLEMENT] was taken as read, and an expression of the thanks of the Institute to the several donors was ordered, on the motion of the Hon. Secretary, to be entered on the Minutes.

The following candidates for membership in the various classes were elected by show of hands under By-law 9, namely:—

As Fellow.

JOHN JAMES BURNET [A.], A.R.S.A., Glasgow.

As Associates (15).

GEORGE HASTWELL GRAYSON, B.A. Cantab. [Probationer 1893, Student 1894, Qualified 1896], Liverpool.

CHARLES DIXON ROCHESTER [Probationer 1890, Student 1893, Qualified 1897], Manchester.

ARTHUR JOSEPH SINGLETON SHAW [Probationer 1891, Student 1893, Qualified 1897], Oldham.

OSGOOD SMITH [Probationer 1890, Student 1893, Qualified 1897].

PERCY WILLIAM MEREDITH [Probationer 1890, Student 1893, Qualified 1897].

HAROLD CONYBEARE TRIMNELL [Probationer 1892, Student 1894, Qualified 1897].
 RICHARD HENRY ERNEST HILL [Probationer 1892, Student 1894, Qualified 1897].
 PERCY MORRIS [Probationer 1892, Student 1894, Cates Prizeman 1897, Qualified 1897].
 GEORGE WILLIAM HATCHER (Qualified 1897).
 ERNEST WILLIAM MARSHALL [Probationer 1895, Student 1895, Qualified 1897].
 HERBERT CYRIL SINNOTT [Probationer 1890, Student 1893, Qualified 1897], Bristol.
 JAMES HENRY CORAM [Probationer 1894, Student 1895, Qualified 1897].
 WILLIAM STANLEY BATES [Probationer 1894, Student 1895, Qualified 1897].
 SAMUEL SEBASTIAN REAY (Qualified 1897), Bath.
 JAMES RICHARD FLEMING (Qualified 1897).

As Hon. Corr. Members (4).

CONDE DE SAN JANUARIO, Lisbon.
 JOHAN LOUIS USSING, Copenhagen.
 SETTIMIO FEDELE GERARDO GIAMPIETRI, Cavaliere of the Crown of Italy, Rome.
 ARNALDO RODONDO ADÃES BERMUDEZ, Lisbon.

The Secretary announced the results of the Preliminary and Intermediate Examinations held in London, Manchester and Bristol, and of the Final and Special Examinations held in London, during November, and read the names of candidates who had passed [p. 60 *et seq.*].

Mr. Wm. Woodward [A.], having referred to the intention of the London County Council to apply to Parliament for an Act to amend the London Building Act 1894, and suggested means by which the views of members concerning portions of the Act requiring amendment might be ascertained and brought to the notice of the County Council, the Chairman undertook that the suggestion should be brought before the Institute Council and considered by them in due course.

The Business Meeting then terminated.

At a Special General Meeting convened for the consideration of a change in By-law 30 proposed by the Council, such Meeting being held at the conclusion of the Business Meeting above referred to, the Chairman, Mr. W. M. Fawcett, explained that the alteration suggested was desirable as enabling retiring members of the Council cognisant of business in progress to share in its conduct until the close of the Session, instead of giving place, as they were compelled to do under the existing by-law, to newly-elected members fresh on the Council and consequently unacquainted with the work in hand.

Fellows only being entitled to vote in respect of an alteration of a by-law, the question arose whether a sufficient number were present to enable the Meeting to deal with the matter, whereupon, the material clauses of By-law 62 having been read, the Chairman ruled that there being more than twenty subscribing members present, including over eleven Fellows, the Meeting was competent to decide the question, and the motion having been put from the Chair, it was

RESOLVED, *nem. con.*, that in order that the Council of the Royal Institute may remain in office until the close of the last General Meeting in June of the year following that in which they were elected, the following alteration be made in By-law 30—viz. that in the last line but one of the final clause the word "last" be substituted for "first."

The proceedings then terminated, and the Meeting separated at 9 p.m.



HOLYWELL PRIORY, SHOREDITCH.

By E. W. HUDSON [A.].

Part II.—The Buildings and Remains.*

IN the absence of any precise and connected contemporaneous account of buildings, we are driven back to what are chiefly historical records, and, after deducing as much as possible from them as to plan and accommodation, to supplement it by careful examination of contemporary structures of the same or a kindred order of Religious. One of the nearest is Rahere's Priory of St. Bartholomew, Smithfield, which, founded in 1102 (the church, 1123), only six to twenty-five years earlier than that of Haliwell, which Maitland (p. 1368) dates between 1108 and 1127, would be similar as regards style; massiveness and simplicity being the chief characteristics. I believe no draught of the church exists. It was probably cruciform, with tower at the crossing; nave with aisles, and apsidal choir. Most of the early churches of the Benedictine Order were of this class, although square east ends were used,† and even a parochial type in later examples was sometimes adapted, as at St. Helen's, Bishopsgate, which had only a wide north (the Nuns') aisle, and no crossing.

It is scarcely likely that Bishop Gravesend (*circa* 1318) rebuilt much of the Priory. Lovel's additions were, besides his own beautiful chapel, probably enlarged windows, alterations at the east end, more commodious dwellings and gatehouses, and possibly heightening of the clerestory. (The alterations to St. Bartholomew's in the fifteenth century have been described as "rebuilding," and it is unlikely that Lovel's alterations were more extensive than there carried out.) Weever says he was a benefactor "not only in building a beautiful chappell, wherein his body was interred, but in many other goodly buildings."

The earliest account I find of buildings at Haliwell is the schedule made just after the dissolution of monasteries *re* the grant to Webbe, setting forth what was within the curtilage, its annual rent value for purchase, what was to be done with the old materials, rights reserved to tenants, &c. First, however, I will proceed to note what has been since then written respecting the actual

remains, for this (except Stow's brief account) is the only early description.

Maitland, who wrote in 1756, briefly mentions them, and Dodsley's book comes next in order, and has this reference,* evidently borrowed from him :

Its ruins are still to be seen in *Saint John's Court* in Holiwell Lane: the populace unjustly consider these are the remains of *Saint John's Palace*, though it does not appear that ever any royal (*sic*) mansion was in this neighbourhood.

Here is evidently a *lapsus calami* in copying from Maitland, who says the remains were spoken of as "*King John's palace*." (Noorthouck, twelve years later, quotes correctly and in full.)

1783.—A writer in the *Gentleman's Magazine*, Nov. 1788, fully describing the parish at large, says :

"In this (Holywell) Liberty is a court called *King John's Court* (rather filthy at present); why it has a royal appellation is very uncertain. *I have seen antique remains of buildings there, formerly consequential.*"

Chassereau's survey of the parish, already referred to, is to a scale of about 400 feet to an inch, and one reference number is "90" against a projection on a large building (Vol. IV., fig. 2, p. 470), and another is "80" placed in the middle of "Holywell Court," while the marginal notes state against both numbers, "*Here are remains, &c.*" It seems clear that the projection "90" was ancient, but what extent of remains were to be seen around the court is not clear, nor can it be exactly determined to what portion of the Priory they belonged. I do not consider that the large rectangular building itself was ancient, but that it had been erected on the site of the church, utilising some of the wall of it, probably that of the south aisle. Had it all been ancient work, the "90" would most likely have been put *on it* instead of by the side. The enlargement given [fig. 4] shows in cross-hatching suggested extent of old work extant at that date. Although this seems the most careful survey of all, it differs largely from those of Strype and Roque, but all show that in a modified form the arrangement of old court and cloister is retained.

1789-1806.—In the original issue of the work (A.D. 1586) and early editions, Haliwell is not mentioned, but in Gough's edition of *Camden's Britannia* † is an addition which specifies the nature of one portion then extant, viz. "In Shore

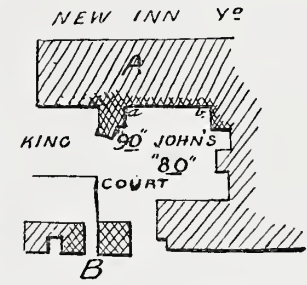


FIG. 4.
Cross-hatched as probable ancient work (1745).
A, Site of Work. B, S. Gatehouse.

† *London and Environs.* † 1789, p. 30.

* For the various sections of Part I. (History) see Vol. IV. pp. 433, 469, 488.

† Barking Abbey Church was an example, A.D. 1215, plan in Lyson's *Environs*, Vol. IV. p. 71.

ditch was Holywell, a Benedictine nunnery, founded 1127. . . *A gate of it remains.*"

This must be one part of remains shown on Chassereau's map, but not all of them. Seventeen years later, in a new edition, the statement is repeated.* Yet, in Ellis's *Shoreditch* (1798), or eight years *ante*, he says: "The gateway mentioned in the new edition of Camden (evidently that of 1789) was *destroyed about 1785*, and but few traces of the Priory are left."

The discrepancy does not appear to have been noticed, although the writers were in communication. Ellis, although a careful investigator of records, seems to have been in error as to its destruction in 1785, which would have been four years before the first mentioned edition of *Britannia* with that statement appeared. Moreover, he says,† Gough told him he had searched for the Lovel inscription without success; so that *he* must have examined whatever ruins there were, and would hardly have retained in two editions information not up to date, supposing his supervision extended beyond the first volume of that of 1806, which is considered doubtful.

I believe the reference to be to the south gatehouse in Holywell Lane, that it existed, at all events, in 1789, and soon after all above ground was destroyed for the erection of the "Old King John," and the poor tenements not so very long ago replaced by modern houses and shops. The Ordnance Survey is inscribed "*Site of Gateway*" at the point in the lane where the North London Railway crosses it. In that position it seems as if it must have opened into the cloisters on the south side of the church, and this would have interfered with the privacy of the inmates, whereas if it be located more to the west it would most probably have opened into the domestic court. There was a "lower gate" which may have given the public access to the church and the mead or garden wherein the well was situated, without the necessity of entering the cloister. Or a postern in the west wall (Ditch side) may have done this independently, a track from Barbican and Cripplegate (which is indicated on maps) would afford quite a direct route from central London.

This conclusion reconciles the discrepancy of locality and the date of demolition. In Chassereau's survey the before mentioned reference (No. 90) is about 120 feet south of New Inn Yard and 130 feet north of Holywell Lane, and this is certainly too far inwards to be the south gatehouse, then (1745) extant, and perhaps indicated by the detached block on the Holywell Lane frontage, but no special reference number added.

After asserting that the gateway was gone in 1789, Ellis continues, "*but few traces of the Priory are left*"; therefore it is most probable that besides the projecting block No. "90," there were others about Holywell Court as indicated in a general way by Chassereau's No. "80."

* 1806, p. 108.

† *History of Shoreditch*, p. 201.

No representation of the gateway is to be found, although of those at Bermondsey and of Holy Trinity, &c., engravings are given in Smith's *Antiquities of London*. They show a large arch for cartway, and a narrower and lower one for the footway entrances. That St. John's Gate, Clerkenwell, is so well preserved is a matter for great satisfaction, and Mr. W. Monk's recent etchings will help to revive the interest these remains should excite.

1823.—In Ellis, Caley, and Bandinel's edition of Dugdale* the following fresh information brings the original account up to that date, viz. :—

The present remains . . . are confined to some walls, a small arch, and part of a doorway in a back cellar of a public-house, known by the sign of the "Old King John."

A stone gateway, the last principal building of the nunnery which remained, was taken down *about* the year 1785.

As Ellis was a co-editor with others he may be responsible for this statement. Whenever it was this structure was demolished, the remains, if far *behind* this public-house, could hardly be part of the gatehouse, but if *below* they no doubt were so. Whatever they were, they remained in existence later than 1823, for the above statement is repeated in the ed. of 1846; and besides this,

1853 Mr. W. S. Hendry, a writer in *Notes and Queries*, † who examined the *locus in quo* in 1843, states: "Part of the *chapel* is now to be found under the floor of the 'Old King John,' and the stone doorway into the porter's lodge of the Priory still exists, but from the accumulation of earth the crown of the arch is six feet *below* the ground."

But if we assume this doorway, as that of the porter's lodge, to have been originally seven feet high, it would make the cill thirteen feet below the present surface, which is an unlikely increase of height by accumulated deposit, even in four centuries.‡ If that "back cellar" was underground, and those remains were identical with the arch which is here spoken of as six feet below, I should conclude it was not the porter's lodge door, but rather one in a cellar beneath it. Nor could the front entry have been very far from Holywell Lane, as the note "in a back cellar" would imply, for it seems clear the south gatehouse was close up to the lane.

Further, regarding Mr. Hendry's statement, if we consider that the church itself was set back enough to admit of a cloister or courtyard on the south side, would it be likely that the foundations of Lovel's Chapel could be under the floor of a building so close to the lane as was this hostelry? Mr. Hendry says he sketched the arch and some other remains of the Priory, also underground, but it was not published.

(To be continued.)

* *Mon. Ang.* 1823. Vol. IV. p. 392.

† Vol. VII. p. 332 (1853).

‡ The ground at St. Bartholomew's has been raised about six feet above the original surface.



BRICKWORK TESTS.

REPORT ON THE THIRD SERIES OF EXPERIMENTS, by WILLIAM C. STREET [F.]
and MAX. CLARKE [A.]. With APPENDICES by PROFESSOR UNWIN [H.A.], F.R.S.

Read at the General Meeting of the Royal Institute of British Architects, Monday, 13th December 1897.

THE experiments conducted by the Science Standing Committee to ascertain the average strength of various descriptions of brickwork were completed last spring by the crushing at the West India Docks of twenty short lengths of brick walls, each about 6 ft. high by 27 in. long, and 18 in. thick.* The results, with notes of the condition of the walls under the increasing strains, are given in the tables annexed, which have been prepared by Mr. Street from the notes made by himself and his colleagues, Messrs. Max. Clarke, Matt. Garbutt, and Bernard Dicksee, who, as before, were present at all the crushings, and took the parts described on page 73 of Vol. IV. of the JOURNAL.

The real load exercised by the ram at the several pressures has been calculated from the formula given by Professor Unwin, as described in an appendix to this Report [p. 100]. The pressure gauges used have been tested by the makers, Messrs. Schäffer & Budenberg, but the errors were so little that, for the purposes of comparison with the previous experiments, it has been thought better to adhere to the indicated readings.

The Committee do not propose at present to give any fixed rules based upon the results or information gained by these experiments, as it is hoped that the Council of the Royal Institute will sanction the preparation of a careful analysis of the facts contained in the three Papers, and issue the same in a suitable shape. If this is done, it may be possible to generalise and formulate rules which should govern the use of different kinds of brickwork as the supporting features of the structures erected under our superintendence.

Any member of the Institute may, however, by a study of the tables of results, form his own conclusions as to safe limits; but it will be of use to the general body that the details shall be arranged and classified by those who have watched the experiments throughout and are acquainted with the particular circumstances connected with the building and crushing of each specimen.

Meanwhile we may be allowed to give a few of the impressions derived.

The resistance of brickwork in lime mortar to crushing would seem to vary to from one-sixth to one-eighth of the resistance offered by the brick itself, while in cement mortar it varies from one-half to one-fifth of that strength. It is obvious that while cement mortar must very materially aid the weaker bricks in their combined strength, it cannot materially affect the ultimate power of resistance in brickwork made of a harder variety.

* For Reports, tables of results, and discussions on the First and Second Series of Experiments, see JOURNAL, Vol. III. 3rd Ser. pp. 333-58; Vol. IV. pp. 73-103, 121-28

Third Series. Vol. V. No. 4.—18 Dec. 1897.

The compression diagram [p. 99] clearly indicates how the mortar is compressed under the increasing strains. The different specimens in lime mortar and those in cement mortar show comparatively little difference in the respective rates at which the beds were crushed, and the only question was how long the bricks would be able to resist the pressure if the load was increased at these rates. Each specimen gave indications that the bricks were going in detail at various points and heights, until the whole of the mass was sufficiently injured as to cause collapse.

The average thickness of the bricks was $2\frac{3}{4}$ in., and the total thickness of the mortar beds was 6 in., while the compression of the lime mortar beds averaged 1 in., and that of the cement mortar beds about $\frac{1}{3}$ in. This proves that the mortar generally was well crushed and disintegrated long before the final collapse of the several examples of brickwork. The instantaneous photographs also show the mortar flowing out as in a stream or fountain at the moment of collapse.

In dealing with the working load that may be calculated upon, care must be taken not to impose such a load as would materially damage the structure of the brickwork. At one-fifth of the crushing load the compression in lime mortar averaged $\frac{7}{32}$ in. in 6 ft. of brickwork, and in cement mortar it averaged $\frac{5}{32}$ in. Another thing that will have to be remembered is the great difference between dead and live loads. It would have been very interesting if experiments could have been devised to ascertain this difference.

No. 34.—Stock Bricks from Sittingbourne, in Lime Mortar 1 to 2.

Wall 6' $1\frac{1}{2}$ " high; 28" \times 18 $\frac{1}{2}$ "; sectional area 3.622 sq. ft.

Built 23rd October 1896; crushed 30th March 1897. Age 22 $\frac{1}{2}$ weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
10.55	8	1.01	.27	—	In bearing.
—	10	1.94	.53	$\frac{1}{32}$	
10.58	13	3.33	.92	$\frac{2}{32}$	Pointing injured by frost spalling.
11.2	18	5.65	1.56	$\frac{3}{32}$	
11.4	22	7.50	2.07	$\frac{4}{32}$	
11.6	30	11.22	3.10	$\frac{5}{32}$	
11.8	40	15.86	4.38	$\frac{6}{32}$	
11.9 $\frac{1}{2}$	50	20.50	5.66	$\frac{7}{32}$	
11.11	64	26.99	7.45	$\frac{8}{32}$	
11.12	75	32.10	8.86	$\frac{9}{32}$	
—	80	34.42	9.50	$\frac{10}{32}$	
—	90	39.06	10.79	$\frac{11}{32}$	
11.14	95	41.38	11.42	$\frac{12}{32}$	
—	100	43.70	12.05	$\frac{13}{32}$	
11.15	105	46.02	12.70	—	Slight internal crack heard.
11.15 $\frac{1}{2}$	110	48.34	13.34	$\frac{14}{32}$	
—	112	49.27	13.60	$\frac{15}{32}$	
11.16	115	50.66	13.99	$\frac{16}{32}$	E. face of wall cracked at centre of course 8.
—	120	52.98	14.62	—	Internal crack heard.
—	125	55.30	15.26	$\frac{18}{32}$	W. face, small cracks in vertical joints.
11.17	130	57.62	15.90	$\frac{20}{32}$	E. face, crack in course 8 opening.
11.18	135	59.94	16.55	—	E. face, fine crack in courses 6 to 8, $2\frac{1}{2}$ " from N.E. angle.
11.18 $\frac{1}{4}$	138	61.33	16.93	$\frac{24}{32}$	E. face cracked at centre from course 6 to 14. Cracking up S. end.
—	142	63.19	17.44	$\frac{28}{32}$	E. face flaking and splitting badly.
11.22	—	—	—	—	W. face bulging, but fairly sound on surface. Wall bent towards N.W., and fell. Pressure falling to 125 lbs. See photographs, figs. 1 and 2 [p. 79]. Mortar set, but still moist. Bottom four courses quite sound after fall, save the S.E. corner, which was the first place to fail.



FIG. 1.



FIG. 2.



FIG. 3.



FIG. 4.

* * The illustrations Figs. 1 to 24 are copyright.

If we take a safe load, or one that would not materially damage the structure, as one-fifth of the crushing load, it may be assumed from the results obtained that in lime mortar 1 to 2 Stock brickwork is equal to about $3\frac{1}{2}$ tons, Gault 6 tons, Fletton 6 tons, Leicester Red 9 tons, and Staffordshire Blue 23 tons per square foot. In Portland cement mortar, 1 to 4, Stocks would be equal to about 8 tons, Gaults 10 tons, Flettons 11 tons, Leicester Red 17 tons, and Staffordshire Blue 24 tons per square foot. This is only a general assumption, which requires further consideration.

The influence of form upon strength has to be considered, but under the ordinary or average conditions of practice, the form of brickwork does not appear very greatly to affect the strength, the 18 in. square piers having given approximately similar results per square foot to those obtained from specimens 27 in. by 18 in., and in a building of any height the

No. 35. Stock Bricks from Sittingbourne, in Lime Mortar 1 to 2.

Wall 6' 1" high; $28\frac{1}{4}'' \times 18\frac{5}{8}''$; sectional area 3.654 sq. ft.

Built 23rd October; crushed 30th March. Age 22 $\frac{1}{2}$ weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
1.5	10	1.94	.53	—	In bearing. Pointing loose by frost.
1.6	13	3.33	.91	1	
1.7	14	3.79	1.04	2	
1.7 $\frac{1}{2}$	15	4.26	1.16	3	
1.8 $\frac{1}{4}$	17	5.19	1.42	4	
1.9 $\frac{1}{2}$	20	6.58	1.80	5	Joints spalling.
1.11	26	9.36	2.56	6	
1.11 $\frac{1}{2}$	30	11.22	3.07	7	
1.13 $\frac{3}{4}$	41	16.32	4.47	8	
1.16	51	20.96	5.74	9	
1.19	68	28.85	7.89	10	
1.21	80	34.42	9.42	11	Slight internal sound.
1.24	95	41.38	11.32	12	
1.25 $\frac{1}{2}$	104	45.56	12.47	13	
1.26 $\frac{1}{2}$	115	50.66	13.86	14	
1.27 $\frac{1}{2}$	120	52.98	14.50	15	W. face, small crack through course 2.
1.28	125	55.30	15.13	—	See photograph, fig. 3 [p. 79].
1.29	130	57.62	15.77	16	S. end, crack through course 23.
1.29 $\frac{3}{4}$	135	59.94	16.40	17	
1.30 $\frac{1}{2}$	140	62.26	17.04	18	W. face, cracks in courses 8, 10, and 13.
1.31	141	62.72	17.16	—	E. face, crack in course 16.
1.31 $\frac{1}{2}$	144	64.11	17.54	—	E. face, crack in course 18.
1.31 $\frac{3}{4}$	145	64.58	17.67	—	E. face, crack in course 6.
1.32	147	65.50	17.92	19	E. face, crack in course 17.
1.32 $\frac{1}{4}$	150	66.90	18.31	20	
1.34	155	69.22	18.94	21	E. face, several cracks at various levels, about 2 $\frac{1}{2}$ " from
				22	toothings on both corners; also several cracks on S. end.
1.35	157	70.15	19.19	—	N. end, course 12 split at centre.
				23	E. face, courses 12, 16, and 18 split.
1.36	160	71.54	19.57	24	E. face, many hair cracks, and small fragments of mortar
				25	dropping.
				26	W. face, crack 6" from S. corner through courses 12 to 19.
				27	N. end, only the one crack noted at 157 lbs.
—	161	72.00	19.70	28	
1.37 $\frac{1}{2}$	162	72.47	19.83	29	Wall cracking up and widening to 19". Pressure falling.
				30	See photograph, fig. 4 [p. 79].
1.39	—	—	—	31	E. face, N.E. corner fell out, and fall of whole wall followed.
				32	Courses 4 to 7 nearly intact after fall. The top seven courses
					fell solid, but three upper ones were smashed on striking
					the ground.
					Mortar set, but still damp.



FIG. 5.



FIG. 6.



FIG. 7.



FIG. 8.

total height may be considered as divided by each floor. Otherwise, the effect of a shearing or a bending strain, however introduced, would be fatal to any walls of great height and length.

Another question is that of the effect of age upon the different varieties of brickwork. The specimens marked *a* in the second series were three months old, and all of those in the third series were five months old. Upon inspection of the tables of results it will be seen that, except in the case of blue bricks in cement, those built three months gave very similar results to those built five months. The difference in the case of the blue bricks is partly explained by the fact that the bricks of which the specimens 27 in. by 18 in. were built were from a stronger lot than those of which the 18 in. square were built, the samples from each delivery failing respectively at 779 and 701 tons per square foot.

No. 36.—Gault Bricks from Burham, Kent, in Lime Mortar 1 to 2.

Wall 6' 0 $\frac{1}{2}$ " high; 27 $\frac{1}{2}$ " 18"; sectional area 3.437 sq. ft.

Built 23rd October; crushed 30th March. Age 22 $\frac{3}{4}$ weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
2.16 $\frac{1}{2}$	14	3.79	1.10	—	In bearing.
2.17	15	4.26	1.24	$\frac{1}{32}$	
2.17 $\frac{3}{4}$	16	4.72	1.37	$\frac{2}{32}$	
2.18 $\frac{1}{2}$	20	6.58	1.91	$\frac{3}{32}$	
2.19 $\frac{1}{2}$	25	8.90	2.59	$\frac{4}{32}$	
2.20 $\frac{1}{2}$	35	13.54	3.94	$\frac{5}{32}$	
—	47	19.11	5.56	$\frac{6}{32}$	
2.24	70	29.78	8.66	$\frac{7}{32}$	
2.26 $\frac{1}{4}$	85	36.74	10.69	$\frac{8}{32}$	
—	104	45.56	14.13	$\frac{9}{32}$	E. face, hair crack in course 4, 3" from S.E. angle.
2.30 $\frac{1}{2}$	105	46.02	13.39	$\frac{10}{32}$	
2.36 $\frac{1}{2}$	115	50.66	14.74	$\frac{11}{32}$	
2.39 $\frac{1}{2}$	125	55.30	16.09	—	W. face, 2 cracks in centre of course 16.
—	138	61.33	17.84	$\frac{11}{32}$	
2.43	140	62.26	18.11	—	Slight sound.
2.45	150	66.90	19.46	$\frac{12}{32}$	
2.45 $\frac{1}{2}$	155	69.22	20.14	—	W. face, crack in course 8, S.W. angle.
2.47 $\frac{1}{2}$	165	73.86	21.49	$\frac{13}{32}$	
2.48 $\frac{1}{2}$	170	76.18	22.16	—	Sharp audible cracks.
—	171	76.64	22.30	—	N. end, 1" from N.E. angle; crack in overhanging toothing. S. end, crack in centre of course 14.
2.49 $\frac{1}{2}$	175	78.50	22.83	$\frac{14}{32}$	
2.50 $\frac{1}{2}$	185	83.14	24.19	—	E. face, slight hair crack in course 16, 6" from S.E. angle.
2.51	190	85.46	24.86	$\frac{15}{32}$	E. face, crack continued down through course 18. S. end, cracks in courses 15 to 18.
—	194	87.31	25.40	—	E. face, crack continued up through course 14.
2.52	198	89.17	25.95	$\frac{16}{32}$	E. face, crack in course 10, 4 $\frac{1}{2}$ " from N.E. angle. Audible crack.
2.52 $\frac{1}{2}$	200	90.10	26.21	—	E. face, hair crack in course 18, 7" from N.E. angle. W. face, cracks spreading and opening.
2.53 $\frac{1}{2}$	205	92.42	26.89	$\frac{17}{32}$	
2.54	210	94.74	27.56	—	E. face, hair cracks in centre of courses 18 and 20.
—	215	97.06	28.24	$\frac{18}{32}$	E. face, hair crack in course 6, 4 $\frac{1}{2}$ " from S.E. angle.
—	225	101.70	29.59	$\frac{18}{32}$	N. end, courses 15, 16, and 17 split at centre, and followed by similar split in courses 3 to 6. Wall 18 $\frac{1}{2}$ " wide.
2.56 $\frac{1}{2}$	230	104.02	30.26	$\frac{20}{32}$	
2.58	238	107.73	31.34	$\frac{21}{32}$	E. face, five cracks in courses 14 to 18. Pressure fell and wall moved, shifting compression gauge. The cracks opened generally, then the S.E. corner split out, and the wall fell.



FIG. 9.



FIG. 10.



FIG. 11.



FIG. 12.

No. 37.—Gault Bricks from Burham, Kent, in Lime Mortar 1 to 2.

Wall 6' 0 $\frac{1}{8}$ " high; 27 $\frac{1}{2}$ " × 18"; sectional area 3·437 sq. ft.
 Built 23rd October; crushed 30th March. Age 22 $\frac{1}{2}$ weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
3.41	15	4·26	1·24	—	In bearing.
—	19	6·12	1·78	$\frac{1}{32}$	
—	21	7·04	2·05	$\frac{2}{32}$	
3.42 $\frac{1}{2}$	25	8·90	2·59	$\frac{3}{32}$	
3.43	30	11·22	3·26	$\frac{4}{32}$	
3.43 $\frac{3}{4}$	40	15·86	4·61	$\frac{5}{32}$	
3.44 $\frac{1}{4}$	50	20·50	5·96	$\frac{6}{32}$	
3.45	65	27·46	7·99	$\frac{7}{32}$	
3.47	82	35·35	10·29	$\frac{8}{32}$	
3.48	85	36·74	10·69	—	
3.51	100	43·70	12·71	$\frac{9}{32}$	
3.54	118	52·05	15·14	$\frac{10}{32}$	
3.56	130	57·62	16·76	—	E. face, two hair cracks in course 24, next S.E. angle.
3.57	135	59·94	17·44	$\frac{11}{32}$	E. face, the cracks already noticed at bottom of wall passing upwards for 3 courses.
3.59	145	64·58	18·79	$\frac{12}{32}$	W. face, flaking centre of top course.
4.1	160	71·54	20·81	$\frac{13}{32}$	N. end, courses 18 to 22 cracked at centre.
4.2	169	75·72	22·03	$\frac{14}{32}$	N. end, crack in centre of course 15.
4.3 $\frac{1}{2}$	175	78·50	22·84	$\frac{15}{32}$	W. face, crack in courses 14 to 16, 4 $\frac{1}{2}$ " from S. corner.
4.4 $\frac{1}{2}$	180	80·82	23·51	—	S. end, two cracks in centre.
4.5 $\frac{1}{2}$	185	83·14	24·18	$\frac{16}{32}$	E. face, crack in course 8, 7 $\frac{1}{2}$ " from S.E. angle.
4.6	187	84·07	24·46	—	W. face, two cracks near bottom, N. angle.
4.7 $\frac{1}{2}$	195	87·78	25·54	—	E. face, courses 20 to 24 cracked at 2 $\frac{1}{4}$ " from S.E. angle.
4.8	200	90·10	26·21	—	E. face, courses 18 to 20 cracked at 2 $\frac{1}{4}$ " from N.E. angle, and the crack at centre of N. end opening $\frac{1}{32}$ ".
4.8 $\frac{1}{2}$	205	92·42	26·89	—	Sounds of internal cracking.
4.9	210	94·74	27·56	$\frac{17}{32}$	N. end, centre crack extending to course 14.
4.10	220	99·38	28·92	$\frac{18}{32}$	E. face, cracking and flaking at bottom. S.E. angle.
4.11	230	104·02	30·26	$\frac{19}{32}$	W. face, cracked from course 12 to 19, S. angle.
4.12	235	106·34	30·94	—	N. end, centre crack open $\frac{1}{16}$ ".
—	—	—	—	$\frac{22}{32}$	E. face, splitting in centre.
—	—	—	—	$\frac{24}{32}$	W. face, cracking in several places. (See photograph, fig. 5.)
—	—	—	—	$\frac{25}{32}$	Pressure fell, S.E. corner fell out, next the S.W. corner, and then the whole gave way, the mass falling towards N.
—	—	—	—	$\frac{26}{32}$	Mortar set harder than in Nos. 34 and 35, but not quite dry.

No. 38.—Red Bricks from Ellistown, near Leicester, in Lime Mortar 1 to 2.

Wall 6' 1" high; 27" × 18"; sectional area 3·375 sq. ft.
 Built 29th October; crushed 31st March. Age 21 $\frac{1}{2}$ weeks.

10.52 $\frac{1}{2}$	15	4·26	1·26	—	In bearing.
10.54	20	6·58	1·95	$\frac{1}{32}$	
10.56	40	15·86	4·69	$\frac{2}{32}$	
10.57 $\frac{1}{2}$	70	29·78	8·82	$\frac{3}{32}$	
10.58	95	41·38	12·26	$\frac{4}{32}$	
10.59 $\frac{1}{2}$	115	50·66	15·01	$\frac{5}{32}$	
11.0 $\frac{1}{2}$	128	56·69	16·80	$\frac{6}{32}$	
11.2	139	61·79	18·31	$\frac{7}{32}$	
11.3 $\frac{1}{4}$	145	64·58	19·13	$\frac{8}{32}$	
11.6 $\frac{1}{2}$	160	71·54	21·20	$\frac{9}{32}$	
11.8	168	75·25	22·30	$\frac{10}{32}$	
11.11	180	80·82	23·95	$\frac{11}{32}$	
11.13	188	84·53	25·04	$\frac{12}{32}$	
11.15	200	90·10	26·70	$\frac{13}{32}$	E. face, bottom course cracked 2 $\frac{1}{2}$ " from S.E. angle.
11.18	210	94·74	28·07	$\frac{14}{32}$	E. face, crack in course 16, 6" from N.E. angle.
—	215	97·06	28·76	—	E. face, mortar slightly squeezing out.
11.21	220	99·38	29·44	$\frac{15}{32}$	E. face, hair crack in course 12, 6" from S.E. angle.
11.22	225	101·70	30·13	$\frac{16}{32}$	E. face, hair crack in course 14, 6" from N.E. angle.
11.24	235	106·34	31·51	$\frac{17}{32}$	W. face, small crack at bottom.
11.25	240	108·66	32·20	—	E. face, crack in course 18, 1 $\frac{1}{2}$ " from N.E. angle.
11.26	245	110·98	32·88	$\frac{18}{32}$	
11.27	250	113·30	33·57	$\frac{19}{32}$	E. face, hair crack in course 14, 6" from S.E. angle.
—	—	—	—	—	Slight audible crack.

[No. 38 continued on p. 86.



FIG. 13.

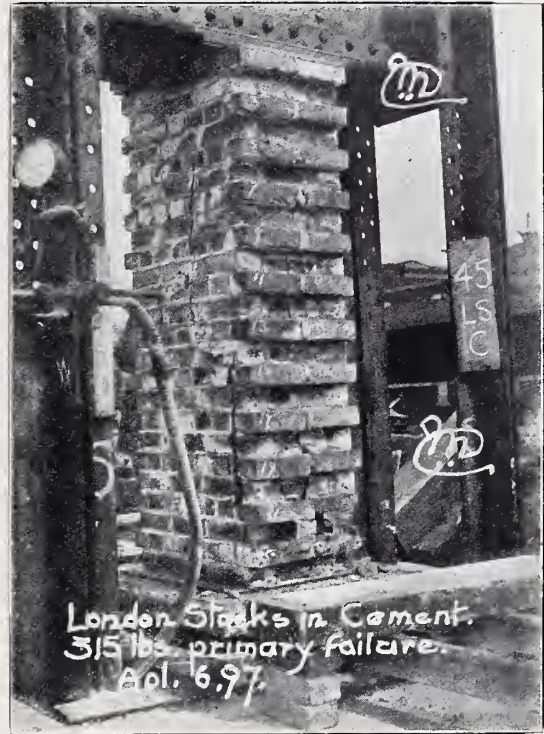


FIG. 14.



FIG. 15.

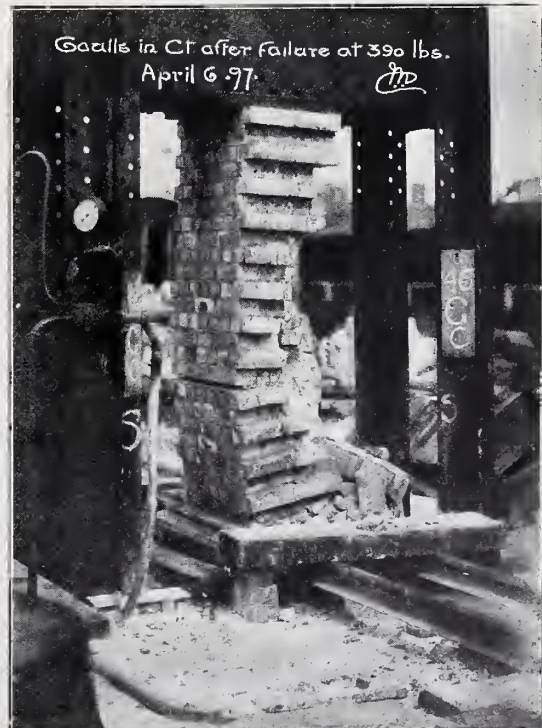


FIG. 16.

No. 38 continued.]

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
11.28	260	117.94	34.94	$\frac{19}{32}$	W. face, crack in centre of course 18. E. face, another crack in course 12, next S.E. angle.
11.30	268	121.65	36.04	$\frac{20}{32}$	At this time the faces of most of the mortar joints on E. face were disintegrated.
11.30 $\frac{1}{2}$	270	122.58	36.32	—	
11.32 $\frac{1}{2}$	280	127.22	37.69	$\frac{21}{32}$	N. end, courses 17 and 19 split at centre.
11.34	285	129.54	38.38	$\frac{22}{32}$	E. face, cracks next N.E. angle slightly opening.
11.35	308	140.21	41.54	$\frac{23}{32}$	
11.35 $\frac{1}{4}$	310	141.14	41.82	$\frac{24}{32}$	E. face showing serious damage near centre. W. face, several detached cracks, courses 17 to 20.
11.36	320	145.78	43.19	$\frac{25}{32}$	
11.38	330	150.42	44.57	$\frac{27}{32}$	Wall bending, convex face to W.
11.39	338	154.13	45.67	$\frac{28}{32}$	S.E. angle, courses 10 to 23, fell out of wall. Pressure fell and wall collapsed, the bottom course alone remaining intact, and very few whole bricks left. Mortar well set, but slightly damp.
11.39 $\frac{1}{2}$	340	155.06	45.94	$\frac{30}{32}$	
—	—	—	—	1	

No. 39.—Red Bricks from Ellistown, near Leicester, in Lime Mortar 1 to 2.

Wall 6' 1 $\frac{1}{2}$ " high; 26 $\frac{7}{8}$ " x 18"; sectional area 3.359 sq. ft.Built 29th October; crushed 31st March. Age 21 $\frac{1}{2}$ weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
1.18	15	4.26	1.27	—	In bearing.
1.20	20	6.58	1.96	$\frac{1}{32}$	No sign of damage.
1.22	30	11.22	3.34	$\frac{2}{32}$	
1.23	40	15.86	4.72	$\frac{3}{32}$	
1.25	64	26.99	8.03	$\frac{4}{32}$	
1.26 $\frac{1}{2}$	80	34.42	10.24	$\frac{5}{32}$	
1.29 $\frac{1}{4}$	103	45.09	13.42	$\frac{6}{32}$	
1.31	117	51.59	15.36	$\frac{7}{32}$	
1.33 $\frac{3}{4}$	132	58.55	17.43	$\frac{8}{32}$	
1.36 $\frac{1}{2}$	142	63.19	18.81	$\frac{9}{32}$	
1.39 $\frac{1}{4}$	158	70.61	21.02	$\frac{10}{32}$	
1.40 $\frac{1}{2}$	169	75.72	22.54	$\frac{11}{32}$	
1.43 $\frac{1}{2}$	178	79.89	23.78	$\frac{12}{32}$	
1.47	186	83.60	24.89	$\frac{13}{32}$	
1.50 $\frac{1}{2}$	200	90.10	26.82	$\frac{14}{32}$	
1.53	215	97.06	28.89	$\frac{15}{32}$	
1.53 $\frac{1}{4}$	220	99.38	29.59	—	
1.55	225	101.70	30.28	$\frac{16}{32}$	Audible crack and slight falling of mortar on E. face. E. face, cracks in four courses near centre. W. face, crack in course 14, 2" from S.W. angle. N. end, cracks in five courses near centre.
1.55 $\frac{1}{2}$	230	104.02	30.97	—	
1.56	240	108.66	32.35	$\frac{17}{32}$	W. face, crack in courses 10 to 12; also in courses 4, 14, and 17. E. face, hair crack in course 4, 3" from S.E. angle. N. end, the crack in centre, noted at 225 lbs., passed up through courses 11 and 10. E. face, hair crack in centre of course 2. W. face, several continuous cracks, courses 14 to 18.
1.57	250	113.30	33.73	$\frac{18}{32}$	
1.58	260	117.94	35.11	$\frac{19}{32}$	E. face, hair crack in centre of course 20. S. end, several cracks in centre.
1.59	275	124.90	37.18	$\frac{20}{32}$	E. face, mortar joints crushed at surface in many places. W. face, internal crushing heard about course 14. N. end, long crack in centre opening slightly. W. face, crushing spreading. E. face, many small cracks in courses 11 to 14, within 12" of N.E. angle. N. end, spalling in courses 4 and 6, near N.E. angle.
1.59 $\frac{1}{4}$	280	127.22	37.87	$\frac{21}{32}$	
2.0	290	131.86	39.25	$\frac{22}{32}$	
2.0 $\frac{1}{2}$	300	136.50	40.64	$\frac{23}{32}$	
—	305	138.82	41.33	—	E. face, many small cracks in courses 11 to 14, within 12" of N.E. angle. N. end, spalling in courses 4 and 6, near N.E. angle.
2.1	310	141.14	42.02	$\frac{24}{32}$	
—	310	141.14	42.02	$\frac{25}{32}$	E. face, surfaces of joints dropping off. (See photograph, fig. 6, p. 81.) E. face, courses 4 to 6 split at 2" from N.E. angle. N. end, new cracks in courses 7 to 10 at 4" from N.W. angle. W. face cracked from bottom up to course 8. Pressure fell; then courses 11 to 14 burst out at S.E. angle, and the wall collapsed. (See photograph, fig. 7, p. 81.)
2.2 $\frac{1}{2}$	315	143.46	42.71	$\frac{26}{32}$	
2.3	320	145.78	43.40	$\frac{27}{32}$	
2.5	330	150.42	44.78	$\frac{28}{32}$	E. face, surfaces of joints dropping off. (See photograph, fig. 6, p. 81.) E. face, courses 4 to 6 split at 2" from N.E. angle. N. end, new cracks in courses 7 to 10 at 4" from N.W. angle. W. face cracked from bottom up to course 8. Pressure fell; then courses 11 to 14 burst out at S.E. angle, and the wall collapsed. (See photograph, fig. 7, p. 81.)
—	—	—	—	$\frac{29}{32}$	
—	—	—	—	$\frac{30}{32}$	



FIG. 17.



FIG. 18.



FIG. 19.

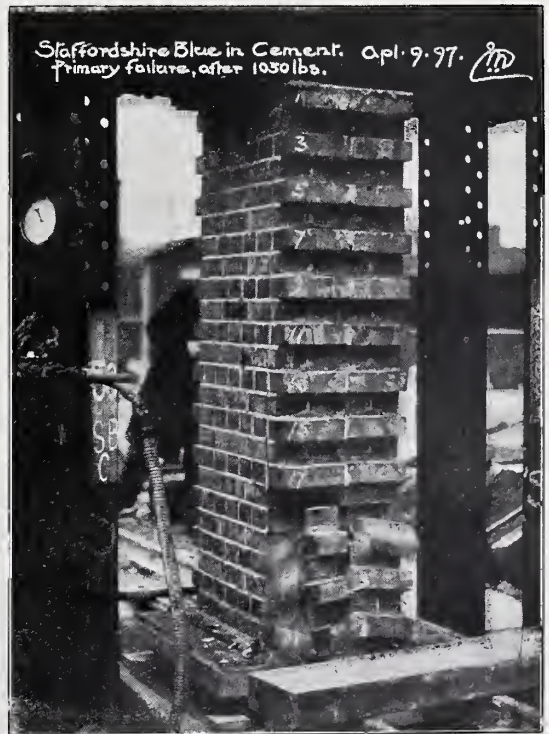


FIG. 20.

No. 40.—Blue Bricks from Rowley Regis, in Lime Mortar 1 to 2.

Wall 6' 1 $\frac{3}{8}$ " high; 27" × 18"; sectional area 3·375 sq. ft.Built 29th October; crushed 31st March. Age 21 $\frac{6}{7}$ weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
3.34 $\frac{1}{2}$	13	3·33	·99	—	In bearing.
3.36	23	7·97	2·36	$\frac{2}{32}$	
3.36 $\frac{1}{2}$	32	12·15	3·60	$\frac{3}{32}$	
3.37	40	15·86	4·70	$\frac{4}{32}$	
3.38 $\frac{1}{4}$	68	28·85	8·55	$\frac{6}{32}$	
3.39	90	39·06	11·57	$\frac{7}{32}$	
3.39 $\frac{1}{2}$	103	45·09	13·36	$\frac{8}{32}$	
3.40	120	52·98	15·70	$\frac{9}{32}$	
3.40 $\frac{1}{4}$	128	56·69	16·80	$\frac{10}{32}$	
3.41	138	61·33	18·17	$\frac{11}{32}$	
—	150	66·90	19·82	—	Slight disintegration of joint faces generally, worst nearest bottom.
3.42	152	67·83	20·10	$\frac{12}{32}$	W. face, small piece split off course 1, next iron plate.
3.43	161	72·00	21·33	$\frac{13}{32}$	
3.44 $\frac{1}{2}$	169	75·72	22·44	$\frac{14}{32}$	
3.47 $\frac{1}{2}$	183	82·21	24·36	$\frac{15}{32}$	
3.49	190	85·46	25·32	$\frac{16}{32}$	
3.52	203	91·49	27·10	$\frac{17}{32}$	
3.55	218	98·45	29·17	$\frac{18}{32}$	
3.57 $\frac{1}{4}$	232	104·94	31·09	$\frac{19}{32}$	
3.58	245	110·98	32·88	$\frac{20}{32}$	E. face, hair cracks in vertical joints, courses 12 to 16. W. face, crack in brick at north end of bottom course.
4.0	255	115·62	34·26	$\frac{21}{32}$	S. end, crack in centre of course 22. W. face, crack in course 4, 6" from N. end.
4.0 $\frac{1}{4}$	260	117·94	34·94	$\frac{22}{32}$	E. face, mortar dropping slightly off joints.
4.2	290	131·86	39·07	$\frac{23}{32}$	Slight internal sounds.
4.3	310	141·14	41·82	$\frac{24}{32}$	
4.3 $\frac{1}{2}$	320	145·78	43·19	$\frac{25}{32}$	E. face, no bricks cracked yet.
4.4 $\frac{1}{2}$	340	155·06	45·94	$\frac{26}{32}$	
4.5	348	158·77	47·04	$\frac{27}{32}$	
4.6 $\frac{1}{2}$	370	168·98	50·07	$\frac{28}{32}$	Mortar falling badly. W. face, crack in course 1, 8" from N. end.
4.7	375	171·30	50·75	$\frac{30}{32}$	
4.8	390	178·26	52·82	$\frac{31}{32}$	
4.9	405	185·22	54·88	1	
4.10 $\frac{1}{4}$	425	194·50	57·63	$\frac{1}{32}$	
4.10 $\frac{1}{2}$	430	196·82	58·32	$\frac{1}{32}$	Audible crack. W. face, crack in course 24, 4" from N. end.
4.12	455	208·42	61·75	$\frac{3}{32}$	N. end, hair crack in centre of course 18.
4.12 $\frac{1}{2}$	480	220·02	65·19	$\frac{4}{32}$	
4.13 $\frac{1}{2}$	495	226·98	67·25	$\frac{5}{32}$	Wall bent slightly convex towards W. for whole height. Audible crack.
4.14	500	229·30	67·94	$\frac{6}{32}$	E. face, crack in course 12, 10 $\frac{1}{2}$ " from S.E. angle.
4.15	515	236·26	70·00	$\frac{7}{32}$	E. face, hair crack in centre of course 10.
4.16 $\frac{1}{2}$	530	243·22	72·06	$\frac{8}{32}$	E. face, crack at joint in course 13, 12 $\frac{1}{2}$ " from S. S. end, crack in centre of course 13.
4.18	548	251·57	74·54	$\frac{9}{32}$	E. face, joints in courses 6 to 9 cracked and slightly opening. S. end, continuous crack, courses 17 to 23.
4.20	570	261·78	77·56	$\frac{10}{32}$	E. face, hair crack in course 14, 11" from N.E. angle. All joint faces burst off. S. end, cracks in courses 2 and 4, 6" from W. face.
4.21	605	278·02	82·38	$\frac{11}{32}$	W. face, cracks in courses 8 and 10, 4" from S. end.
4.22	615	282·66	83·75	$\frac{12}{32}$	N. end, hair crack in centre of course 14.
4.23	625	287·30	85·12	$\frac{13}{32}$	
4.25	640	294·26	87·19	$\frac{14}{32}$	E. face, hair crack in course 6, 6" from S.E. angle. W. face, cracks in courses 14 to 24, near N. end. W. face, cracks in courses 1 to 10, near S. end. S. end, cracks in courses 6 and 7.
4.26 $\frac{1}{2}$	645	296·58	87·87	—	N. end, hair crack in course 21, 3" from N.W. angle.
4.27	638	293·33	86·91	$\frac{15}{32}$	Pressure fell 7 lbs., but the compression continued.
4.31	675	310·50	92·00	$\frac{16}{32}$	N. end, vertical crack at centre extended up through course 12.
4.33	690	317·46	94·06	—	Pressure wavered slightly.
4.38	720	331·38	98·19	$\frac{17}{32}$	Pressure fell to 705, when there was an audible crack.
4.39	720	331·38	98·19	$\frac{18}{32}$	Pressure rose again to 720.
4.42	750	345·30	102·31	$\frac{19}{32}$	S. end, cracks in courses 14 to 24 and 2 to 10. N. end, stretcher at centre of course 16 sound, but cracks above and below it at centre.

[No. 40 continued on p. 90.]



FIG. 21.

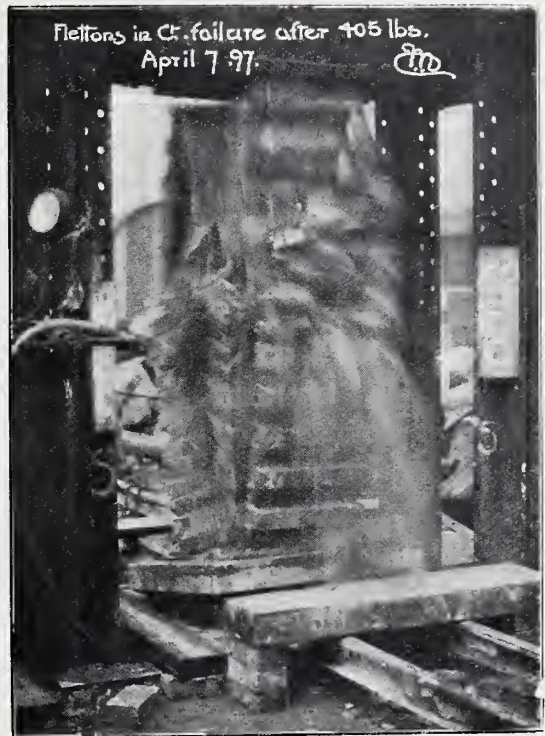


FIG. 22.



FIG. 23.



FIG. 24.

No. 40 continued.]

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
4.45	800	368.50	109.18	1 ²⁰ / ₃₂	N. end split in course 4, 5" from N.E. angle.
4.47	820	377.78	111.93	1 ³⁰ / ₃₂	Visible jump of wall, accompanied by sharp audible crack. Pressure then fell to 800.
					N. end, the stretcher at centre of course 16 cracked. (See note at 750 lbs.)
4.49	820	377.78	111.93	—	Pressure fell to 800, then rose again.
					N. end, a continuous crack from centre of course 11 to bottom of wall.
4.50	830	382.42	113.31	1 ²² / ₃₂	E. face, irregular cracks from top to bottom at S. end.
4.53	—	—	—	—	Pressure fell to 820, and then to below 800, the cracking of wall meantime increasing. (See photograph, fig. 8, p. 81.)
4.56	800	368.50	109.18	1 ²³ / ₃₂	Wall crippled, and pressure somewhat rapidly applied.
5.0	860	396.34	117.43	—	Wall in worst condition at courses 18 to 20, near S.E. angle; it then failed, the southern end falling out first. (See photograph, fig. 9, p. 83.)
5.0½	865	398.66	118.12	—	

No. 41.—Blue Bricks from Rowley Regis, in Lime Mortar 1 to 2.

Wall 6' 1¾" high; 27" × 18"; sectional area 3.375 sq. ft.
Built 29th October; crushed 31st March. Age 21½ weeks.

10.32¼	15	4.26	1.26	—	In bearing.
10.35	25	8.90	2.63	1 ¹ / ₃₂	
10.35½	39	15.40	4.56	1 ² / ₃₂	
10.36½	58	24.21	7.17	1 ³ / ₃₂	
10.37	82	35.35	10.47	1 ⁴ / ₃₂	
10.38	105	46.02	13.63	1 ⁵ / ₃₂	
10.38¼	119	52.52	15.56	1 ⁶ / ₃₂	
10.38½	130	57.62	17.07	1 ⁷ / ₃₂	
10.39	139	61.79	18.31	1 ⁸ / ₃₂	
10.39½	150	66.90	19.82	1 ⁹ / ₃₂	
10.40	168	75.25	22.30	1 ¹⁰ / ₃₂	
10.41	178	79.89	23.67	1 ¹¹ / ₃₂	
10.41½	187	84.07	24.91	1 ¹² / ₃₂	
10.42	198	89.17	26.41	1 ¹³ / ₃₂	
10.42½	205	92.42	27.38	1 ¹⁴ / ₃₂	
10.43	212	95.67	28.35	1 ¹⁵ / ₃₂	Mortar squeezing out on E. and W. faces.
10.43½	225	101.70	30.13	1 ¹⁶ / ₃₂	
10.44	240	108.66	32.19	1 ¹⁷ / ₃₂	
10.44½	250	113.30	33.57	1 ¹⁸ / ₃₂	
10.45½	260	117.94	34.94	1 ¹⁹ / ₃₂	
10.47	275	124.90	37.01	1 ²⁰ / ₃₂	
10.47½	285	129.54	38.38	1 ²¹ / ₃₂	
10.48½	300	136.50	40.44	1 ²² / ₃₂	
10.49½	310	141.14	41.82	1 ²³ / ₃₂	
10.50	320	145.78	43.19	1 ²⁴ / ₃₂	Mortar falling freely.
10.51	330	150.42	44.57	1 ²⁵ / ₃₂	
10.51½	340	155.06	45.94	1 ²⁶ / ₃₂	
10.53	355	162.02	48.01	1 ²⁷ / ₃₂	
10.54	370	168.98	50.07	1 ²⁸ / ₃₂	
10.55½	380	173.62	51.44	1 ²⁹ / ₃₂	
10.56½	395	180.58	53.51	1 ³⁰ / ₃₂	
10.58	405	185.22	54.88	1 ³¹ / ₃₂	
10.58½	410	187.54	55.57	—	Sound of internal cracking.
10.59	415	189.86	56.25	1 ³⁴ / ₃₂	
11.0½	425	194.50	57.63	1 ³⁵ / ₃₂	S. end, two cracks in centre brick of course 12.
11.2	435	199.14	59.00	1 ³⁶ / ₃₂	W. face, crack in joints of courses 4 and 6, S. end.
					N. end, crack near centre of course 10.
11.4	450	206.10	61.06	1 ³⁷ / ₃₂	N. end, crack in course 1, near W. face.
11.5	460	210.74	62.44	1 ³⁸ / ₃₂	
11.9	470	215.38	63.82	1 ³⁹ / ₃₂	E. face, crack in course 12, near N. end, and detached cracks in courses 4, 12, 14, 20, and 24, at S. end.
11.12	480	220.02	65.19	1 ⁴⁰ / ₃₂	
11.15	490	224.66	66.57	—	E. face, crack in course 10, at N. end.
11.18	500	229.30	67.94	1 ⁴¹ / ₃₂	Internal cracking audible.
					W. face, crack in course 8, 6" from N. end.
					W. face, crack in course 22, at N. joint.
11.22	535	245.54	72.75	1 ⁴² / ₃₂	

No. 41 continued.]

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
11.24	560	257.17	76.19	$\frac{43}{32}$	All joint faces on E. and W. faces gone.
11.26	570	261.78	77.56	$\frac{45}{32}$	
11.27 $\frac{1}{2}$	580	266.42	78.94	$\frac{46}{32}$	
11.28	585	268.74	79.63	—	
11.29	595	273.38	81.00	$\frac{47}{32}$	
11.33	605	278.02	82.38	$\frac{48}{32}$	
11.35	620	284.98	84.44	—	
11.37 $\frac{1}{2}$	630	289.62	85.81	$\frac{49}{32}$	
11.40	640	294.26	87.19	$\frac{50}{32}$	
11.42	680	312.82	92.69	$\frac{51}{32}$	
11.43	700	322.10	95.44	$\frac{52}{32}$	
11.45	740	340.66	100.93	$\frac{53}{32}$	
11.46	760	349.94	103.69	$\frac{54}{32}$	
11.47	780	359.22	106.43	$\frac{57}{32}$	
11.47 $\frac{1}{2}$	790	363.86	107.81	$\frac{59}{32}$	S. end, cracked centre, courses 3 to 10. Wall bulging toward W.
11.48	800	368.50	109.18	$\frac{60}{32}$	
11.48 $\frac{1}{2}$	805	370.82	109.88	$\frac{61}{32}$	
—	—	—	—	$\frac{65}{32}$	Wall split right down N. end at centre. Bent in centre 3" towards W., and then failed. (See photographs, figs. 10, 11, and 12, p. 83.) The bricks in the interior were more shattered than those in the exterior.
11.50	810	373.14	110.56	—	
11.52 $\frac{1}{2}$	—	—	—	—	

No. 42.—Fletton Bricks, in Lime Mortar 1 to 2.
Wall 6' 1 $\frac{1}{2}$ " high; 27" × 18"; sectional area 3.375 sq. ft.
Built 29th October; crushed 2nd April. Age 22 $\frac{1}{2}$ weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
1.49	15	4.26	1.26	—	In bearing.
1.50	18	5.65	1.67	$\frac{2}{32}$	
1.51	23	7.97	2.36	$\frac{3}{32}$	
1.51 $\frac{1}{2}$	30	11.22	3.32	$\frac{4}{32}$	
1.52 $\frac{1}{2}$	45	18.18	5.39	$\frac{5}{32}$	
1.53	65	27.46	8.13	$\frac{6}{32}$	
1.54	105	46.02	13.63	$\frac{7}{32}$	
1.54 $\frac{1}{2}$	117	51.59	15.29	$\frac{8}{32}$	
1.57	130	57.62	17.07	$\frac{9}{32}$	
2.0	141	62.72	18.58	$\frac{10}{32}$	
2.5	153	68.29	20.23	—	E. face, split $\frac{1}{16}$ " wide in course 24, $\frac{3}{4}$ " from S. end.
2.6	155	69.22	20.51	$\frac{11}{32}$	
2.10	167	74.79	22.16	$\frac{12}{32}$	
2.14	182	81.75	24.22	$\frac{13}{32}$	
2.16	190	85.46	25.32	$\frac{14}{32}$	
2.18 $\frac{1}{2}$	197	88.71	26.28	—	
2.19	200	90.10	26.69	—	
2.21	205	92.42	27.38	—	
2.22	208	93.81	27.79	$\frac{15}{32}$	
2.23	210	94.74	28.07	—	
2.25	215	97.06	28.76	$\frac{16}{32}$	S. end, crack in courses 13 to 16 at W. joint, and in course 15 at E. joint; also in centre of courses 18 to 24. E. face, crack in course 16, $1\frac{1}{2}$ " from S. end. E. face, crack in courses 16 and 17, $4\frac{1}{2}$ " from S. end. N. end, crack in centre of course 4. W. face, crack in course 10 at N. end, and in centre of courses 8 to 21. E. face, cracks opening, the worst barely $\frac{1}{16}$ ". The wall bent, S. face fell out, and wall failed. The bricks were broken into about three pieces each throughout the bulk of the work. Only the bottom course remained in place after failure.
2.25 $\frac{1}{2}$	220	99.38	29.44	—	
2.27 $\frac{1}{2}$	230	104.02	30.82	$\frac{17}{32}$	
2.30	—	—	—	—	

No. 43.—Fletton Bricks, in Lime Mortar 1 to 2.

Wall 6' 1½" high; 27" × 18"; sectional area 3·375 sq. ft.
Built 29th October; crushed 2nd April. Age 22½ weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
3.11	18	5·65	1·67	—	In bearing.
3.13	26	9·36	2·77	$\frac{1}{32}$	
3.14	35	13·54	4·01	$\frac{2}{32}$	Audible crack.
3.17	54	22·36	6·62	$\frac{3}{32}$	
3.19 $\frac{1}{4}$	73	31·17	9·23	$\frac{4}{32}$	S. end, crack in centre of courses 2 to 4.
3.20	80	34·42	10·20	$\frac{5}{32}$	
3.21	100	43·70	12·95	$\frac{6}{32}$	E. face, crack in courses 14 to 16, 4½" from S. end. W. face, cracks in courses 10 and 14, near S. end.
3.22	115	50·66	15·01	$\frac{7}{32}$	
3.24	150	66·90	19·82	$\frac{8}{32}$	E. face, crack in course 17, 9" from S. end. E. face, continuous diagonal crack in courses 12 to 14, at S. end.
3.24 $\frac{1}{2}$	165	73·86	21·88	$\frac{9}{32}$	
—	168	75·25	22·30	$\frac{10}{32}$	W. face, crack in course 20, at S. end.
3.25 $\frac{1}{2}$	180	80·82	23·95	$\frac{11}{32}$	
3.26	190	85·46	25·32	$\frac{12}{32}$	S. end, crack right down centre.
3.26 $\frac{1}{2}$	198	89·17	26·42	$\frac{13}{32}$	
3.27	210	94·74	28·07	$\frac{14}{32}$	N. end, crack at centre of course 18. E. face, cracks near centre of courses 12 to 16.
3.28	215	97·06	28·76	$\frac{15}{32}$	
3.28 $\frac{1}{4}$	220	99·38	29·44	$\frac{16}{32}$	W. face cracked all over. The S.E. corner crumbled, and then collapse followed.
—	—	—	—	$\frac{17}{32}$	
3.29	225	101·70	30·13	$\frac{18}{32}$	—
—	—	—	—	$\frac{19}{32}$	
—	—	—	—	$\frac{20}{32}$	—
3.30	228	103·09	30·54	$\frac{21}{32}$	

No. 44.—Stock Bricks from Sittingbourne, in Portland Cement Mortar 1 to 4.

Wall 6' 0½" high; 28" × 18½"; sectional area 3·597 sq. ft.
Built 3rd November; crushed 2nd April. Age 21 $\frac{3}{4}$ weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
4.7 $\frac{1}{2}$	14	3·79	1·05	—	In bearing.
4.7 $\frac{3}{4}$	15	4·26	1·18	$\frac{0}{32}$	
—	—	—	—	$\frac{1}{32}$	These readings of the compression gauge cannot represent actual compression of wall, but must be occasioned by some abnormal fixing of gauge.
4.9	19	6·12	1·70	$\frac{2}{32}$	
4.10	24	8·44	2·34	$\frac{3}{32}$	
4.11	46	18·64	5·18	$\frac{4}{32}$	
4.12	70	29·78	8·28	$\frac{5}{32}$	
4.12 $\frac{1}{4}$	90	39·06	10·86	$\frac{6}{32}$	
4.12 $\frac{1}{2}$	103	45·09	12·53	$\frac{7}{32}$	
4.13 $\frac{1}{4}$	124	54·84	15·25	$\frac{8}{32}$	
4.14	148	65·97	18·34	$\frac{9}{32}$	
4.15	174	78·04	21·69	$\frac{10}{32}$	
4.18	195	87·78	24·40	$\frac{11}{32}$	E. face, courses 21 to 24 cracked at N. end; the bottom course (24) spalled at both ends.
4.22 $\frac{1}{2}$	235	106·34	29·56	$\frac{12}{32}$	
4.24	265	120·26	33·43	$\frac{13}{32}$	N. end, bottom course crushing on plate; small spalls.
4.26	290	131·86	36·66	$\frac{14}{32}$	
4.27	300	136·50	37·95	$\frac{15}{32}$	E. face, course 1 split, in line with N. end of stretcher immediately below it, at N. end. N. end, courses 10 to 24 cracked at each of three vertical joint lines, and part fell out from course 11 to 24.
—	—	—	—	$\frac{16}{32}$	
4.29	310	141·14	39·24	$\frac{17}{32}$	Failed by shearing downward from S. to N., the fracture clean through brick and cement. (See photograph, fig. 13, p. 85.)

No. 45.—Stock Bricks from Sittingbourne, in Portland Cement Mortar 1 to 4.

Wall 6' 0 $\frac{1}{2}$ " high; 28" × 18 $\frac{3}{4}$ "; sectional area 3·646 sq. ft.
Built 3rd November; crushed 6th April. Age 22 weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
10.46	13	3·33	·91	—	In bearing.
10.48	15	4·26	1·17	$\frac{2}{32}$	
10.50	20	6·58	1·80	$\frac{3}{32}$	
10.51	29	10·76	2·95	$\frac{4}{32}$	
10.53	45	18·18	4·99	$\frac{5}{32}$	
10.55	70	29·78	8·17	$\frac{6}{32}$	
10.58	114	50·20	13·77	$\frac{7}{32}$	
11.1	165	73·86	20·26	$\frac{8}{32}$	
11.4	205	92·42	25·35	$\frac{9}{32}$	
11.6	230	104·02	28·53	—	
11.7	250	113·30	31·07	$\frac{10}{32}$	E. face, crack in courses 17 and 18, 3" from N. end; also toothing at N. end of course 17 cracked in line with end of stretchers.
11.9	275	124·90	34·26	—	E. face, course 22 spalled 2" from S. end.
11.9 $\frac{1}{2}$	290	131·86	36·16	$\frac{11}{32}$	N. end, crack in course 11, 3" from W. face.
11.10	295	134·18	36·80	—	Considerable crepitation heard.
11.11	305	138·82	38·07	—	S. end, crack at centre of courses 18 to 20.
11.11 $\frac{1}{2}$	310	141·14	38·71	$\frac{12}{32}$	S. end, crack continued upward to course 16. E. face, crack 2" from S. end, continuing from course 16 to 24.
11.12 $\frac{1}{2}$	315	143·46	39·34	$\frac{13}{32}$	S. end, crack in course 22, 4" from E. face. N. end, crack in course 15, 3" from E. face. Sharp crack heard. W. face cracked near centre and extending. The N.E. corner fell off from top downward; then the S. end followed, and the whole failed. (See photographs, figs. 14 and 15.)

No. 46.—Gault Bricks from Burham, Kent, in Portland Cement Mortar 1 to 4.

Wall 6' 0 $\frac{1}{2}$ " high; 27 $\frac{1}{2}$ " × 18 $\frac{1}{2}$ "; sectional area 3·461 sq. ft.
Built 3rd November; crushed 6th April. Age 22 weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes	
11.51	18	5·65	1·63	—	In bearing.	
11.51 $\frac{1}{2}$	19	6·12	1·77	$\frac{1}{32}$		
11.53	28	10·29	2·97	$\frac{2}{32}$		
11.56	60	25·14	7·26	$\frac{3}{32}$		
11.57 $\frac{1}{2}$	98	42·77	12·35	$\frac{4}{32}$		
11.59	150	66·90	19·33	$\frac{5}{32}$		
12.1	187	84·07	24·29	$\frac{6}{32}$		
12.6	225	101·70	29·38	—		
12.6 $\frac{1}{2}$	230	104·02	30·05	—		S. end, crack in centre of course 22, and through joint of same course.
12.8 $\frac{1}{2}$	245	110·98	32·06	$\frac{7}{32}$		E. face, hair crack in course 1 at toothing next N. end.
12.14 $\frac{1}{2}$	285	129·54	37·42	$\frac{8}{32}$	E. face, crack in course 7 at S. end.	
12.20	315	143·46	41·45	—	E. face, crack in course 21 at N. end. N. end, crack in course 21, 8 $\frac{1}{2}$ " from E. face, and opening slightly.	
12.21 $\frac{1}{2}$	320	145·78	42·12	$\frac{9}{32}$	E. face, crack in course 22, 2" from N. end.	
12.22	325	148·10	42·79	—	E. face, cracks in courses 20 to 23, 2" from N. end.	
12.23 $\frac{1}{2}$	335	152·74	44·13	—	N. end, cracks in courses 21 to 23, near E. face. N.E. angle, small flake off bottom course, and bottom four courses close to angle shattered and cracks opening.	

[No. 46 continued on p. 94.]

No. 46 continued.]

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
12.25 $\frac{1}{4}$	340	155.06	44.80	—	Audible cracking.
12.26	345	157.38	45.47	$\frac{10}{32}$	S. end, cracks in courses 19, 20, and 23, near centre. N.E. angle, top two courses shattered, arris of brick split. E. face, hair crack in centre of course 16. N. end, course 20 to bottom, crack about 3" from E. face opened $\frac{1}{32}$ ".
12.26 $\frac{1}{2}$	365	166.66	48.15	—	N. end, cracks at centre of courses 18 to 21.
12.27 $\frac{1}{2}$	370	168.98	48.82	$\frac{11}{32}$	S. end, crack in centre extended up to course 16.
12.29	380	173.62	50.16	$\frac{12}{32}$	N. end, centre crack extended from course 14 to 21.
12.35	390	178.26	51.50	$\frac{13}{32}$	N. end, centre crack extending up and down.
—	—	—	—	$\frac{14}{32}$	S. end, crack in centre extended to course 12.
—	—	—	—	$\frac{15}{32}$	Audible breaking of bricks.
12.44	—	—	—	—	N. end, hair crack at centre of course 2. Wall split through from N. to S.; then bulged to W., and fell. (See photograph, fig. 16.) Cement was set but not quite dry.

No. 47.—Gault Bricks from Burham, Kent, in Portland Cement Mortar 1 to 4.

Wall 6' 0 $\frac{3}{4}$ " high; 27 $\frac{1}{2}$ " \times 18"; sectional area 3.437 sq. ft.
Built 3rd November; crushed 6th April. Age 22 weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
2.1	14	3.79	1.10	—	In bearing.
2.1 $\frac{1}{4}$	15	4.26	1.24	—	
2.3	17	5.19	1.51	$\frac{1}{32}$	
2.5	21	7.04	2.05	$\frac{2}{32}$	
2.9	39	15.40	4.05	$\frac{3}{32}$	
2.11	60	25.14	7.31	$\frac{4}{32}$	
2.15	135	59.94	17.44	$\frac{5}{32}$	
2.16	155	69.22	20.14	—	E. face, hair crack in course 1, $\frac{1}{2}$ " from N. end.
2.19	200	90.10	26.21	$\frac{6}{32}$	
2.20	220	99.38	28.91	—	Slight but repeated crepitations.
2.24	274	124.44	36.21	$\frac{7}{32}$	
2.25 $\frac{1}{3}$	295	134.18	39.04	—	Slight crepitations.
2.27	310	141.14	41.06	—	Slight crepitations.
2.29	340	155.06	45.11	—	E. face, hair crack in course 24, 2" from S. end. W. face, crack in courses 1 to 6, 6" from S. end. W. face, crack in courses 13 to 16, near S. end. W. face, crack in courses 18 to 23, near N. end.
2.30	355	162.02	47.14	—	Audible cracks at intervals. N. end, hair crack at centre of course 2.
2.31	360	164.34	47.81	$\frac{8}{32}$	S. end, crack at centre of courses 14 to 24.
2.32	375	171.30	49.84	—	N. end, crack in centre of courses 14 to 18, and continuing downwards to course 20.
2.33 $\frac{1}{3}$	385	175.94	51.19	—	W. face, crack in course 5, third header from N. end. E. face, crack in courses 13 to 20, which, without increase of pressure, extended until it reached from course 5 to base of wall. W. face, crack near S. end extended upward to course 11. Wall bulged towards the N., and broke at bed of course 16. N. end, above and below fracture, almost unbroken; the whole of S. end quite shattered and split off. (See photograph, fig. 17.) Cement well set.

No. 48.—Red Bricks from Ellistown, near Leicester, in Portland Cement Mortar 1 to 4.

Wall 6' 0⁵/₈" high; 27¹/₄" × 18"; sectional area 3·406 sq. ft.
 Built 10th November; crushed 6th April. Age 21 weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
3.11 ¹ / ₂	15	4·26	1·25	—	In bearing.
3.12	17	5·19	1·52	$\frac{1}{32}$	
3.13	21	7·04	2·06	$\frac{2}{32}$	
3.14	27	9·83	2·88	$\frac{3}{32}$	
3.16 ¹ / ₂	47	19·11	5·31	$\frac{4}{32}$	
3.18 ¹ / ₂	88	38·13	11·19	$\frac{5}{32}$	
3.20	190	85·46	25·09	$\frac{6}{32}$	
3.24	270	122·58	35·99	$\frac{7}{32}$	
3.25 ¹ / ₂	335	152·74	44·84	—	E. face, course 1 flaked slightly at top near N. end.
3.28 ¹ / ₂	420	192·18	56·42	$\frac{8}{32}$	
3.30 ¹ / ₂	460	210·74	61·87	—	E. face, course 24 split at 1" from S. end.
3.34 ¹ / ₂	505	231·62	68·00	$\frac{9}{32}$	S. end, crack in courses 19 to 21, near W. face.
3.36	515	236·26	69·37	—	N. end, hair crack at centre, courses 1 to 3.
					S. end, crack at centre, courses 1 to 6.
					S. end, crack at centre, course 18.
3.37 ¹ / ₂	520	238·58	70·05	—	S. end, crack at centre, courses 16 and 20.
					S. end, crack at centre, course 14.
					W. face, crack in courses 1 to 3, near S. end.
3.42	535	245·54	72·09	—	E. face, hair crack in course 2, 2" from N. end; this cracked with a sharp sound.
					S. end, crack in bottom brick, next E. face.
3.47	595	273·38	80·26	—	S. end, crack in centre of course 12.
3.48	600	275·70	80·94	—	S. end, crack in centre of course 8.
					The wall suddenly bent towards N., and collapsed.
					Not one brick of S. end left unbroken.
					The whole of the toothings at N. end remained intact. (See photographs, figs. 18 and 19.)

No. 49.—Red Bricks from Ellistown, near Leicester, in Portland Cement 1 to 4.

Wall 6' 0¹/₂" high; 27¹/₄" × 18¹/₈"; sectional area 3·43 sq. ft.
 Built 10th November; crushed 7th April. Age 21¹/₂ weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
10.36 ¹ / ₂	15	4·26	1·24	—	In bearing.
10.37 ¹ / ₂	18	5·65	1·65	$\frac{1}{32}$	
10.38 ¹ / ₂	22	7·50	2·19	$\frac{2}{32}$	
10.41	38	15·93	4·64	$\frac{3}{32}$	
10.43 ¹ / ₂	80	34·42	10·03	$\frac{4}{32}$	
10.45 ¹ / ₂	135	59·94	17·47	$\frac{5}{32}$	
10.48 ¹ / ₂	220	99·38	28·10	$\frac{6}{32}$	
10.54 ¹ / ₂	365	166·66	48·59	$\frac{7}{32}$	E. face, course 24 shattered at 1" from S. end.
10.56	400	182·90	53·32	—	W. face, course 24 shattered at S.W. corner.
11.4 ¹ / ₂	470	215·38	62·79	—	W. face, crack in course 3, 9" from S. end.
11.7	490	224·66	65·50	$\frac{8}{32}$	W. face, crack in course 3 extended to course 5.
11.9	500	229·30	66·85	—	W. face, crack in course 24, S.W. corner, extended to course 23.
11.16	540	247·86	72·26	—	E. face, crack in courses 23 and 24, 2" from S. end.
11.17	550	252·50	73·61	—	E. face, hair crack from top to course 5, 9" from S. end.
					W. face, crack extended from course 3 to top.
					S. end, crack in centre of course 2.
11.19	570	261·78	76·32	—	S. end, crack in centre of courses 23 and 24.
					S. end, crack in course 2 extended to course 4.
					N. end, hair crack in centre of courses 1 and 2.
					E. face, crack in courses 22, 23, and 24, at S. corner.

[No. 49 continued on p. 96.]

No. 49 continued.]

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
11.26 $\frac{1}{2}$	595	273.38	79.70	—	E. face, crack in course 1, at N. end.
11.32	620	284.98	83.09	$\frac{9}{32}$	E. face, crack from course 1 to 7, 9" from S. end. W. face, crack from course 1 to 7, 9" from S. end. S. end, crack in centre of courses 2 to 5. W. face, crack in courses 19 to 22, at S. end.
11.39	640	294.26	85.78	—	E. face, sudden split in courses 14 to 24, 2" from S. end. The pressure fell, but the wall generally looked sound. The crack on E. face at 9" from S. end continued down from course 7 to 13, and opened slightly.
11.48	—	—	—	—	S. end fell off in pieces, wall bent at bed of course 13, the N. end remaining intact. The head of ram then heeled over to N., and the upper part of wall fell in one piece to N., but did not separate on striking the ground. The cement was set and very slightly damp.

No. 50. — Blue Bricks from Rowley Regis, in Portland Cement Mortar 1 to 4.

Wall 6' 0 $\frac{1}{2}$ " high; 27 $\frac{1}{4}$ " x 18"; sectional area 3.406 sq. ft.Built 10th November; crushed 9th April. Age 21 $\frac{3}{4}$ weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
1.44	19	6.12	1.79	—	In bearing.
1.45	25	8.90	2.61	$\frac{1}{32}$	
1.45 $\frac{1}{2}$	32	12.15	3.57	$\frac{1}{32}$	
1.46 $\frac{1}{2}$	51	22.36	6.56	$\frac{1}{32}$	
1.48	95	41.38	12.15	$\frac{1}{32}$	
1.49	230	104.02	30.51	$\frac{1}{32}$	
—	400	182.90	53.70	—	At about this pressure slight internal crepitations were audible on applying the ear to the wall.
1.50 $\frac{1}{2}$	425	194.50	57.10	$\frac{5}{32}$	
—	560	257.14	75.49	—	No sign of injury on N. end or E. face.
2.1	600	275.70	80.94	$\frac{7}{32}$	
2.10	690	317.46	93.21	—	S.E. angle, brick in bottom course spalling.
2.11 $\frac{1}{2}$	720	331.38	97.29	$\frac{8}{32}$	W. face, crack in courses 1 to 4, 6" from S. end.
2.14	790	363.86	106.83	—	E. face, hair crack in course 22, 2 $\frac{1}{2}$ " from S. end. E. face, hair crack in courses 1 to 3, 9" from N. end. N. end, hair crack at centre of courses 2 to 5. E. face, course 23 spalled at S. end.
2.15	820	377.78	110.91	—	E. face, hair crack in courses 20 to 23, 2 $\frac{1}{4}$ " from S. end. W. face, crack noted at 720 extended to course 7, 9" from S. end.
2.16 $\frac{1}{2}$	850	391.70	115.00	$\frac{9}{32}$	
2.17 $\frac{1}{2}$	880	405.62	119.09	—	E. face, hair crack in course 2, 6" from S. end.
2.18 $\frac{1}{2}$	940	433.46	127.26	$\frac{10}{32}$	N. end, crack previously noted in course 4 opening. S. end, crack in centre of courses 14 to 24. S. end, crack in centre of courses 1 to 8. N. end, crack in courses 5 to 9, 6" from E. face.
2.20	1000	461.30	135.44	—	
—	1020	470.58	138.16	$\frac{11}{32}$	
2.21	1030	475.22	139.52	$\frac{11}{32}$	S. end, crack in courses 11 to 13, near W. face.
2.22	—	—	—	—	Failed very suddenly by shearing. The bottom portion, comprising about ten courses, was thrown off ram and turned over, after which a block of the seven bottom courses remained intact, save 4 $\frac{1}{2}$ " of the S. end. Cement set and nearly dry, not much adhesion to bricks. Bricks not shattered, but in pieces of $\frac{1}{4}$ brick and upwards, many unbroken bricks, and blocks of work remaining. (See photographs, figs. 20 and 21.)

No. 51.—Blue Bricks from Rowley Regis, in Portland Cement Mortar 1 to 4.

Wall 6' 0 $\frac{1}{8}$ " high; 27 $\frac{1}{4}$ " × 18"; sectional area 3·406 sq. ft.
 Built 10th November; crushed 9th April. Age 21 $\frac{3}{4}$ weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
10.35	17	5·19	1·52	—	In bearing.
10.35 $\frac{1}{4}$	18	5·65	1·66	$\frac{2}{32}$	
10.37	41	16·32	4·79	$\frac{4}{32}$	Slight crack heard.
10.39	380	173·62	50·97	$\frac{6}{32}$	Slight crack heard.
—	440	201·46	59·15	$\frac{8}{32}$	N. end, small spall flew off course 2, 1" from E. face.
10.42 $\frac{3}{5}$	470	215·38	63·23	$\frac{8}{32}$	
10.48	505	231·62	68·00	—	S. end, diagonal crack across projecting toothing in course 23.
10.55	540	247·86	72·77	—	N. end, crack in course 2, 3 $\frac{3}{8}$ " from E. face, open $\frac{1}{64}$ ".
11.10	635	291·94	85·71	$\frac{9}{32}$	Audible cracks.
11.15	640	294·26	86·39	—	E. face, hair crack in courses 2 to 4, 9" from S. end. W. face, crack, courses 1 to 3, 6" from S. end.
11.18	650	298·90	87·76	—	W. face, crack, courses 1 to 3, extended to course 4.
11.19	655	301·22	88·44	—	Sharp crack heard, as of brick snapping.
11.21 $\frac{3}{5}$	690	317·46	93·21	—	W. face, crack noted at 640 extended to course 5.
11.25	740	340·66	100·02	$\frac{10}{32}$	Bottom brick at S.W. corner spalling.
—	750	345·30	101·38	—	E. face, crack noted at 635 extended courses 1 to 7.
11.28	770	354·58	104·10	—	E. face, crack noted at 635 opening very slightly.
11.32	830	382·42	112·28	—	S. end, crack in centre of courses 2 to 6 extended to course 8.
11.33	835	384·74	112·96	$\frac{11}{32}$	S. end, crack in centre of courses 2 to 6 extended to course 8. N.E. angle of course 2 spalled off.
11.46 $\frac{3}{5}$	850	391·70	115·00	—	E. face, hair crack in course 2, 3" from N. end.
11.47 $\frac{3}{5}$	930	428·82	125·90	$\frac{12}{32}$	Pressure gauge fell to 775, the leakage of ram cylinder temporarily overcoming the hand pumping.
11.48 $\frac{1}{2}$	970	447·38	131·35	—	N. end, hair crack in course 3, 2 $\frac{1}{2}$ " from E. face. N. end, hair crack in course 4, 4 $\frac{1}{3}$ " from E. face (at joint). N. end, hair crack in course 5, 2 $\frac{3}{8}$ " from E. face. N. end, hair crack in course 6, 4" from E. face.
					E. face, crack in course 5, 9" from N. end. W. face, crack in course 7.
					Wall failed by shearing from N. end at top to S. end at bottom. The bottom block jumped clean off ram, and a piece comprising greater part of wall from course 12 to 24 remained unbroken on the ground. Cement was set and nearly dry.

No. 52.—Fletton Bricks, in Portland Cement Mortar 1 to 4.

Wall 6' 0 $\frac{5}{8}$ " high; 27" × 18"; sectional area 3·375 sq. ft.
 Built 13th November; crushed 7th April. Age 20 $\frac{5}{7}$ weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
1.17 $\frac{1}{2}$	14	3·79	1·12	—	In bearing.
—	16	4·72	1·40	$\frac{1}{32}$	
1.19	20	6·58	1·95	$\frac{2}{32}$	
—	31	11·68	3·46	$\frac{3}{32}$	
1.21	52	21·43	6·35	$\frac{4}{32}$	
1.23	105	46·02	13·63	$\frac{5}{32}$	
1.25	158	70·61	20·92	$\frac{6}{32}$	
1.26	250	113·30	33·57	$\frac{7}{32}$	E. face, hair crack in course 24, 1 $\frac{1}{2}$ " from S. end. E. face, hair crack in course 23, $\frac{1}{2}$ " from S. end. E. face, hair crack in course 1, $\frac{1}{2}$ " from N. end.
1.36	310	141·14	41·82	—	E. face, hair crack in course 10, 2 $\frac{1}{2}$ " from S. end.
—	320	145·78	43·19	$\frac{8}{32}$	S. end, sudden crack in centre of courses 1 to 7.
—	330	150·42	44·57	—	W. face, crack in course 24 in brick at S. end. N. end, hair crack in course 1, 6" from E. face.

[No. 52 continued on p. 98.]

No. 52 continued.]

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
1.39	335	152.74	45.26	$\frac{9}{32}$	E. face, hair crack in course 2, $\frac{3}{2}$ " from S. end.
—	350	159.70	47.32	—	S. end, crack in course 9, 4" from E. face.
1.48	380	173.62	51.44	$\frac{10}{32}$	W. face, crack in course 2 at S. joint.
—	385	175.94	52.13	—	S. end, crack in centre of courses 19 to 21.
					E. face, hair crack in course 2, 5" from S. end.
					E. face, hair crack in course 3, 9" from S. end.
					E. face, hair crack in course 4, 3" from S. end.
					E. face, hair crack in course 6, 11" from S. end.
					E. face, hair crack in courses 2 to 11, 2" from S. end.
					N. end, courses 3 to 10 split at centre and opening a little.
	395	180.58	53.50	$\frac{11}{32}$	E. face, a triangle, having as base the S.E. angle courses 1 to 11, and apex in course 6, and 12" from S. end, full of cracks, showing general shattering of that part.
					S. end, crack in centre of course 10.
					W. face, crack in courses 10 to 22, 6" from S. end.
					W. face, crack in courses 1 to 6, 9" from N. end.
1.52	400	182.90	54.19	—	
1.53 $\frac{1}{2}$	405	185.22	54.88	$\frac{12}{32}$	E. face, surface of header in course 8, 5" from S. end, fell off.
					Wall failed suddenly, bending to N. at bed of course 11.
					N. end unbroken (save by cracks above noted) until moment of fall; S. end entirely shattered. (See photographs, figs. 22 and 23.)

No. 53.—Fletton Bricks in Portland Cement Mortar 1 to 4.

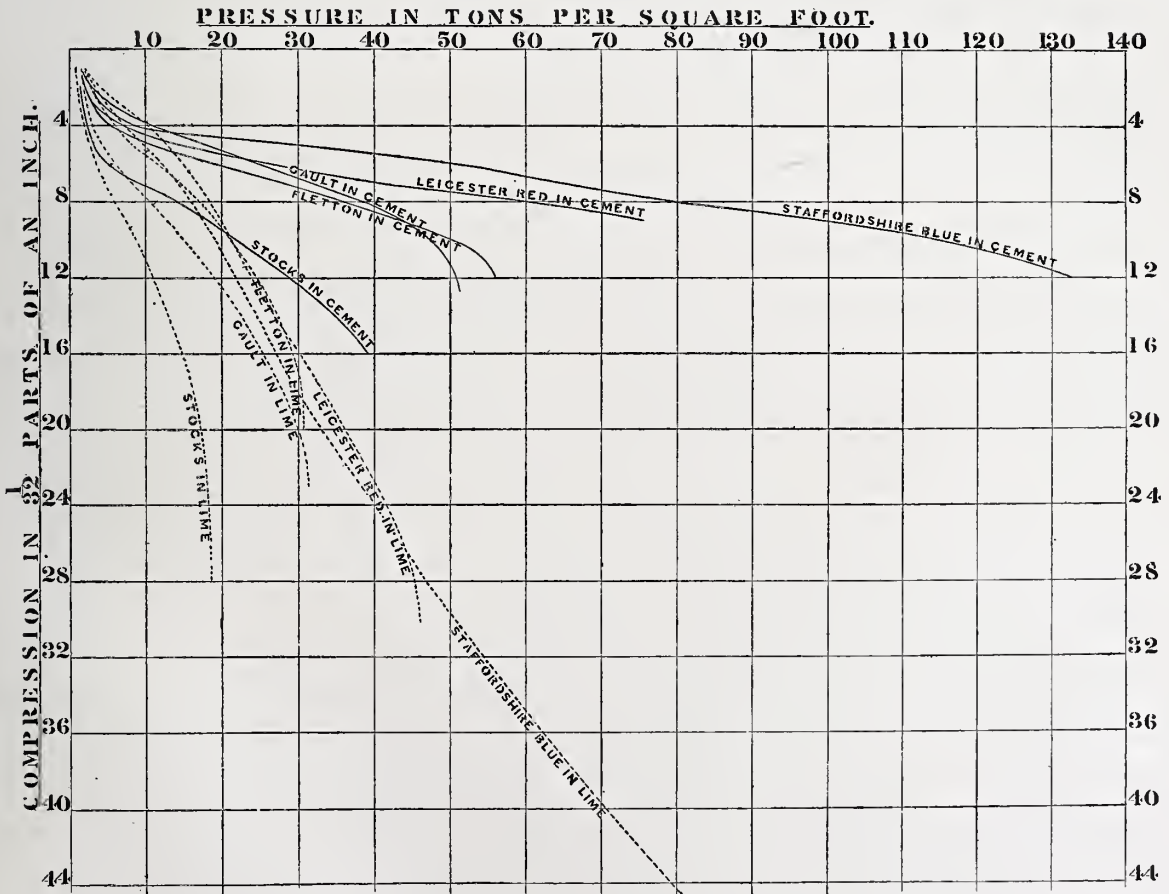
Wall 6' 0 $\frac{3}{4}$ " high; 27" × 18"; sectional area 3.375 sq. ft.Built 13th November; crushed 7th April. Age 20 $\frac{1}{2}$ weeks.

Time	Pressure on gauge. Pounds per square inch	Total real pressure in tons	Pressure per square foot of wall in tons	Compression in inches	Notes
2.36	15	4.26	1.26	—	In bearing.
2.37 $\frac{1}{2}$	18	5.65	1.67	$\frac{1}{32}$	
2.42 $\frac{1}{2}$	25	8.90	2.64	$\frac{1}{32}$	
2.46 $\frac{1}{2}$	38	14.93	4.42	$\frac{1}{32}$	
2.52	80	34.42	10.20	$\frac{1}{32}$	
2.53 $\frac{1}{2}$	133	59.01	17.49	$\frac{1}{32}$	
2.59	168	75.25	22.30	$\frac{1}{32}$	
3.10	215	97.06	28.76	$\frac{1}{32}$	
3.17	310	141.14	41.82	$\frac{1}{32}$	
3.19	365	166.66	49.38	$\frac{10}{32}$	
3.21	400	182.90	54.19	—	E. face, hair crack in courses 1 and 2, 1" from S. end.
					S. end, crack in centre of courses 1 to 7.
3.22	420	192.18	56.94	$\frac{11}{32}$	S. end, crack in centre of courses 1 to 7 extended to course 8.
					E. face, hair crack in courses 1 to 4, 2" from S. end.
3.24	425	194.50	57.63	$\frac{12}{32}$	S. end, crack extended from course 1 to 9.
					S. end, crack in course 18.
					S. end, crack in courses 5 to 7, 4" from E. face.
3.40	—	—	—	—	The pressure gauge from this point kept falling till 360, when the wall failed by shearing.
					The N. end remaining intact from course 8 to 24, except a split at centre from top to bottom, open $\frac{1}{4}$ ".

CRUSHING LOADS IN TONS PER SQUARE FOOT.

	Stocks	Gault	Fletton	Leicester Red	Staffordshire Blue
Bricks crushed at	average 84.27	average 189.20	average 220.85	average 362.10	average 779.60
Brickwork in lime ditto	No. 34. 17.44	No. 36. 31.34	No. 42. 30.82	No. 38. 45.94	No. 40. 118.12
Ditto ditto	35. 19.83 — 18.63	37. 30.94 — 31.14	43. 30.54 — 30.68	39. 44.78 — 45.36	41. 110.56 — 114.34
Ditto in cement ditto	No. 44. 39.24	No. 46. 51.50	No. 52. 54.88	No. 48. 80.94	No. 50. 139.52
Ditto ditto	45. 39.34 — 39.29	47. 51.19 — 51.34	53. 57.63 — 56.25	49. 85.78 — 83.36	51. 131.35 — 135.43

DIAGRAM SHOWING COMPRESSION OF WALLS AT INCREASING PRESSURES.



APPENDICES.

By PROFESSOR UNWIN [*H.A.*], F.R.S.

DETERMINATION OF LOADS CORRESPONDING TO OBSERVED GAUGE PRESSURES FOR THE LARGE HYDRAULIC PRESS AT THE WEST INDIA DOCKS.

In the third series of tests the press was again tested in the same way as in the two previous series, by crushing copper cylinders. Two cylinders were crushed, but on examination of the compressions I have come to the conclusion that the measured compressions of the second cylinder are untrustworthy. I think there must have been a little bending of the iron packing piece against the head of the framework, to which the compressions were measured. Discarding the tests of the second cylinder, the relation of load and pressure gauge, pressure is almost identical with that found previously.

Comparison of Gauge Pressures, Calculated Loads neglecting Friction, and True Effective Loads of Ram.

Observed gauge pressure	Calculated load on ram neglecting friction	Effective load from compression of copper cylinder	Load calculated by formula	Friction of ram
lbs. per square inch	Tons	Tons	Tons	Tons
50	25·22	20·5	20·5	4·72
100	50·44	43·7	43·7	6·74

The equation connecting the effective load on the ram in tons P, and the pressure gauge pressure in lbs. per sq. in., p, is—

$$P = 0·464p - 2·7 \dots \dots (1)$$

It appears that the pressure gauge used was not quite accurate. This does not affect the calculation of the effective load from the compression of the copper cylinders by equation (1). But it does affect the ram friction stated in the table above. The pressure gauge error may explain the apparent variation of the ram friction, or at least part of that variation.

TESTS OF CEMENT AND SAND COMPRESSION CUBES AND TENSION BRIQUETTES.

No.	Description	Date of making	Date of testing	Age in weeks	Dimensions	Area crushed	Crushing	
							Load	Stress
13	1 of Portland cement + 4 of Special sand by <i>volume</i>	13-11-96	10-12-96	4	3" cube	sq. ft.	5·520	88·32
15		" " "	11-2-97	13	"	"	4·885	78·16
16	1 of Portland cement + 4 of Standard sand by <i>volume</i>	" " "	10-12-96	4	"	"	2·800	44·81
17		" " "	" " "	4	"	"	3·410	54·56
18		" " "	11-2-97	13	"	"	3·320	53·12

The Special sand was not the same as that used in previous tests. Both it and the cement were samples of the cement and sand used for the third series of piers.

No.	Description	Date of making	Date of testing	Age in weeks	Dimensions	Tenacity
a	Same mixing as Nos. 16 to 18 above	13-11-96	14-12-96	4	1 sq. in. cross section	sq. in.
b		" " "	" " "	4		114 lbs.
c		" " "	11-2-97	13		183 "
d		" " "	" " "	13		174 "

* * * The discussion on the foregoing Reports will appear in the issue of 8th January 1898.



9, CONDUIT STREET, LONDON, W., 18th December 1897.

CHRONICLE.

The Festival Dinner.

The Festival Dinner in commemoration of the sixtieth anniversary of Her Majesty's accession and of the incorporation of the Royal Institute was held at the Whitehall Rooms on Thursday, the 2nd inst. The company, numbering 155, included several distinguished guests and prominent members of the Institute.

On his presentation to the President in the reception room, Monsieur Poupinel, one of the secretaries of the Société Centrale of Paris, presented a telegram of congratulation from the Society, the terms of which will be found in the report of the President's reply to the toast of "The Royal Institute of British Architects and the Allied Societies."

Before the meal grace was said by the Right Rev. the Lord Bishop of London, and after the meal the *Deum Laudate* (Dr. J. Smith) was sung by Mr. F. Bevan's quartette, who, together with Mrs. Kate Lee, contributed songs during the evening. Owing to the conciseness of the speeches and the promptness of an excellent toast-master, Mr. Farrant, practically the whole programme of toasts and music was got through. The arrangements of the dinner were satisfactory, and, as far as can be judged by very general expression of opinion, the Festival was a success.

The following is a list, in alphabetical order, of the members and guests present on the occasion:—

Professor Aitchison, A.R.A., *President*; Mr. F. W. Albury [F.]; Mr. J. Macvicar Anderson [F.], F.R.S.E., *Past President*; Mr. C. B. Arding [A.]; Mr. W. Wallis Baldwin; Mr. T. Barnes Williams [F.]; Mr. Charles E. Barry [A.]; Sir J. Wolfe Barry, K.C.B. [H.A.], *President* of the Institution of Civil Engineers; Rev. W. Bazeley; Mr. R. M. Beachcroft, *Vice-Chairman* of the London County Council; Mr. George Benson, *President* of the York Society; Mr. Thomas Blashill [F.]; Mr. Edward Boardman [F.]; Mr. W. R. Bousfield, Q.C., M.P.; Mr. Boyce; Mr. C. W. Brooks [A.]; Mr. James Brooks [F.], *Royal Gold Medallist*; Mr. H. Brown; Mr. J. M. Brydon [F.]; Mr. William J. Bull; Mr. J. J. Burnet [F.], A.R.S.A., *President* of the Glasgow Institute of Architects; Hon. Willoughby Burrell; Mr. W. D. Caröe [F.], M.A., F.S.A.;

Sir George Hayter Chubb; Mr. T. E. Collcutt; the Rev. Canon Clayton; Mr. J. Collings; Mr. H. H. Collins [F.]; Dr. W. J. Collings, *Chairman* of the London County Council; Professor Corfield [H.A.], M.D.; Mr. George Corson, *President* of the Leeds and Yorkshire Society; Mr. J. D. Crace [H.A.]; Mr. H. O. Cresswell [F.]; Mr. G. R. Crickmay [F.]; Mr. A. G. Cross; Mr. A. W. S. Cross [F.]; Mr. Percivall Currey [F.]; Mr. Thomas W. Cutler [F.]; Mr. T. Raffles Davison [H.A.]; Mr. Arthur Dixon; Capt. Donaldson, R.A.; Mr. John Dunn [F.]; Mr. William Emerson, *Hon. Secretary*; Mr. Robert Evans [F.]; Mr. Robert Evans, jun.; Mr. W. M. Fawcett [F.], M.A., F.S.A., *Vice-President*; Mr. H. L. Florence [F.], *Vice-President*; Mr. Charles Fowler [F.]; Mr. George Frampton, A.R.A.; Mr. Ernest George [F.], *Vice-President, Royal Gold Medallist*; Dr. Gervis; Mr. Alfred Gilbert [H.A.], R.A.; Mr. William Godden, *President* of the Incorporated Law Society; Mr. William Goldring; Mr. Alexander Graham [F.], *Past Vice-President*, F.S.A.; Mr. G. E. Grayson [F.]; Mr. E. A. Gruning [F.], *Vice-President*; Mr. Albert L. Guy [A.]; Mr. W. W. Gwyther [F.]; Mr. Axel H. Haig; Mr. Edwin T. Hall [F.]; Mr. F. H. A. Harcastle [A.]; Mr. Thomas Hardy; Mr. W. H. Harrison [F.]; Mr. James Hine [F.], *President* of the Devon and Exeter Society; Mr. George Hornblower [A.]; Sir Henry Howorth, K.C.I.E., M.P.; Mr. F. C. Hunt; Mr. E. B. L'Anson [F.]; Mr. Benjamin Ingelow [F.]; Mr. Lewis H. Isaacs [F.]; Mr. H. O. Jenkyn; Mr. George Judge [F.]; Mr. Zeph. King [F.]; Sir Stuart Knill, Bart.; Mr. G. F. Lambert; Mr. F. Layland-Barratt, *High Sheriff* of Cornwall; Sir James D. Linton [H.A.], P.R.I.; the Right Rev. the Lord Bishop of London; the Right Hon. the Lord Mayor of London; Mr. W. Ellison Macartney; Sir William MacCormack, *President* of the Royal College of Surgeons; Mr. E. H. Martineau [F.]; Mr. H. E. Milner [H.A.], F.L.S.; Mr. James A. Morris [F.]; Mr. Andrew Moseley [F.]; Captain Moseley; Mr. E. W. Mountford [F.]; Herr H. Muthesius, *Architect* to the German Embassy in London; Mr. James Neale [F.]; Mr. John Norton [F.]; Mr. Christopher Oakley, *President* of the Surveyors' Institution; Mr. A. E. Lloyd Oswell [F.]; Mr. H. A. Pelly [A.]; Mr. F. C. Penrose [F.], F.R.S., *Past President, Royal Gold Medallist*; Mr. H. R. Perry [A.]; Mr. Horatio Porter [A.]; Monsieur J. M. Poupinel, *Secretary* of the Société Centrale des Architectes Français; Sir Edward J. Poynter, P.R.A.; Mr. Hampden W. Pratt [F.], *President* of the Architectural Association (London); Sir W. B. Richmond [H.A.], R.A.; Sir G. Scott Robertson, K.C.S.I.; Mr. Marshall Robinson [A.]; Mr. T. R. Ronald; Mr. E. O. Sachs; Mr. W. H. Seth-Smith [F.]; Mr. George Sherrin [A.]; Mr. John Slater [F.], B.A.; Mr. H. B. Smith; Mr. Hugh C. Smith, *Governor* of the Bank of England; Mr. J. Osborne Smith [F.]; Mr. P. Gordon Smith [F.]; Mr. A. Saxon Snell [F.]; Mr. H. Saxon Snell [F.]; Mr. Lewis Solomon [F.]; Mr. Henry Spalding [F.]; Mr. N. J. Stanger [A.]; Mr. H. Heathcote Statham [F.]; Mr. R. S. Stokes; Mr. William Strang; Mr. W. H. Strudwick; Mr. A. W. Tanner [A.]; Mr. Henry Tanner [F.]; Sir John Taylor [F.], K.C.B.; Mr. Lewis W. Thomas; Sir E. Maunde Thompson, K.C.B., D.C.L., *Principal Librarian* of the British Museum; Mr. Arnold Thorne [F.]; Mr. W. H. Thorp [F.]; Mr. Silvanus Trevail [F.]; Colonel Waller, R.E.; Mr. Frederick Wallen [A.]; Mr. Paul Waterhouse [F.], M.A.; Mr. T. H. Watson [F.]; Mr. Aston Webb [F.], F.S.A., *Past Vice-President*; Mr. William White [F.], F.S.A.; Mr. Alfred Williams [F.]; Mr. W. E. Willink [A.], *President* of the Liverpool Society; Mr. W. S. Witherington [F.]; Sir Henry Truman Wood, *Secretary* of the Society of Arts; Mr. H. A. Woodington [A.]; Mr. William Woodward [A.]; Mr. Charles H. Worley [F.]; Mr. R. Selden Wornum [F.]; Sir George Young, Bart.; Mr. W. J. Locke, *Secretary*, and other members of the Institute staff and representatives of the press.

The PRESIDENT, PROFESSOR AITCHISON, A.R.A., in giving the toast of "The Queen," observed that nothing he could say would increase the love and reverence they all felt for the head of the Empire. It was owing to Her Majesty's judgment and sagacity that the country was now enjoying peace and plenty, and that every channel of the State was almost choked with golden sand. They had to thank her for the benevolent interest she took in every member of her mighty empire, and that above all she had by her example made virtue fashionable; for it was by virtue alone that empires flourished and continued. The Institute of British Architects was particularly grateful to the Queen for having given into their hands the choice of a worthy recipient of the Gold Medal Her Majesty was graciously pleased to bestow annually on the great architect of the day, to whatsoever country he belonged, and had thus bound up the Institute with the architectural glory of every other civilised nation.

In proposing the next toast, "The Prince and Princess of Wales and the rest of the Royal Family," the President said that with such a mother to imitate they could not be surprised that His Royal Highness and his consort, and the other members of the Royal Family, had won the heart of everybody, as they had always been in the forefront of every proposal for the good of the people and the embellishment of the country. They were ever found ready to sacrifice their time and lend their aid to further every benevolent, useful, or patriotic scheme, from the maintenance of hospitals to the dedication of the Tate Gallery to the nation.*

MR. J. MACVICAR ANDERSON, F.R.S.E., *Past President*, proposed "The Houses of Lords and Commons," and in doing so said he would refer to the Houses of Parliament as ancient edifices; and as ancient edifices those buildings called forth their reverence and their affection. Unfortunately, there were those who had no sympathy with the light and shade that time alone could impart, and which gave the greatest charm to such edifices. Referring to the House of Lords, he said that only the previous day he had heard of a dear old tower, attached to a church in Cornwall, which was threatened with destruction. There were those who had no appreciation for ancient work. One Goth had subscribed 1,000*l.* on condition that the tower should be removed and a modern one put in its place; other sums had been given on similar conditions; and, worst of all, the vicar or rector of the parish—he who of all others should be expected to preserve such an ancient landmark—aided and abetted them. If the tower were removed, its place would be taken by some lofty Babel tower, a monument alike of the conceit and

ignorance of its promoters. Such vandalism, he hoped, would be prevented. There was a well-known law in architecture as to obtaining a due and just proportion of window and wall space in an edifice, and he thought that even the most ardent admirers of the House of Commons must admit that the oratorical voids in that assembly have assumed an enormous disproportion to the wall spaces of useful work; but notwithstanding these and other influences of time, they must all hope that these ancient edifices would withstand the ravages of future centuries. With the toast he coupled the names of the Bishop of London and Mr. W. G. E. Macartney, M.P.

THE RIGHT REV. THE LORD BISHOP OF LONDON, in the course of his reply for the House of Lords, said it was pleasing to think that a society of architects had resolved itself into a society for the protection of ancient buildings. He then briefly and humorously referred to some of the advantages of a second Chamber, and concluded by saying that so long as the House of Lords rendered advice in measures inaugurated by the House of Commons—so long as it did that, with the gravity and wisdom, consideration and attention to business, which characterised its proceedings, it deserved and received the approbation of the country.

MR. MACARTNEY, in responding for the House of Commons, said that that body occupied one of the lasting monuments of the genius of British architecture, and he trusted that in the future, as in the past, those who had the privilege of conducting the affairs of the nation in that magnificent palace would be inspired by the great traditions which no doubt occupied the attention of the Institute of British Architects, and which ought always to influence the representatives of the nation.

MR. ASTON WEBB, F.S.A., *Past Vice-President*, then proposed "The Lord Mayor and Municipal Corporations." As architects they welcomed the Lord Mayor because he and the Corporation held a power over matters which very much interested architects. With the Corporation lay the power to realise to a great extent the ideal cities which architects naturally had in their minds—cities with broad streets bright and clean, with trees and parks and open spaces; cities well drained, supplied with wholesome and pure water; cities with happy populations as far as laws could make them so; and cities (and here as architects they were specially concerned) which possessed buildings of a municipal character which added distinction to the city or town in which they were placed—buildings in which painting and sculpture had combined with architecture in making them all that art could make them—buildings which strangers would come from far to see, and which should represent, as much as art could, the beauty and dignity of city life. It was work of this kind that Lord Mayors and Municipal Corporations had in hand.

* For the report of the speeches which follow, the Institute is indebted to the excellent report of the Dinner, given in *The Builder* of the 11th inst.

The LORD MAYOR, in the course of his response, said that the Royal Institute of British Architects was commemorating the sixtieth anniversary of Her Majesty's accession and of the incorporation of the Institute, and that afternoon they had been celebrating in the City the anniversary of one of the grandest old buildings in London—viz., the two hundredth anniversary of the opening of St. Paul's Cathedral—a building which was, perhaps, the greatest monument to any man who ever followed the profession of an architect. By their character, past Lord Mayors had built up the Corporation of the City of London, and was there any reason why they should be swallowed up by the County Council? They were an old-established Corporation, and they would be glad to see the County Council become a similar institution, but that could only be accomplished in the course of time; and, in the interval, the Council would be better occupied with the business of the County of London rather than in attempting to destroy the old City of London. As a consequence of the great fire in the City, it was equally important to the City as to the great profession to which they belonged, that something should be done in order that such a catastrophe might not occur in future. He hoped that the Corporation would shortly be able to make some suggestions in regard to the matter, and if any members of the architectural profession could give him any hints on the subject he should be happy to lay them before the Corporation.

The PRESIDENT proposed the toast of "Art, Literature, and Science." He gave Art first for many reasons; but it was only necessary to name two, viz., that it was the first of the fine arts that appealed to man before Literature or Science existed; and, secondly, because it was that form of beauty that nature offered freely to the eyes of every one who was not blind, and she offered this for man's solace, purification, and delight. All writing, from the Egyptian hieroglyphics to the Chinese, was shorthand from pictures. We saw in the painted bas-reliefs of Egypt and Assyria that history, that catalogue of great national events, was given by a series of pictures. Everything that nature offered to our eyes was sculptured and painted, and these coloured forms produced for us the beautiful, the lovely, the sublime, and the terrible; so that, by the various emotions they raised, our souls might not perish through stagnation. In all civilised countries whole classes of gifted men devoted themselves to the portrayal of these evanescent scenes of beauty, sublimity, or terror; and they did more when man was the subject chosen for their chisel or their brush, for they not only portrayed his form and action, and gave us ideals of beauty, of swiftness, or of strength, and of those forms that denoted the possession of courage, wisdom, benevolence, or malignity, but re-created for us the stirring scenes of the past. Among these

artists the architect was enrolled, though he was like the chariot drawn by the divine and earthly steeds, and had to combine the useful with the sublime. In this he was assisted by the sculptor and the painter. They had that night with them the President of the Royal Academy, who took the visual fine arts under his wing. Though Literature was a later creation than Art, it had thrust itself to the forefront, for it had time and thought in its hands, and had associated music and melody with itself. No fine art could invade another's domain, for, could one die out, all the rest would not supply its place; a beauty might have her form immortalised by the sculptor, but the painter alone could give her colour. The useful prose had borrowed some of the adornments of her elder sister, poetry, and gave melody and rhythm and eloquence, while in the depiction of conflicting emotions it rivalled poetry itself; still it was to our poets we must look for immortality, for in poetry was concentrated the pith of thought crystallised and polished. He knew not if we could claim equality with the past, in the masterpieces of the visual fine arts, but we might do so with the poetry. Our poets, too, have given "Jewels five words long, that on the stretched forefinger of old Time sparkled for ever." They had with them that night the keeper of all the best poetry and prose that had come down to them since literature was invented, Sir E. Maunde Thompson, of the British Museum. Lastly, he came to Science, or rather to those who had turned the discovered laws of nature into man's obedient servants; and in that respect Great Britain was better off than with poetry. They did not know that all the world estimated Shakespeare, Milton, Burns, Shelley, and Tennyson as we did, but it would hardly deny them the discoveries of Watt, of G. Stephenson, of Arkwright, and of Wheatstone. He did not want to be insular, and it would ill become them to forget Edison, who had given them the electric light. The chemist, the mechanician, and the engineer had revolutionised the world for them. Puck's boast that he could "put a girdle round about the world in forty minutes" had been outdone by the telegraph; and did not the engineers "rift the hills and roll the waters, flash the lightnings, weigh the sun"? He thought he might safely say that from the scientific discoveries of the last hundred and fifty years mankind were better fed, clothed, and housed than they ever were before, and that they were more numerous, more healthy, and longer lived. If life be happiness, the sum of happiness had been vastly increased. They had with them as a representative of science a distinguished engineer, Sir J. Wolfe Barry, whose Tower Bridge they all knew.

SIR E. J. POYNTER, P.R.A., replying for Art, said it was a large subject, and he did not feel equal

to giving that elaborate disquisition on the subject which the President seemed to expect from him, especially as he would have to deliver shortly an address on the subject in another place. Nor would he indulge in commonplaces and platitudes on the advantages of art as an education. He would rather turn to the alliance of the arts of painting and architecture as exemplified in the old friendship between their President and himself, which began when he was a boy in Rome, and was strengthened and cemented by the admiration which they held in common for their late President, Lord Leighton, who was at that time a youth of twenty-three, and full of his first enthusiasm in that passionate devotion to art which was the object of his life. Their President had extended his friendship and kindness to him all through his (the speaker's) life, and he could not say how much he had profited and how much he owed to him. Their President had always entertained exalted views as to the dignity of art, and he had never failed to express them. In the name of the painters and sculptors, he thanked the Institute for the high compliment they had paid them.

SIR E. MAUNDE THOMPSON, K.C.B., responded for Literature. He said he had more acquaintance with the outside than with the inside of books, and he could almost weep when he paced down their long corridors at the British Museum and saw the charnel-house of literature all lying on their shelves, and no one referring to them. His only consolation was that the paper upon which they were printed was so abominably bad that final dissolution must come and save posterity from a monstrous amount of literature. But there was yet another consolation. Although there was this great mass of literature pouring into the world in the present day, we were not bound to read it. He was at the head of a great institution, which was not only a library but a repository of art, and he wished to express his thanks to the President for the many kindnesses they had received at the Museum from him whenever there was any question of arrangement in their collection of antiquities.

SIR J. WOLFE BARRY, K.C.B. [*H.A.*], in responding for Science, said that as the son of an architect who must have been one of the original members of their Institute, and a President; as the brother of one of their past Presidents, and brother of one of their past Vice-Presidents, it gave him much pleasure to be present that evening, and to be called upon, as President of the sister Society, the Institution of Civil Engineers, to reply for Science. The particular branch of science with which he and they were connected was applied science, and that science had been well described as the handmaid of art. It was a servant, useful, sturdy, and trustworthy, but like such servants in ordinary domestic life (who

possessed those qualities) it was not to be trifled with. The science they had to deal with in their profession had its sanitary branch, which was of great importance to the health of the world, as statistics of the duration of life showed; and another branch of the application of science was that known by the word "constructional," which involved making the most of those new discoveries in various kinds of materials and various means of executing buildings, which, of course, appealed to architects who had to deal with new problems of a very different kind from those which were dealt with by the ancients, from whom architects obtained their great principles of art. As time went on, the newer developments of science in the way of construction would have more and more to take their proper place in the art of architecture. Another application of science which called for great attention in this great City, was that which had been alluded to by the Lord Mayor, namely, in trying to make large blocks of buildings less susceptible to the ravages of fire than was the case at the present moment. A few days ago he visited the scene of the great City fire, and one could not help being struck with the fact that there must be something very faulty with the construction of modern buildings that they should fall down and be destroyed in a few hours from a fire which, he supposed, if it had been attacked in the first half-hour, would, under proper modes of construction, have had no great danger to any surrounding houses. He thought he was right in saying, therefore, that architecture had much to learn from science, and that science had something to learn from art. He could not see why things which were useful and served a distinctly utilitarian purpose should necessarily be ugly. He thought that engineers might with very great advantage study some of those great principles of beauty with which architects were more particularly concerned. He recollected that his father used to impress upon him that the great principle of a well-designed and beautiful structure was great attention to proportion. He thought that engineers in the present day might very well consider whether some of our bridges, stations, and other structures might not be a little more beautiful than they are.

DR. COLLINS, Chairman of the London County Council, then gave the last toast, viz., "The Royal Institute of British Architects and Allied Societies." He cordially reciprocated the sentiments of the Lord Mayor in saying how close should be the association of municipal enterprise and architecture. Before the year 1834 architecture had no learned Association or Royal Society to represent it. The Charter of the Institute was granted in 1837, and they were celebrating that night their sixtieth anniversary. No doubt great progress had been made since

1837, and the Institute had had as members those whose names would long survive. The speaker then referred to the close contact of architects with the London County Council, referring to the London Building Act of 1894 with its 218 clauses, and the Tribunal of Appeal which was instituted by that Act. The London County Council recently required the assistance of an architectural critic upon the work of the Works Department, and a gentleman of ability had been found in the person of Mr. Gruning. He would also take that opportunity of saying how much London owed to Mr. Blashill, the Superintending Architect of the Council. In that connection he might refer to the careful supervision, under the direction of Mr. Blashill and the District Surveyors, of the stands, &c., which were erected for the sightseers at the time of the Queen's Jubilee. Alarming prophecies of catastrophe had been made in connection with that event. The County Council had a keen regard for the preservation of buildings of historic interest and architectural value. At a recent conference, to which the Institute sent representatives, they considered how best to preserve such buildings, the existence of which they learned only when they were threatened with destruction. It was suggested that they should make a register of historic buildings, and they were now seeking powers to that end. He must congratulate the Institute upon the high repute in which it was held. It was, he believed, the only recognised architectural body which was incorporated under Royal Charter, and he was glad to know that there were some five Presidents of the Allied Societies with them that evening. They must all think, as they walked through the principal streets, that, after all, there was a vast amount of ugliness and prosaic quality about our public buildings, and, no doubt, they sometimes asked how it was that with such an array of architectural talent things were not better than they are. The Institute was an examining body, and the teaching of architecture was the province of the Architectural Association, the Royal Academy, the National Art Training School, and one or two other institutions; but it was a matter of agreement, he thought, that architecture was not at the present time taught in London in a manner worthy of the city. He had often wondered why architecture had not received that recognition in our Universities which it ought to have done. They heard so much of the humanities; but, after all, were not literature and architecture humanities; the exquisite in form, that which was implicit in thought? Architecture, as a German philosopher had described it, was frozen music—harmony crystallised into form; and he (the speaker) thought it should find some place in our University examinations. He was not sure whether it was too much to dream of a Municipal School of Architecture in London, and he would

be glad to use any influence he might possess with the University of London to adopt such a measure.

The PRESIDENT, in reply, said that of all the fine arts practised in London there was none that was less thought of than architecture. He would ask them to consider architecture in two of its phases, its obtrusiveness and its permanence. Painting and sculpture might be put into a room or cupboard, but architecture met people everywhere, and surely that was a reason why a city should be made beautiful and not ugly. Then in regard to the enduring character of architecture, although it was true that large and important buildings might be destroyed by invaders, by natural convulsions, or by neglect, yet if these two former did not occur and care were taken they lasted for centuries. In spite of the lapse of time, of fire and earthquake, they had still the remains of the Parthenon at Athens—a building which caused the perennial admiration of those who were sufficiently educated to understand its beauty. Then there were the remains of architectural splendours of Rome and elsewhere; but in his opinion insufficient notice was taken of the claims which architecture made on the admiration and gratitude of mankind. Architecture taught many lessons and excited many emotions that could be raised by it alone. No one who had visited the interior of the Pantheon at Rome could have forgotten the impression of its proportions, size, and lighting. It was the work of a great genius whose name had been lost, and it affected thousands, and had done so from its creation. It was consequently a matter for the consideration of the architect to see if his genius and his study would enable him to produce something equal, though not like, such a building as the Pantheon. He thought it was the duty of every patriot in the country to endeavour to make the city he inhabited beautiful. It must be remembered that the great works of architecture that he had referred to must be visited, for they could not be exported for the benefit of people in other lands. The Institute had done what it could to improve the education and to raise the aims of the young architect. He wished that more could be done, but the difficulty was to know how to do more. Every man who embraced the profession should endeavour to make himself as capable as possible, and should regard architecture not as a mere means of making a livelihood, but something by which his country might be distinguished. He might say that the excellence and progression of their great profession are more dear to him than anything that could happen to himself. They must recollect that Aristotle considered architecture as one of the master arts of the world. In regard to the street architecture of London, M. Paul Sedille expressed, in a book he wrote about the architecture of England, the opinion that its domestic works were

admirable. He hoped and believed that genius would spring up to make the larger and more important buildings equal to those of any other country. The greatest hope and desire he had was that the next century should produce works of architecture in England which would vie with the great works of Greece, Rome, the Middle Ages, and the Renaissance. He thought it was because architecture had got into the wrong groove that they did not succeed in producing work of the greatest excellence, and until that were remedied we should never proceed very far. The only people about whose progress in architecture we knew anything were the mediævals, and he could not help thinking, although he was opposed to imitation, that nothing could be better than the methods those people followed, and that if we tried to follow their methods architecture would again proceed on its way. They had with them that night two gentlemen from abroad, viz., Herr H. Muthesius, who had come to this country to study our architecture, and one of the secretaries of the Société Centrale of Paris, Monsieur J. M. Poupinel, who had just handed him a telegram which he had received from his Society to the following effect:—"We pray you to present our most sincere and most cordial felicitations to the Royal Institute of British Architects on its sixtieth anniversary." The telegram was signed by the Vice-Presidents, MM. Hermant and Lucas, and the Principal Secretary, M. Boileau. No doubt they would desire to send their sincere thanks to the Society for the great interest they had taken in the Institute and for their congratulations.

The proceedings then terminated.

The Belgian Society and the Institute.

The following letter of congratulation, addressed to the President and Members of the Institute from the Société Centrale d'Architecture de Belgique, is here printed by order of Council:—

Bruxelles, le 6 décembre 1897.

MESSIEURS, La Société Centrale d'Architecture de Belgique me charge de vous présenter ses félicitations bien sincères à l'occasion du soixantième anniversaire de votre illustre Société.

Elle vous prie d'agréer, Monsieur, l'expression de ses meilleurs sentiments de confraternité.

Le Président,
V. DUMORTIER.

The late Octavius Hansard [F.].

Mr. Octavius Hansard, whose tragic death at Portland Road Station came as a great shock to all, had been a Fellow of the Institute since 1860, and for very many years was a member of Council. Born in 1826, he was the eighth son of Mr. Luke Graves Hansard, printer to the House of Commons. He studied architecture at the Royal Academy Schools, then in Trafalgar Square,

having as a fellow-pupil the late Lord Leighton, with whom he always maintained friendly relations. He began the new buildings for Messrs. Marshall & Snelgrove in Oxford Street in conjunction with the late Sir Horace Jones, and on the death of Sir Horace completed them alone. Mr. Hansard was only married so recently as the 9th November last to Miss Ruth Fenton. He was a younger brother of the late Rev. Septimus Hansard, rector of Bethnal Green, in whose parish he always took a great interest. He was buried in Brompton Cemetery on Thursday, the 9th inst. The President, the Hon. Secretary, Mr. Alex. Graham, and the Secretary attended on behalf of the Institute, and many members were present at the grave. Feeling allusion was made to the deceased by the President at last Monday's Meeting.

The late John Loughborough Pearson [F.], R.A.

The death of Mr. J. L. Pearson was announced by the President at the last General Meeting in the following terms:—"I have also, unfortunately, to announce the death of our distinguished Fellow and Gold Medallist Mr. J. L. Pearson, R.A. He died on Saturday morning last, after a short illness, at the age of 81, just on the verge of old age, and at work almost to the last. All of us who have known him—and I do not think there are many here who have known him longer than I, for I made his acquaintance in 1855—must have felt that he was a fine specimen of the English gentleman. Many must have known his kindness of heart, his amiability of temper, his courage, his vigour of mind and uprightness, those qualities that so distinguish the finest samples of our race. But I must not let the enumeration of his noble qualities divert us from paying our due tribute to his distinction as an architect, and to the great works that he has done. I think I may say without fear of contradiction that he was the most distinguished of our ecclesiastical architects. His works are spread all over our country, and we know many of his works in London that have brought him into fame. When I first had the pleasure of knowing him in 1855, through the introduction of Mr. Burges, he had just built the church at Vauxhall, which I believe contained the first brick vaulting on stone ribs that had in modern days been done in England. I think I may say that we all admire those great works that he has done. Many of us have seen his restorations at Lincoln, at Peterborough, and at the Abbey, and some of us have had the good fortune of seeing his cathedral at Truro. A gentleman of the Roman Catholic persuasion said a few years ago 'that of all the modern English cathedrals the only one that was fit for a Roman Catholic cathedral was Truro.' He was always ready to give his advice to any of his professional brethren, young or old, who desired to take advantage of

his knowledge and large experience. It will be unnecessary for me to enlarge, for everybody who knew Mr. Pearson must have loved him; and all those who did not know him, but have seen his works, must have admired his genius and the great quantity of work which he produced. I beg you all to join me in a vote of condolence to his family for their irreparable loss. His death is almost as great a loss to us as to his art and to the world."

Exigencies of time will not permit more than a reference to the funeral of the late Mr. Pearson, which took place on the 16th inst. at Westminster Abbey. The Institute was represented in the procession at the Abbey by a deputation from the Council, and many members were present at the service.

A Graceful Compliment from Stockholm.

An architectural work of folio size, illustrated by numerous clever and expressive sketches of detail, has just been presented to the Institute, through Mr. A. H. Haig, by the artist, Mr. Agi Lindegren, to whom the book itself owes so much; and it is presented in so noble a form, and with such an exceptionally artistic dedication, that the donor could not have given a more generous or sincere evidence of his desire to pay a high compliment to his brother architects in England.

Not only is the volume beautifully bound in full red morocco, finely tooled and gilt, having a device of the royal arms of Sweden on the side, but the dedicatory page is enriched by a fine rendering of the device of the Institute, illuminated in colours with admirable artistic spirit and with great refinement of detail. It is surely seldom that a handsome contribution is made to our Library with so charming a grace; and every member of the Institute who examines the work itself will not fail to be grateful for so delightful an expression of compliment and goodwill. The book is a description of the Palace of Drottningholm, the Swedish Versailles, with some account of its history, by Dr. John Böttiger, the actual title being as follows:—

"Hedvig Eleonoras Drottningholm Anteckningar till Slottets Äldre Byggnadshistoria af Dr. John Böttiger, Intendent för H.M. Konungens Konstsamlingar, ny upplaga illustrerad af Agi Lindegren, Slottsarkitekt ä Drottningholm.—Tryckt i Stockholm hos P. Palmquists Aktiebolag, 1897."

The Palace of Drottningholm (Queen's Island), it may be added, is on a beautiful island of the Lake Mälaren, and distant but seven or eight miles from Stockholm. The foundation of the existing building was laid by Hedvig Eleonora, widow of Charles X., towards the end of the seventeenth century; and the building has been handsomely fitted internally by succeeding sove-

reigns. The gardens are finely laid out in the old French manner, and ornamented by sculpture both in marble and bronze. J. D. CRACE.

Miscellaneous.

DEATH has deprived the Institute of five members since the last issue of the JOURNAL. Their names were announced at the General Meeting of Monday, the 13th inst., and will be found in the Minutes of the Meeting.

THE length of space occupied by the Brickwork Papers compels postponement of publication of the discussion thereon until the next issue. The speakers included, besides those mentioned in the Minutes, Mr. P. Gordon Smith, Mr. H. Heathcote Statham, Mr. William White, F.S.A., Mr. Bruce J. Capell, and the President.

Mr. Alfred Waterhouse [F.], R.A., LL.D., has been appointed Treasurer of the Royal Academy, vice Mr. J. C. Horsley, R.A., resigned.

IT may interest readers of the JOURNAL to know that Colonel Lenox Prendergast's review of "The Castle of Vincigliata" (JOURNAL, Vol. IV., p. 440) has been translated into Italian, and published in Florence in pamphlet form.

A CIRCULAR letter is being issued from the Council to Metropolitan architects on the lines of Mr. Woodward's proposals [p. 64] with reference to the London County Council's proposed amendments to the London Building Act.

THE publication is announced of *An Architect's Experiences, Professional, Artistic, and Theatrical*, by Mr. Alfred Darbyshire [F.]. [Manchester: J. E. Cornish.]

AT the distribution of prizes at the Royal Academy, on the 10th inst., two *Students R.I.B.A.* were among the successful competitors, viz. John Stevens Lee, who won the £10 premium (Lower School) for a set of drawings of an architectural design (subject, a Lych Gate), and Arthur Maryon Watson, to whom was awarded the First Silver Medal for a set of Measured Drawings of the Library at Lambeth Palace.

REVIEWS. LXIII.

(174)

PHILÆ.

A Report on the Islands and Temples of Philæ. By Captain H. G. Lyons, R.E. With an Introductory Note by W. E. Garstin, C.M.G., Under-Secretary of State for Public Works Department in Egypt. Printed by order of Hussein Fakhri Pasha, Minister of Public Works. Fo. 1897.

The proposition to overwhelm the Island of Philæ, with its group of temples, and to drown a length of not less than one hundred miles beneath the waters of an enormous reservoir, need only be

referred to: the subject has been fully discussed in these columns. The ambitious scheme as first proposed has been very much modified; indeed, whilst maintaining, as it does, that a reservoir is necessary at the First Cataract, the Department of Public Works in Egypt, under the able guidance of Sir W. E. Garstin, has shown itself most willing to listen to and to consider the objections which have been laid before it. We cannot do better than quote the "Introductory Note" to the report, written by Sir W. E. Garstin himself, which is the subject of this review:—

I have no intention here of entering into the question of the conflicting interests of agriculture and archaeology, as involved by the construction of the above work. It will suffice to say that the technical advisers of the Egyptian Government, after due consideration of the protests lodged against the proposal by the scientific societies of Europe, eventually recommended that a modification of the original scheme should be adopted. The project, as modified, was so designed that, while assuring to a portion of the country the benefits resulting from an increased water supply in summer, it should at the same time secure the celebrated monuments of the Philæ Island from any chance of destruction.

The main point of difference between the two schemes lies in the fact that in the modified project as now accepted, the water surface level in the reservoir has been reduced by eight metres (27 feet) below that originally decided upon. By this alteration the greater portion of the ruins on the island will remain permanently above the submerged level. Some parts of the structures must unavoidably be flooded for a short period of each year; but before the reservoir is constructed, steps will be taken to secure their stability, and to preserve them from decay.

The book now under review is the result of the investigations then set in hand and placed under the charge of Captain H. G. Lyons, R.E. "Captain Lyons, besides being a highly trained Engineer, is an Egyptologist of considerable repute, and has moreover already made his name known by his contributions to our scientific knowledge in Egypt."

The book opens with a report—of sixty-eight pages—by Captain Lyons, in which we find a general description of the work and the methods employed, a description of the island, a list of the buildings thereon, a report on the foundations of these buildings, and reports in detail upon each temple and building. Then follows a list of repairs which it was found necessary to execute in order to maintain the stability of certain parts; finally, there are appendices, lettered from A to F, entering into most minute details, the whole being assisted by constant references to the photographs and plans, &c., which form the bulk of the volume. Following upon the printed matter, we have no fewer than sixty-seven colotype reproductions from photographs of the island and the objects on it, taken not with a view to picturesque results, but so as best to illustrate the report and to give a careful record of each object.

The selection of the points of view has been made with admirable judgment. The photographs

Nos. 12, 18, and 48 enable us to realise how much we shall lose should the reservoir, even as modified, be constructed.

The island was not only a place for temples, but it was covered with houses. The idea of creating a desert around a monument is very modern. The Egyptian surrounded his temple or group of temples with a high wall. The houses of the town crowded close up to this, and within it there is good evidence that many more houses were placed, probably for those serving the temple. In other countries there is sufficient evidence to lead us to know that contrast of small buildings with great was fully appreciated.

When Captain Lyons began his work on the Island of Philæ the visitor passed over mounds of dusty débris, seeing only the ruins of the temples before and around him. These mounds were the débris of the houses and narrow streets since laid bare. From any elevated spot we can now look down on the ruins of a little Pompeii, and realise the picturesque jumble which the place must have presented before it fell into decay: the stately quays, the temples and colonnades rising here and there above the crowded houses, the whole culminating on the highest part of the middle of the island in the Pylons of the Temple of Isis, forming a front to the great inclosure wall which shuts in the bulk of the temple, leaving only its Pylon tops in view.

The remains of the houses and of the great inclosure wall are, unfortunately, built of crude brick. It would be difficult to prove the date of these houses, but certainly they are not all Coptic, as the report seems to imply.

It is to be deeply regretted that the word Coptic is used by Egyptologists almost as a term of reprobation, and that objects of Coptic antiquity have generally been treated with the most ignorant neglect. The Egyptologist seems to think that outside his "ology" there is no more to be studied. In the present instance we must be glad that such extreme disregard of an important page in the great book of archaeology has been avoided. In the plan of the island (Plan I.) all the houses and streets are carefully set out, and photographs are given of many details. All these structures of crude brick are doomed to perish. Sir William Garstin tries to put the best face on the matter that he can. He says in his introductory note:

One portion of the remains at present existing upon the island must, I fear, inevitably disappear with the advent of the reservoir; I mean the Coptic village, which being constructed entirely of mud brick masonry cannot possibly withstand the dissolving action of the water. A complete survey and a detailed plan has, however, been made of it, and its position and arrangement will therefore have been recorded. This being done, there are many people who consider that the general aspect of the island will be improved by the removal of this mass of small mud buildings, which hides in a great measure the outlines of the temples and prevents their symmetry and noble proportions from being properly seen.

The temples were not built to be seen in isolation.

This paragraph from Sir William's introductory note brings us face to face with the melancholy fact that the statement, "By this" (modification of the reservoir scheme) "the greater portion of the ruins in the island will remain permanently above the submerged level," is rather what we wish might be than what will be.

A glance at plan No. VII., which gives us sections through parts of the chief buildings on the island, reveals to us but too plainly that the sentence should have been written otherwise; the unadorned truth being that, except the Temple of Isis, there is not a monument on the island which will not, when the reservoir is full, be partly submerged. The picturesque little building of Nectanebo at the south end of the island will stand in fully nine feet of water, leaving little more than the top visible; the great Pylon will stand in six feet of water, the Kiosk in three to four feet of water.

It will be but for a few weeks that the level of the water will stand so high, but, in result, everything that is not of stone will be converted into slime and gently float away; "much improving the aspect of the island," as many people are said to think.

In view of this unfortunate state of things the greatest attention has been paid to examining the foundations of all the stone buildings, and with the most interesting and, upon the whole, satisfactory result. Many of them are found to stand upon the granite of which the island is composed, the foundations carried down, block under block, below the floor level to a greater depth than the buildings they bear stand above the floor level. Other foundations, equally solidly built in themselves, stand on the Nile deposit. It does not seem a difficult problem to secure these from movement; indeed we understand that it is the intention of the Egyptian Government not to admit any water whatever until every structure on the island that can be preserved has been consolidated below and made thoroughly secure above. From the action of the Nile water on the stone we have nothing to fear.

Whilst we are forced to deplore the loss both of interest and charm which must fall upon Philæ and its surroundings, we must not forget that from the earliest times the irrigation of the country has been one of the first cares of those who governed Egypt. The need of irrigation is as great now as it ever has been. Whilst feeling this need the existing Government has with no niggard hand done its best to meet the views of the students of antiquity. Again, to quote the words of Sir William Garstin:—

I trust that Captain Lyons's work and report upon Philæ will be accepted as an earnest of the good faith of the Egyptian Government in the matter of endeavouring to preserve a scientific record of all monuments affected by

the construction of the reservoirs. In addition to what has been done at Philæ, the survey of Nubia has been commenced, and the different site plans (with levels) of all monuments existing in the above tract of country will be published when opportunity offers.

This statement was made in June 1896, and already a great deal of work in the direction above indicated has been done.

The report is printed by Messrs. Waterlow & Sons for the Egyptian Government, and they may be congratulated upon the excellence of their colotype reproductions of the photographs. The type and printing are clear, the shiny paper detestable, whilst the outside of the book reminds one of a cheap album for stamps.

SOMERS CLARKE.

(175)

BUILDING CONSTRUCTION.

Building Construction and Superintendence. By F. E. Kidder, C.E. 8o. New York, 1897. [William T. Comstock, 23, Warren Street, New York.]

The first volume of a new work on Building Construction and Superintendence has lately been written by an American architect, Mr. F. E. Kidder, C.E., and presents many novel features which are not usually found in works of this kind.

Chapter I., devoted to foundations and the setting-out of buildings, contains some useful information, from actual American buildings, on designing foundations on firm soils and on superintending this work from an architect's point of view.

Chapter II. is devoted to foundations on compressible soils, showing methods adopted for spreading the weight of buildings. The bearing power of piles is also given, and safe working loads on piles in different soils. We find here, too, the municipal regulations of New York and other cities affecting foundations, also a note as to spreading the weight on foundations by means of concrete on iron tension bars, and a useful table of the proportion and strength of such foundations which have been used extensively in Chicago; mention is also made of the use of steel beam footings. Timber footings are then described, as are also caissons, especially as carried out in the Manhattan Life Building, New York City, of which a section is shown.

Chapter III. deals with masonry footings and foundation-walls, shoring and underpinning. The objections to the inverted arch are pointed out. Then come some useful notes on the thickness and forms of retaining walls, area walls, and vault walls, and the superintendence of foundation work in general. This chapter contains some very useful information, which is further supplemented by a paragraph on dampness in cellar walls, window and entrance areas, and pavements, which show practical means of treating various subjects.

Shoring, needling, and underpinning are described with illustrations. The description of the Chicago practice of lowering the foundations of new buildings when placed against those of old is interesting.

Chapter VI., on cut stonework, is a practical one, and gives illustrations of various examples of cut stonework. The article on stone cutting and finishing is an improvement on the ordinary building construction book, since, as the author very rightly says, "that the architect may specify correctly the way in which he wishes the stone finished in his buildings, it is necessary that he be familiar with the tools used in cutting and the technical names applied to different kinds of finish." Illustrations of these tools are given and methods of working. Then follow some illustrations showing how stone lintels may be aided by iron joists—a construction very necessary in practice, though hardly according to one's ideas of truth in construction. This chapter is one of the best in the book; but the notes on strength of stone masonry are not carefully worded; for instance, in describing the strength of stone piers, they are all described as so many tons, but whether to the foot, or yard, or inch is not stated. In fact, throughout the book there is a laxity in phraseology, which to the average student would be very puzzling.

In Chapter VII., the author's remarks on brickwork may be of use; but he enters into a mistake common to text-books when saying that bricks should be laid in mortar not more than $\frac{3}{8}$ inch thick. One is entirely at a loss to understand what this means, since, if properly executed, joints of $\frac{1}{2}$ inch up to $\frac{3}{4}$ inch look well in the eyes of certain people. If good mortar is used, nothing need be feared. The notes on ornamental brickwork are better than those in most books of the kind, but might well have been carried further. A note as to laying bricks in freezing weather should be mentioned. The author rightly states "that brickwork should never be laid when the temperature is below 32° , and if it is below 40° and liable to fall below 32° at night, salt should be mixed with the mortar and the bricks heated before laying." He also makes the statement: "In building large buildings in the winter time, one-third Portland cement should be added to the mortar; then it will not be damaged by freezing." In England, however, when building below freezing point, it is the custom in good work to effect it in Portland cement. Notes as to thickness of walls, joining new ones and old, party walls, cracks in walls, hollow walls, &c., are included in this chapter.

Chapter VIII. treats of architectural terracotta, its composition and manufacture, and the sham way in which it is usually built up on buildings—on a framework of steel.

Chapter IX. is devoted to fireproofing and

the materials for this purpose; the descriptions of fireproof floors are done with apparent care. There can be no harm in these floors, but as long as steel joists and coke breeze concrete can be erected in England at little cost above the ordinary combustible floor, it seems that patent fireproof floorings are scarcely wanted. Then follow notes on column casing and on thin partitions.

Chapter X. deals with the question of iron and steel supports to masonry work in what is known as skeleton construction, a type of work of which the average Englishman is as innocent as the babe unborn. Some of the sections showing this mode of construction are in truth appalling, and it is to be hoped will not reach this island.

Chapter XI., on lathing and plastering with wood and metal laths, is brought up to date by the insertion of expanded metal and sheet metal laths. Why this form of lathing is not more generally preferred to the ordinary combustible wooden lath it is hard to say, as it is in every way superior. Notes on interior plastering, exterior stucco works, &c., are given, as also on the material called "staff," which was used for the façades for the Paris Exposition and the World's Columbian Exposition at Chicago.

Chapter XII. is devoted to concrete building construction, and contains some interesting details with regard to its application in several large American structures, notably that in the Hôtel Ponce de Leon at San Francisco.

Chapter XIII., and the last, is headed "Specifications," of which it gives an outline for the several trades. The author ends his first volume with an appendix containing tables of building stones, &c., as used in America.

We notice throughout the book that the formulæ are not expressed with all the clearness one would desire, and probably Mr. Kidder will see his way to remedy this; otherwise we think the book, with the exceptions mentioned, a fair *résumé* from a student's point of view of Rivington's, on which it seems more or less to be founded.

Part II., in preparation, will contain chapters on woods used in building, framing, floors, roofs, &c., joinery, smiths' work, roofing, slates and tiles, painting, and further specifications of the above.

BANISTER F. FLETCHER.

NOTES, QUERIES, AND REPLIES.

Carfax Tower, Oxford.

From J. P. HARRISON, M.A. Oxon., with reference to the review entitled "Two Oxford Guide Books" [*ante*, p. 50], by John Cotton [*F.*]

The result of an attempt to ascertain the approximate date of two rude arches inside Carfax

Tower, which has recently been made, was communicated to the Royal Archæological Institute at their first autumn meeting. The conclusions arrived at may be of use as a basis for more extended research; they are briefly as follows:—

1. The ragstone arches, above referred to, are of precisely the same construction as some which were discovered ten or twelve years back in the east wall of Oxford Cathedral, and believed to be remains of the ecclesiola known to have been built on the site *circa* 727, and ever since religiously preserved from its connection with the history of St. Frideswide, and the fact that it was the first church that is known to have been built in Oxford.

2. Similar ragstone arches, possessing the same structural and distinctive peculiarities, are found at Binchester and other Roman stations, and no doubt served as models for the Saxon masons.

3. Whilst, however, remains of more or less debased types of Roman arches served as exemplars for the Saxons to copy, it would have been long before they could have learned to frame centering like that upon which the Roman masons turned their ragstone arches, but of which there would have been no existing specimens. Consequently the earlier Saxon arches would have been of a very irregular shape, and more or less angular; and this is conspicuously so, both at Christ Church and Carfax.

4. Another feature that helps to distinguish early from later Saxon ragstone work would be the greater width or span of the arch in the line of springing, compared with that between the jambs, owing to there being for some time no projecting or corbelled impost. Oxford, here also, supplies a good example of later ragstone work in a doorway high up in the north wall of the well-known Saxon tower of St. Michael's Church, where there is not only a moulded impost, but a circular arch showing that it must have been turned on centering, the result being that there is much less difference between the width at the springing and between the jambs or pier-walls; and so it remained until the end of the Saxon period proper, when freestone masonry was the rule in all but exceptional cases.

5. A fourth example of the same distinctive early feature found at Carfax and Christ Church, but in a mutilated state, occurs in the present ringing-chamber of the tower of St. Peter's in the East, also in Oxford. It appears to have formed part of a doorway in the north wall, at some height above the old level of the ground, as in the case of the doorways at Carfax and St. Michael's. The length of walling of which it forms part, as often found in very early buildings, has been preserved when the rest of the tower has been rebuilt, or, in part, cased. The ragstone work is better than at Christ Church or Carfax, and may be of ninth century date.

6. As regards late Saxon architecture, Precentor Venables showed conclusively, shortly before his death, that the two Saxon towers at Lincoln, which were for some years supposed to be the two mentioned in Domesday Book as having been built after the Conquest, are not the ones now existing; for it had been ascertained that the two Domesday churches were demolished several hundred years ago for city improvements. There are, therefore, now no dated examples of late Saxon churches to refer to; but there is reason to believe that Mr. J. H. Parker, and others since his time who closely studied the subject, were right in supposing that Saxon architecture at the date of the Conquest was no worse than Norman of the same period, and sometimes even better.

Middle Row, Holborn.

From JOHN HEBB [*F.*]—

One of the first improvements initiated by the Metropolitan Board of Works was the removal of Middle Row, Holborn, a block of sixteen houses which formerly stood in the midst of High Holborn, opposite the southern end of Gray's Inn Road. As early as 1856 (the Board having only been constituted in the previous year), in consequence of the urgent representations of the Holborn District Board of Works, the Board referred the question of the removal of Middle Row to a committee, who were subsequently authorised to obtain an estimate of the cost of effecting the improvement. The architect to the Board, Mr. Frederick Marrable, estimated the cost of the removal of Middle Row, with the necessary paving, &c., at £46,625, and the cost of acquiring the property on the south side of Holborn between Tennis Court and the entrance to Staple Inn at a further sum of £16,309, making a total of £62,934 as the net cost.

The Board, on the receipt of the report of the committee to which the matter had been referred, instructed the solicitor to the Board to negotiate for the purchase of the freehold, good-will, and other interests in the block known as Middle Row; but difficulties were encountered, and the negotiations were abandoned. In 1860 the Holborn District Board pressed the improvement on the Metropolitan Board, and again in 1862 a deputation from the District Board presented a memorial urging the necessity for the removal of the block, to which the Board replied that the suggested improvement would necessitate an Act of Parliament for its accomplishment, and as there were other improvements of a more pressing nature, the Board declined to undertake the removal of Middle Row.

In 1864 the Metropolitan Board of Works instructed their architect, Mr. George Vulliamy, who had succeeded Mr. Frederick Marrable, to make a fresh survey and estimate of the cost of the property required for the improvement, in view

of the probable increase in the value of the premises. Mr. Vulliamy's estimate was £61,152 for the cost of removal of Middle Row, and £20,000 for the cost of acquiring the houses in High Holborn, or a total of £81,152, an increase of 29 per cent. on the former valuation. Mr. Vulliamy, in his report to the Standing Committee of the Board, expressed the opinion that it would not be advisable to touch the property on the south side of Holborn, the ground floors of the houses being let to tenants having valuable business interests, and the upper floors to solicitors of Staple Inn; and he further reported that the new line of frontage between Tennis Court and the entrance gateway to Staple Inn, suggested by Mr. Marrable, would not in his opinion be equivalent to the cost incurred, and that "it would be questionable in point of taste to destroy one of the most picturesque examples of the half-timber style now existent in the Metropolis." Mr. Marrable's new line of frontage would have destroyed the western half of Staple Inn, and it is well that the public should know to whom it is indebted for the preservation of this interesting relic.

The Metropolitan Board obtained an Act of Parliament authorising the improvement, which was carried out at a cost of £66,559 18s. 3d., and the widened roadway was thrown open to the public on 21st December 1867.

Holywell Priory, Shoreditch.

From W. A. LONGMORE [*F.*].—

Upon reading the interesting account of Holywell Priory, Shoreditch, by Mr. E. W. Hudson, in the *JOURNAL*, it has occurred to me that he might perhaps like to know that I have in my office [7, Great Alie Street, Whitechapel, E.] the upper part of the figure of a bishop, carved in Purbeck marble, which was found some years ago in digging the foundation of a house in New Inn Yard, probably part of the site of the Priory; unfortunately, the head could not be found, although searched for. The work is well executed, and might possibly be a portion of a monument to the Bishop Gravesend mentioned in the Paper. Mr. Hudson is welcome to examine it if he wishes, or I could send him a photograph of it.

I may also mention that, having frequently to pass that way while the Great Eastern Railway was being constructed, I once noticed two fine stone corbels, with heads of a king and queen, which were being used as spur stones to a gate leading into the works. I visited the place again shortly afterwards, intending to try and obtain these corbels by purchase, if possible; but they had disappeared, and I could learn nothing about them. I should hope that they have been preserved, as they seemed to be fine works. I took them at the time to be intended for Edward III. and his Queen.

MINUTES. IV.

At a Special General Meeting held Monday, 13th December 1897, at 8 p.m., Professor Aitchison, A.R.A., *President*, in the Chair, the Minutes of the Special General Meeting held 29th November 1897 [p. 74] having been taken as read and signed as correct, on the motion of the President it was

RESOLVED, *nem. con.*, that the following Resolution passed at the Special General Meeting of the 29th November be confirmed, viz.—"That in order that the Council of the Royal Institute may remain in office until the close of the last General Meeting in June of the year following that in which they were elected, the following alteration be made in By-law 30—viz. that in the last line but one of the final clause the word 'last' be substituted for 'first.'"

The Special General Meeting then terminated.

At the Fourth General Meeting (Ordinary) of the Session, held at the conclusion of the Special General Meeting above referred to, Professor Aitchison, A.R.A., *President*, in the Chair, the Minutes of the General Meeting (Business) held Monday, 29th November 1897 [p. 74], were taken as read and signed as correct.

The decease was announced of the following members—viz. Octavius Hansard, elected *Associate* in 1848, *Fellow* in 1860; John Loughborough Pearson, R.A., elected *Fellow* in 1860, *Royal Gold Medallist* 1880; William Stephens Cross, *Fellow*, elected 1882; Joseph Baty, *Associate*, elected 1881; Arthur James Forge, *Associate*, elected 1894.

In reference to the death of Mr Pearson, the President having paid a personal tribute to the estimable qualities of the deceased, and referred to his distinguished work as an architect, it was

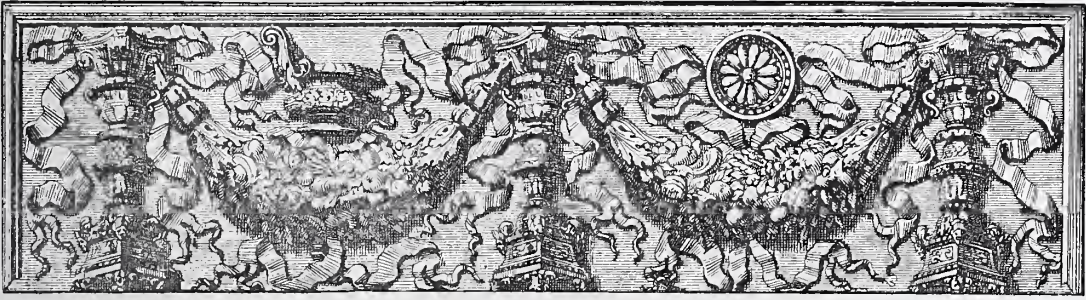
RESOLVED, that the Royal Institute of British Architects desires to place on record its admiration of the magnificent works of architecture carried out by the late John Loughborough Pearson, R.A., *Fellow*, and to express its feeling of profound sorrow for the loss sustained by the death of so gifted an artist; also that the Institute do offer to the family of the deceased an expression of sincere condolence with them in their bereavement.

The following Associates attending for the first time since their election were formally admitted and signed the Register, viz. James Richard Fleming, Richard Henry Ernest Hill, Percy Morris, and William Stanley Bates.

The following candidates for membership, found by the Council to be eligible and qualified according to the Charter and By-laws, and admitted by them to candidature, were recommended for election, viz.: As FELLOW, Arthur Alderson France (Bradford); As HON. CORR. MEMBERS, Leopold Eidlitz (New York) and Victor Dumortier (Brussels).

THE REPORT ON THE THIRD SERIES OF BRICKWORK TESTS conducted under the direction of the Science Standing Committee having been read by Mr. William C. Street [*F.*], Mr. Max. Clarke [*A.*] followed with a statement explanatory of the method of carrying out the experiments, and calling attention to the practical value of many of the results arrived at, and further, with the aid of limelight views, gave a description of the behaviour of the walls during compression. Professor Unwin [*H.A.*], F.R.S., having delivered some critical remarks on the way the Reports had been drawn up, and given his views as to the teaching of the results, a discussion ensued, at the conclusion of which a vote of thanks was passed by acclamation to Sir Wm. Arrol and Mr. H. F. Donaldson [*H.A.*] for the valuable assistance they had afforded the Committee, and to the members of the Sub-Committee who had directed the operations, and reported and tabulated the results.

The proceedings then closed and the Meeting separated at 10 P.M.



THE LATE JOHN LOUGHBOROUGH PEARSON, R.A.

TO the future and its judgment a true estimate of the work of a great artist and his influence upon his times must be left. Especially is this the case when he has lived in the days of Eclecticism; not less so, when the quality of his production has grown and gathered up in freshness, vigour, and grace to the very close of a life of fourscore years, and when the hand which has shown the way to so many has only just laid down the pencil. Only yesterday John Loughborough Pearson was working amongst us—one of us in very deed—even at his great age, and after his many and great achievements, as to his life's work, still young—cut off in the very vigour of his intellect and fulness of his power. Although it is now too soon to form a final estimate of him, we may well look back into the character of the man and his methods. That he was first a disciple and afterwards, in works not words, a leader in the so-called Gothic Revival—in so far at least that he was a builder of great Gothic churches—must be attributed to the mere chance of the time into which he was born; for an intimate knowledge of the man himself led to the firm conviction that to him style was but the clothing of great architectural ideas—that the indispensable scholarship and inexhaustible knowledge of tradition were the means only towards the expression of such ideas—that at the very height of the great, now almost historical, battle of the styles, he, wellnigh alone of his school, kept a balanced mind. It is a fact that a great classical or renaissance work was, in his latter years, a—perhaps somewhat vaguely—cherished ambition of the creator of Truro Cathedral and St. Augustine's, Kilburn. Had such an opportunity offered, there can be no doubt that we should have had, from his remarkable sense for proportion and composition, from his intimate knowledge of detail, a building as full of refinement, character, and repose as the best of those in that mediæval manner which he made peculiarly his own.

It was, perhaps, from this view of architecture as a comprehensive art rather than an aggregation of divergent styles, of which one should take precedence of all, that his work is to be differentiated from that of his most eminent contemporaries of the Revival. Even at a time, now fortunately almost historical, when straying from pure imitation of the past was apt to be regarded as an architectural sin, or mark of ignorance, traces of an individuality are to be found in the compositions of his earliest period, which may be said to extend roughly from his first church at Elleker, in 1843, to the conception of St. Peter's, Vauxhall, in 1861, the first of his new vaulted structures. It was this new delight he seems to have found in the stone groined roof, in dealing with which he became the acknowledged master of his time, that developed his full powers and produced St. John's, Red Lion Square, and other well-known kindred structures, where we find not only a complete mastery over forms of mediæval art,



FIG. 1.—DALTON-HOLME CHURCH, YORKSHIRE (1858). ;
(From a water-colour drawing.)

but a sympathy with its nature and insight into its methods, all made subservient to modern needs, and, hardest of all, to the demands of modern economy. Of these works of striking individuality and merit, while they have not been surpassed—not often rivalled—in their expression of the highest mediæval ideals of architectural fitness, it is still to be said that they are essentially of the age and of the man, and as such they will take their place in the history of Art.

Born in Brussels in 1817, Mr. Pearson was articled at the early age of fourteen to Ignatius Bonomi, in Durham. His grandfather was a well-known lawyer of that city, while his father, William Pearson, was an etcher and water-colourist, who shows a distinct taste for the picturesque and romantic in architecture just at the period of the romantic movement in literature which characterised the early years of the century. In 1824 he published a series of etchings, *Picturesque Views*, and a little later a more important volume, *Antiquities of Salop*. His technical skill with the etcher's needle exhibits no great aptitude, but the subjects, which are almost exclusively architectural, are rendered with evident appreciation of form and contour, and no little taste in selection. Here no doubt was the germ of what was to make the son famous. But the young architect must have had in his early years an infinite capacity for painstaking study and application. The great Cathedral of Durham, culminating in its Nine Altars, was there to his hand, and every spare hour from office work was spent in and around its walls. His veneration for it never grew less throughout his long life, and it is not a little interesting to find him seeking the motive for the choir triforium of his own Cathedral of Truro at the



FIG. 2.—ST. MICHAEL'S, CROYDON : SOUTH-EAST VIEW (1880). (From a water-colour drawing.)

source of his first inspirations. The grand proportions of the Chapel of the Nine Altars strike all beholders, and, modest and reticent though he was in all things concerning himself, it was a treat sometimes to hear him speak with all the enthusiasm of youth over his early joy in this great structure. The Yorkshire abbeys and churches were also the subjects of his constant study and attention. He had at all times an extraordinary aptitude for gauging and absorbing the salient points for study and interest in any building.

In early days his education was amplified by numerous careful and accurate sketches, drawn with an excellent line, often vigorously washed in, and accompanied by full dimensions and sometimes by apt verbal descriptions. Those were the days when photographs were not, and books were comparatively scarce. But his industry seems to have been untiring, and he drew from every source, for wherever possible books and plates were also borrowed, and he was not content with the mere reading and study of these. Every plate of value was carefully copied, not a detail of interest escaped him. These drawings were mounted with his own sketches into large scrap-books, and exhibit a happily chosen series of designs and details of every possible description, things great and small, artistic and constructional, of all styles, English and foreign. Nothing in which an architect should be proficient is omitted from these admirable and comprehensive studies, and the source of Mr. Pearson's indefatigable personal attention and love for every detail of the furniture and equipment as well as of his buildings themselves is thus not far to seek. As an increasing practice brought the means, he formed the nucleus of a fine architectural library which continued always his hobby and his recreation, and with every volume of which he was intimate, and could turn in a moment to plate or page bearing upon any subject of immediate interest or conversation. This was noticeably the case in regard to the cathedrals and abbeys in whose history and development he was deeply versed, and for the stones of which he had all the love and feeling of the most pronounced antiquary.

A study of a process of self-education here outlined, from which devolved such eminent results and so fine a character, is interesting in these days of teaching, text-books, and examination tests, although it has little bearing upon the fact that a genuine feeling for architecture, backed by irrepressible diligence, will surely find its own way to the front. In Mr. Pearson's case that innate power of appreciation and sympathy already alluded to had undoubtedly given him a keener insight than most of his fellows into the more abstruse causes and effects and methods of construction in which lies that indescribable factor "quality" in architecture, quite apart from correctness of form or detail. In nothing is this more apparent than in his vaulting. The carefully studied plan of the ribs upon the cap, so primarily essential to a successful treatment, the best pitch of the diagonals and transverse ribs to give a well-proportioned rise as viewed from below, their relative section and importance, differing so much in different surroundings, the awkward opposition of optical lines their conjunction is ever ready to set up if proper corrections are not warily introduced, and, not the least important of many intricacies, the constructional value and treatment without crudeness of the horizontal beds of the springers—all the factors in successful vaulting—he had learned to control so readily that no space was too irregular or awkward to induce the least appearance of effort in the vault he threw across it. He had mastered equally that mysterious intricacy of parts which is the charm, and often the wonder, of the later canopy and decorative niche work, frequently so bald and hard in modern efforts at reproduction.

In his procedure the plan always received the first and fullest consideration. His plans present a great variety, always showing some characteristic treatment dependent upon the conditions imposed, as, for example, at Truro, where the whole conception has its origin in the happy incorporation of south aisle of the old parish church. His western porches are frequently ingenious, and the management of the choir and the sanctuary specially interesting. In his larger structures the morning chapel has an important place, and is treated so as to

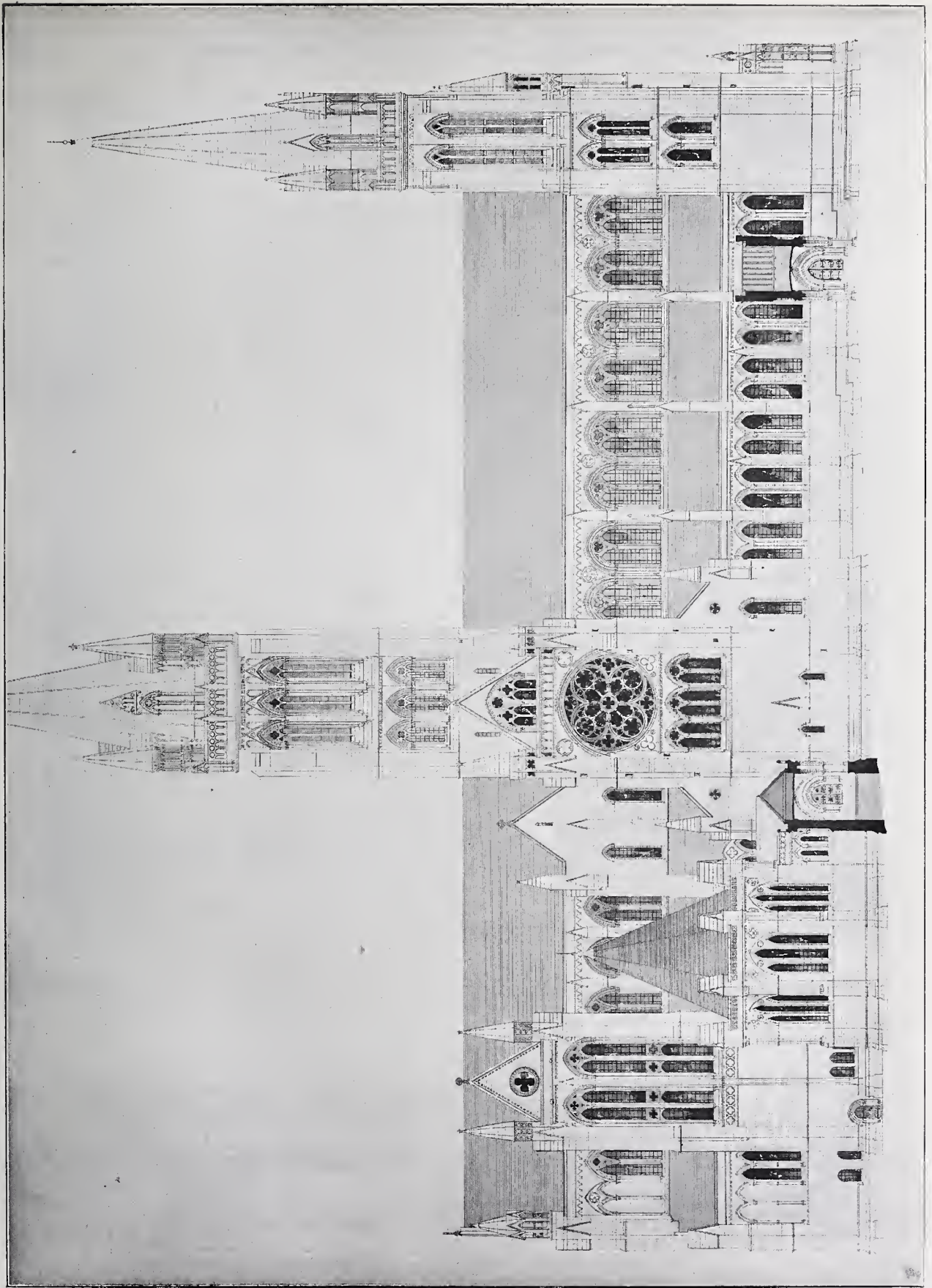


FIG. 3.—DUOMO CATHEDRAL; NORTH ELEVATION.

give additional scale to the rest of the building. Notable instances are to be found at St. John's, Red Lion Square; St. Michael's, Croydon; and the Catholic Apostolic Church at Maida Vale. At Truro, on the other hand, the ornament is less restrained over the whole choir; but this will not have its proper value until the sterner nave is completed to create that effect of quiet contrast for which he invariably sought.

In general design he aimed first at form, covering both proportion and contour, and no matter how simple or how rich the detail of the design, these qualities of proportion and outline always held first place, and are to be found equally prominent in whole buildings, in their parts, and in their details. Whatever the coming changes of taste or developments of style, it is probable that his sense of beautiful proportion, of balance, and of harmony, will receive its



FIG. 4.—LECHLADE MANOR: ENTRANCE FRONT (1872-73).

due acknowledgment. To single out specific instances from so many notable examples, there may be mentioned the north transept of Truro [fig. 3], on a large scale, the Bishop's throne at Peterborough on a smaller one; while a blending of harmonious detail suitable to its position and circumstance is so marked in his work as frequently to identify its authorship.

As a great designer of towers, Mr. Pearson is perhaps not sufficiently known, and no reference to him and his work would be complete without some allusion to his special aptitude in this attractive field, due to his acute sense of vertical proportion and outline.

In the 1862 Exhibition, and afterwards at Paris, he showed a large sheet of tower designs, all, of course, in his earlier and less interesting manner, about half of which had been erected up to that date. The well-known tower and spire of Holy Trinity, Vauxhall Bridge (1848), is a typical example, and Dalton-Holme (1858) [fig. 1], one of the latest of this period. An interesting tower and spire, showing a great stride, was designed in 1862 for

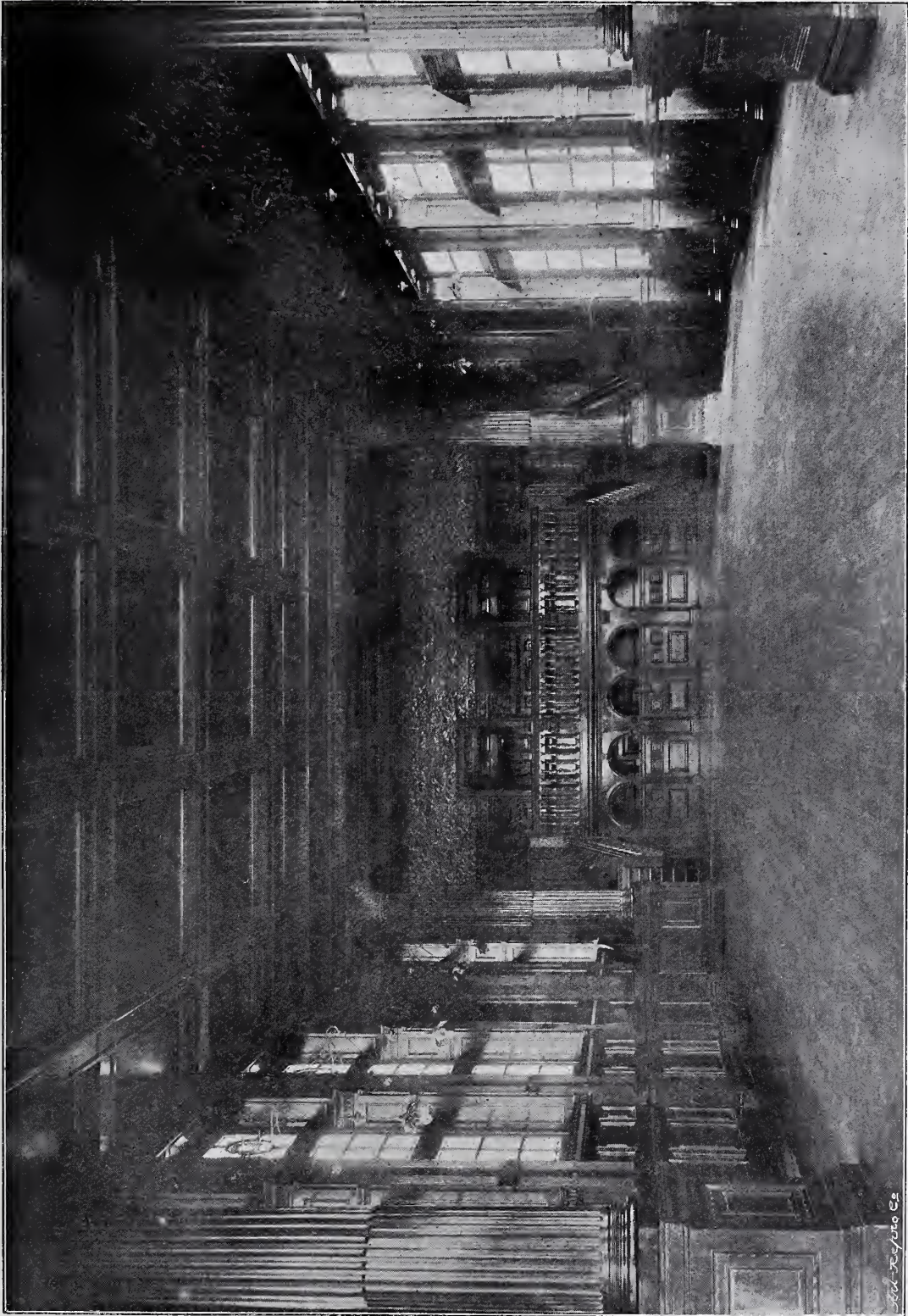


FIG. 5.—WESTWOOD HOUSE: MUSIC ROOM (1880).

W. P. 1880 E2

St. Peter's, Vauxhall, but never erected, which is to be regretted, as it would have made a fine contrast to the early example at the western end of the Bridge. Having thus loosened the reins, the tower designs which followed in great number are invariably vigorous and graceful, and many of them genuine masterpieces. It is unfortunate that the finest are only upon paper; but an illustration of St. Michael's, Croydon [fig. 2], is given to show the architect's conception of one of his completed churches in his best manner. And how nicely the whole is balanced! The scaffolding will soon be down from the lofty spire at Kilburn, which he never lived to see, as the vane was only placed upon it a week after his death. Widely



FIG. 6.—ST. AUGUSTINE'S, KILBURN (1871).

divergent as these towers are in form, the same feeling runs through most of them. Buttresses are either slight or entirely dispensed with; strong vertical lines predominate; the stories are graded with an enviable intuition; the spire, when used, is generally short, and that frequent pitfall, the junction of tower and spire, always mastered. In this feature it may be noticed that Mr. Pearson often allowed Northern French methods to influence him as well as in that of entasis, which in both spires and turrets always had his closest care. As an illustration of his painstaking and self-critical methods the genesis of his own favourite amongst his towers—the central tower of Truro—is interesting. His first conception had been drawn in completely on the finished elevations, one of which is illustrated [fig. 3], when a night's brooding (or it may have been many) decided him that it could be bettered, that the whole must be erased to make room for another and a better, the best of all as it seemed to him. And if it ever comes to be erected with the same spirit as he would have put into it, it will be a worthy crown to a noble creation.

It has been well said that Mr. Pearson was better known to the public as a "restorer" than as a producer. Indifferent to architecture, the public is ready enough to take an interest in controversy, and too apt to side with the loudest shouters, irrespective of the merits of the question. It is not, therefore, surprising that one of the most learned, tender, and skilful of those whose lot it has been to preserve many of our most cherished monuments of antiquity, has on occasions been held up to obloquy as a species of destructive Ironside. But

his manner of dealing with his critics, who became too frequently his opponents, was always the same. He invariably gave the fullest consideration to the points of view urged against him, and satisfied himself whether they were worthy or not of his attention; but he was not to be drawn into public controversy, although he was once or twice led to deny absolute misstatements of fact.

That his sensitive nature felt acutely the attacks of a blustering minority there can be no question, but, with a logical mind, he trusted to a logical and tempered judgment prevailing in the long run. In the recent Peterborough controversy he was satisfied with the rightness of his determination as soon as his critics had exposed their hand and their case by the publication of their so-called "specification."

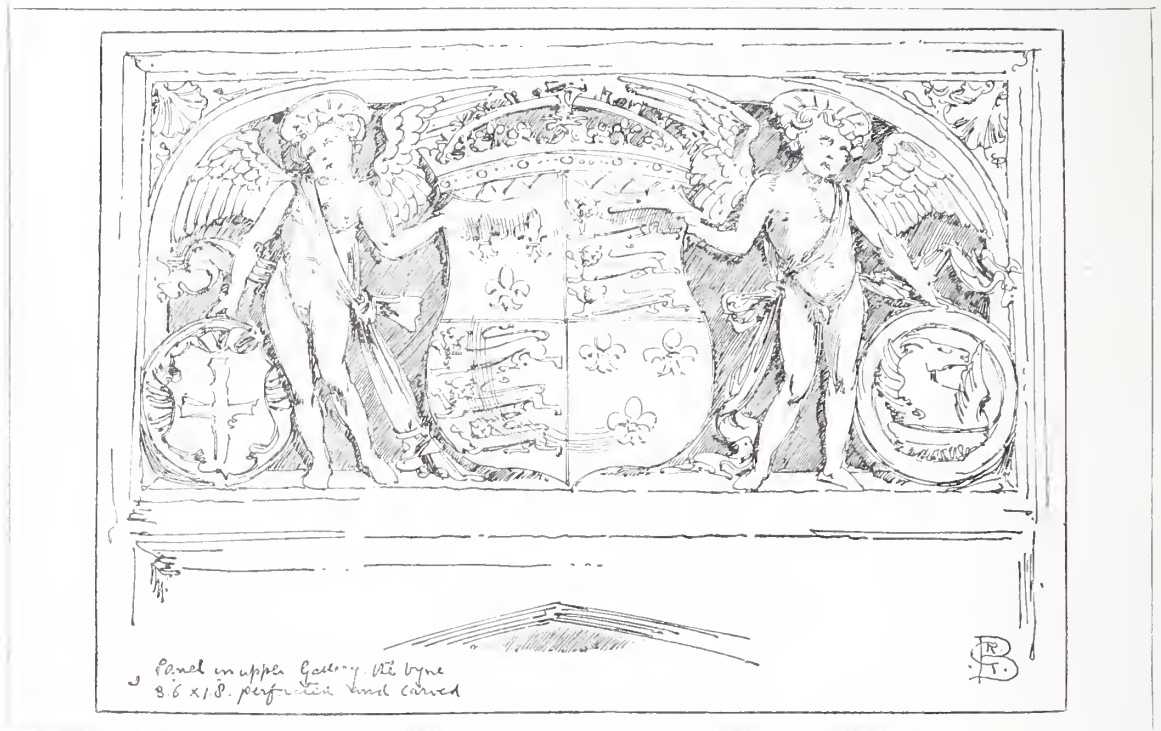
Space does not permit more than a reference to his views regarding the controversy, which ran high at the time, over Westminster Hall. He was always of opinion that the true proportions of the building could only be properly appreciated from the old low level of the ground, but that the somewhat fatuous decision of Parliament to alter the original proportions did great injury to the building.

No happier instance of a commendable reparation to an ancient monument is to be found than the work he contrived in order to keep up the S.W. Tower of Lincoln Cathedral, which at one time seriously threatened collapse. This exercised to the full his capacity for construction, which was one of his strongest features in dealing with new buildings as well as old, and about which much could be written.

This notice is rather of a personal nature than one dealing with individual works. This has already been done in some measure elsewhere. But characteristic examples of the ecclesiastical work with which his name is generally associated are illustrated, and also instances of quite another manner, in which he was equally proficient. His work at Sidney-Sussex College may also be mentioned, the garden front of which, with the Combination Room bay, is specially successful and interesting. His design for a chapel to the same college, unfortunately not executed at his death, was also exceedingly fresh and graceful, and thoroughly collegiate. More definitely classical work was done at Cliveden Hall and at 19 Carlton House Terrace, where the library is a very successful interior in the Italian manner; and after seeing Mr. Astor's offices on the Embankment, one cannot but regret that London has not been more freely enriched by other civic or domestic buildings from the same hand.

It is quite impossible to overrate the charm of Mr. Pearson's personal presence and character. No better instance could be found of the truism that a man's character is reflected or expressed in his productive work. Modest and retiring always, yet full of mental vigour, and evincing a scholarly interest in his art, to his intimates he was a ready talker, with a genial smile and a keen sense of humour—a fine type, in short, of a courtly English gentleman—one of whom no apter words could be used than those recently spoken by the President from the chair: "Everybody who knew Mr. Pearson must have loved him." As he was being laid to rest by the side of the great ones of the past, under the canopy of the Abbey which he loved and served so well, and beneath the brilliantly conceived organ-case which is so happy an example of his tenderness and skill to wrest beauty and fitness from conditions the most hazardous, the solemn office of the dead, rendered without pomp or undue ceremony as befitted his modest life and bearing, but with a perfection recalling his own strivings and ideals, seemed to speak of his attainment—the love of friends, the warm esteem of fellow-workers, the regret of all, and this—the nation's recognition—the most honoured of resting-places, which England bestows only upon her most worthy sons.

Palmas qui meruit ferat.



HUMANIST ARCHITECTURE IN ENGLAND.

By PAUL WATERHOUSE [P.], M.A. Oxon.

A History of Renaissance Architecture in England, 1500-1800. By Reginald Blomfield, M.A.
2 vols. 40. Lond. 1897. [Messrs. George Bell & Sons, Covent Garden]

I SUPPOSE that if it were possible, by some process of absolute and unquestionable appraisal, to select, from among the buildings of the past, two examples of equal merit, the one Gothic and the other of the style which, for lack of a name, we call Renaissance, human interest among persons of proper qualifications would centre more readily on the latter. My supposition applies of course to the present age, which, in the matter of architectural vision, is fairly free from the prejudices of the "battle of the styles." There are men among us who can appreciate with equal discernment (which means with equal knowledge) the products either of the mediæval or of the revived classic styles, and it is in the judgment of such men that I venture to think the difficulty of choice between a Gothic and a Renaissance building of closely competing merits would, after a tottering of the scale, end in the bending of the balance towards the Renaissance work. The reason of this is a thing, accidental, as one might say, yet so persistent in its accident, that its common inherence on the one side, and its general absence on the other, have become almost qualitative. This thing I had almost described as the attachment to, or absence from, a building of the name of its designer. But this is only half the truth, and if it were true would result in the diminution of our interest in a building by the mere accidental loss of the architect's name. The something which differentiates a Renaissance building from a Gothic one, far more intrinsically than the outward quality of style, is the fact that, speaking generally, and with great and notable exceptions, a Renaissance work is primarily a composition, in fact a work of art, while a Gothic building as often as not is a congeries of detail, perhaps even a congeries of compositions, the

total beauty of which may be due as much to good luck and old age as to human effort, or may even be absent. I say advisedly "with great and notable exceptions," for there are in our own country many monsters of the Renaissance, and not a few mediæval buildings, in which there is evidence of single purpose and complete design. In some cases our Cathedrals have architects' names attached to them, a surprising addition to our interest in any building; and in some there are actually visible those signs of harmonious and unaltered purpose which I have been speaking of as the private honour of the buildings created under the Humanist revival.

Mr. Blomfield has done well in his preface to draw our attention to this word "Humanist," a word which people avoid, being ignorant, for the most part, of its special meaning. But take it to mean what you will, its many aspects of significance have mostly an appropriate bearing on the architectural work of the Renaissance. Indeed, this very fact, that a Renaissance building is generally, in its whole effect, as well as in its parts, the product of a single human brain, gives the opportunity for at least a secondary and not very far-fetched application of the term. It is a snobbish thing to attempt a comparison between Westminster Abbey and St. Paul's Cathedral; but if one chooses to analyse one's feelings upon the two buildings the result is I think inevitable. I assume that the critic who sets about the task will kindly divest the Abbey of historical association, which is not architecture, and will divest his mind of the narcotic influence of antiquity, which is not architecture either, though it may be an evidence of good masonry. Strip the Abbey of these accessories, and of such of the tombs as are not additions to its beauty, and you get, for purposes of comparison with St. Paul's, a piece of very beautiful agglomerate. Both buildings you will admit have faults, both have marvellous beauties. In the case of the Abbey you are forced to acknowledge that the building both gains and suffers from the fact that its general effect is due not to an individual's intent, but to the ebb and flow of circumstance. Looking at St. Paul's, you say the faults are the faults of a man, and of the same man who was great enough to conceive the whole. In the creation of a Gothic cathedral man takes the place of the coral insect. One is awed by an immense sense of the effort—corporate, religious, continuous, and traditional—which has produced by accident, or more likely by inspiration, so beautiful a result. In face of a St. Paul's one is astounded at the greatness of individual man. Possibly the former is the higher sentiment; but I do not think the latter need be antichristian: it certainly has its humbling as well as its inflating effect; and I only know of two living architects, not our greatest, who have invited comparison of themselves with Wren.

Let these thoughts pass as prefatory welcome to a book on the English Renaissance. It will perhaps be granted, by those who understand these things, that no man is capable of worthily criticising architecture who has not to some extent agonised over a drawing-board. This is not by any means an admission by way of corollary that the effusions of an architect's leisure are usually sound reading; indeed, so far is this from being the case, that it is well to lose no time in allaying all apprehension on this score. Let me say at once that Mr. Blomfield, though we know him to be no idler in architectural practice (I use the word in an Aristotelian, not in a mercantile, sense), has produced a book which is at once sound, historical, systematic, and, as far as need be, complete. That it should include every example that anyone can imagine as appropriate to the subject and period is alike impossible and unnecessary. Outwardly and bibliographically the work calls for high praise. It is in two volumes, a necessary tribute to the laws of gravitation and human dynamics, each volume being as big as one can conveniently handle. The illustrations, of which more is to be said, are for the most part good, and in many cases of high merit; the print is excellent, and there are no frontispieces, nor have two of the plates been singled out for the negative favour of being

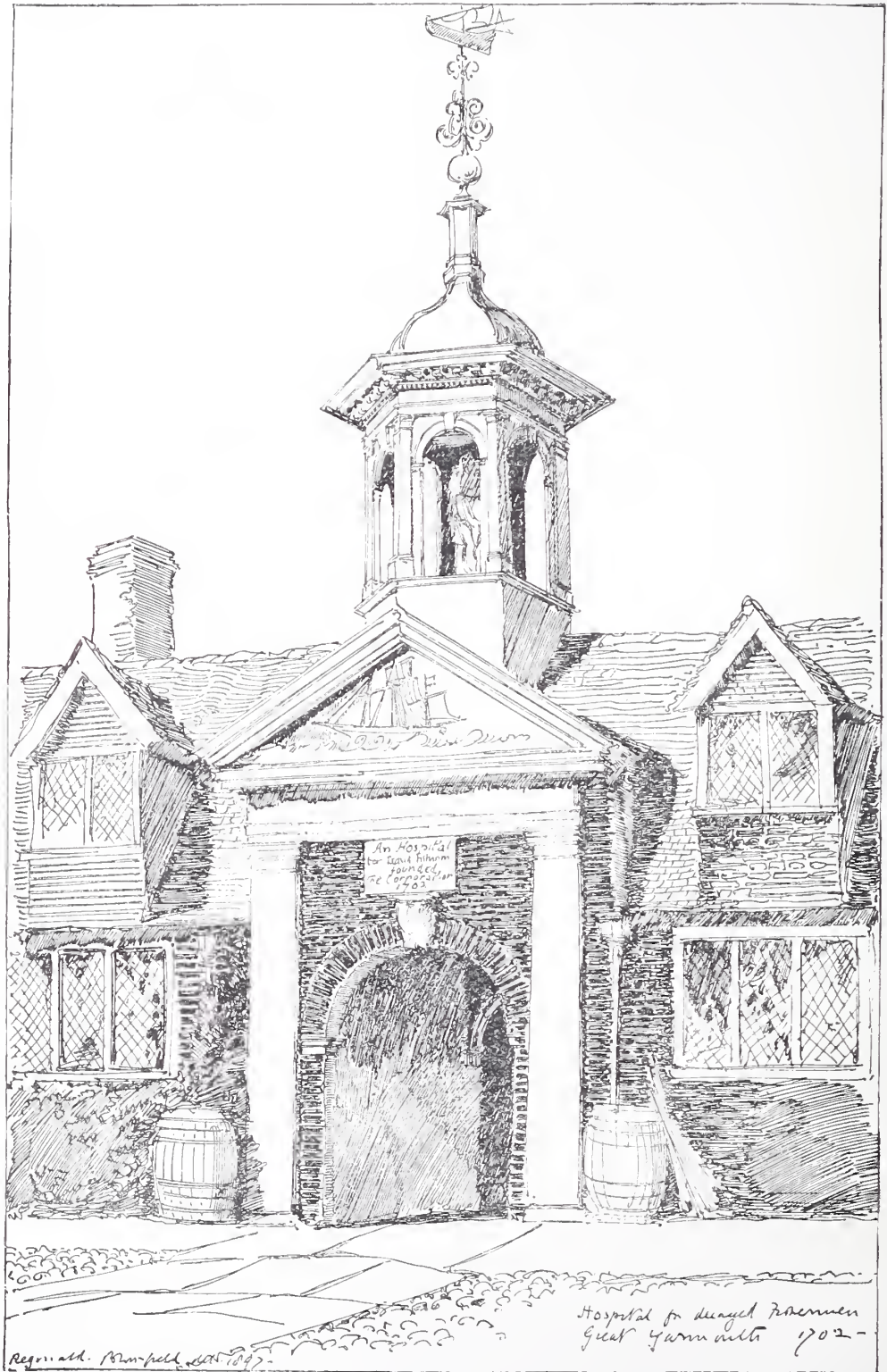


FIG. 1.—CUPOLA TO HOSPITAL FOR DECAYED FISHERMEN, GREAT YARMOUTH.

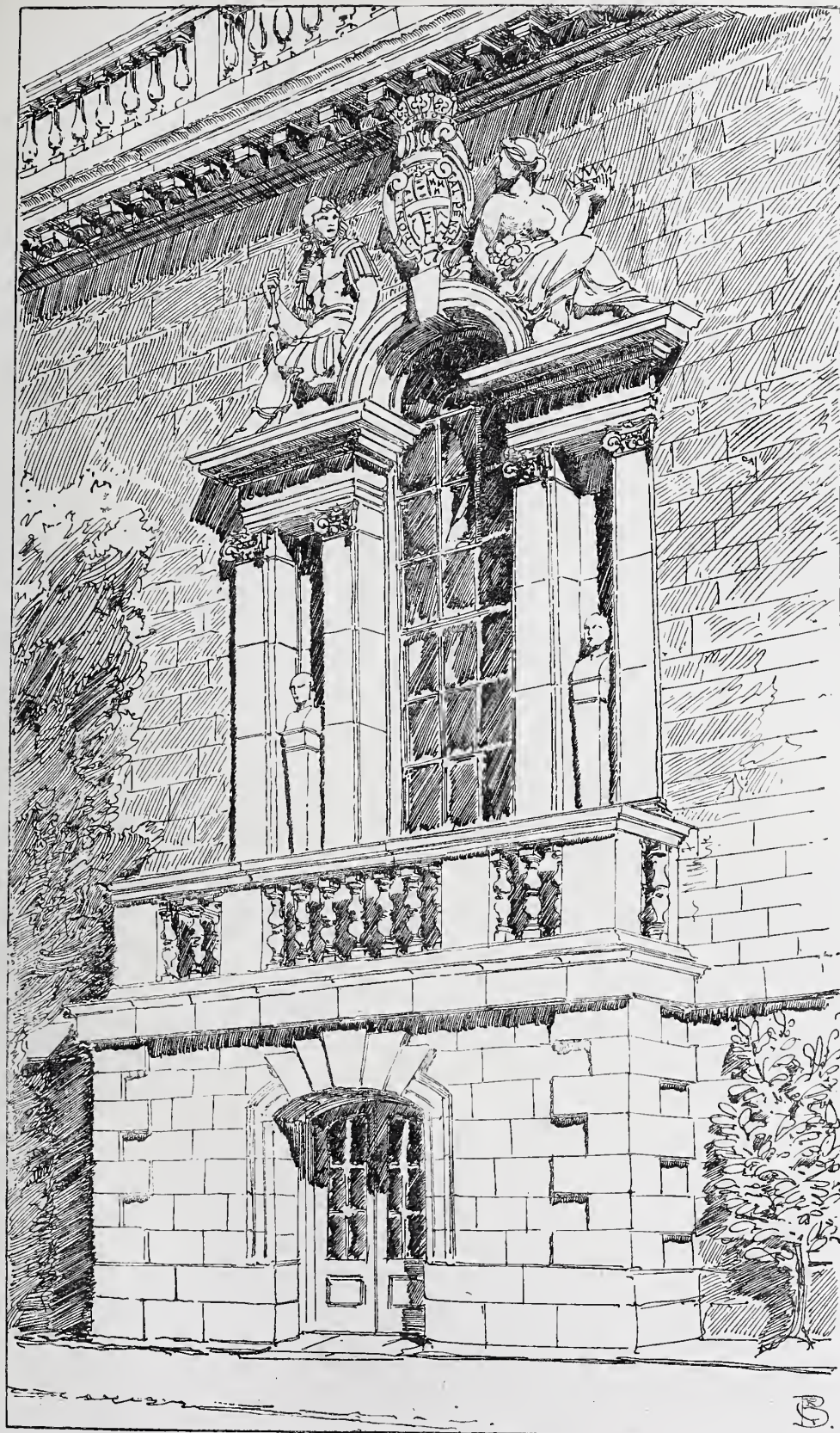


FIG. 2.—CENTRE BAY TO SOUTH FRONT, WILTON.

printed in gold (that is in reversed chiaroscuro) on the outside of the volumes. In other words, Mr. Blomfield's publisher has not insisted on his making a technical treatise into a "gift-book." On the other hand, there is a good deal in the clearness of the writing and the picturesqueness of the original illustrations which will make for the book's popularity among laymen, and add encouragement to the ever green but ever rotten hope that we are going to educate the public into a right understanding of our craft. Mr. Blomfield, to do him justice, makes no such pretence; and probably shares the view that architectural knowledge is not for the million; but he will not be sorry to think that he is opening the eyes of many who are not architects to the existence of design in buildings which they had previously taken for granted as uninteresting and unspeaking facts. This, at least, is a service that an architectural writer may do for the public without attempting the longer and probably futile task of planting knowledge in plots where there literally is not room for it, even if the soil be good. I only mean that architecture is too big a thing to be any man's by-work.

For the amateurs, past and present, who, not content to be lovers only, have proceeded to do violence to the object of their affection, Mr. Blomfield has some hard raps. He goes so far, and many will go so far with him, as to assert that "if buildings of good proportions and correct detail are assigned to amateurs, one may be pretty nearly certain that the name of the real architect has been withheld. It is certain," he says, "that such knowledge as may be acquired by travel and the admiration of buildings, even when joined to a real interest in the art, will not enable the most gifted amateur to design and successfully execute even a correct academical exercise in building. The amount of practical and technical knowledge necessary to such a comparatively simple matter as this is very much greater than the layman imagines." It will be easily understood that these general strictures have, in Mr. Blomfield's book, a particular application to the architectural claims of Lord Burlington, and, in a less degree, to other noble amateurs of the eighteenth century.

The author takes, as the limits of his subject, the three hundred years which start from 1500. He begins by giving some amount of orderly arrangement to the rather chaotic period which preceded Inigo Jones. This he effects by introducing a national classification among the early workers of the English Renaissance. First come the Italians—Giovanni de Majano with his "rotundæ imagines" at Hampton Court; Peter Torrysansy (Torrighiano), whom we used to know in the Recls Chapel; Rovezzano, Englished into Rovesham, who worked at Wolsey's tomb; John of Padua, whose fame may be spurious, and the many artists whose names are forgotten though their works remain. With Elizabeth's reign came the Germans, whose influence is sometimes overlooked; not only in practice, but in precept, was the work of her reign controlled by Germany, or by the designers and writers of the Low Countries. The *Architectura* of J. V. Frisius, published in 1563 at Antwerp, assumed, as Mr. Blomfield points out, the importance which in other periods has been accorded to Palladio and Vignola.

The succeeding chapter, which treats of Englishmen's own efforts in the direction of the new style, is better reading for patriotic students, who will find that the author has conscientiously but not tediously lifted the controversial mists which surround the persons of John Thorpe and his contemporaries. After an interlude devoted to the topic of house-planning in the sixteenth century, and to the state of architectural literature, Mr. Blomfield raises the curtain on his great hero, the immortal Inigo Jones. His hero-worship is warm but not extravagant; and if some of us have a blinder admiration for Wren than Mr. Blomfield can accord to him, we shall still be unprepared to find fault with the supreme influence which he attributes to the earlier artist. There is room for both men in our grateful affections, and few will deny to Jones's memory the tribute which the author pays him of being "one of the most accomplished artists that this country



FIG. 3.—THE TOWN HALL, ABINGDON.

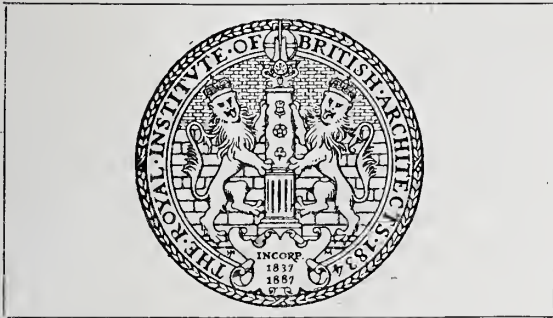
has ever produced." When the voice of Europe proclaimed him "Vitruvius Britannicus," the voice of Europe certainly understated its meaning. One might as well dub John Bright the "English Quintilian." No one but an architect can ever appreciate the true nature of the service which Inigo did for English art. He was not a mere introducer of a foreign method, as many would think. His strength lay, as Mr. Blomfield puts it, "in his thorough mastery of proportion, his contempt for mere prettiness, and the rare distinction of his style"; his ideal was, in his own words, that architecture should be "solid, proportional according to rules, masculine and unaffected."

The chapter on Inigo Jones is followed by one on Webb, Marsh and Gerbier, and this leads up to the very complete and critical chapter on Wren, which closes the first volume. Mr. Blomfield handles Sir Christopher with a cool judgment, and may fairly be said to have exhibited those powers of valuation and analysis without which a short essay on a big man cannot be made either successful or useful. Brief as is the space allotted to the theme, the author shows in this chapter that he writes not as a transcriber, but from full knowledge, and he has clearly been at great pains to realise not merely the result of Wren's work, but the motives which underlay it.

If Mr. Blomfield has been happy in writing of Inigo Jones, he no less enjoys himself among the smaller celebrities who fill his second volume. I am glad to note his admiration for Gibbs. The Radcliffe, St. Martin's Church, and St. Mary-le-Strand are buildings which, I confess, fill me with new astonishment every time I see them. They are works which stand admirably firm against the test of reiterated acquaintance. Honour is done to Vardy by the publication of a very fine photograph of Spencer House. Kent gets his deserts, a measure of praise and blame; the Woods of Bath are brought out of their provincial hiding, and Dean Aldrich, amateur though he was, is allowed without dispute to claim the buildings which commonly bear his name.

In the five closing chapters of the work the author wisely changes his line of action in order to gather together certain aspects of his subject which do not naturally fall under the subdivision by architects' names and by dates. He first follows up his chapter on sixteenth-century planning by a chapter on house-planning in the seventeenth and eighteenth centuries, and next writes upon the architectural literature of the same period; under this head come the well-known *Vitruvius Britannicus*; Aldrich's little known *Elementa*; Gibbs's interesting folios on his own work; Ware's *Book of Designs by Inigo Jones*; Chambers's Treatise; Leoni's *Palladio*, and the *Works in Architecture* of Robert and James Adam. The book which "the brothers" produced on Spalatro is not mentioned, probably because the author is confining his bibliography to works on British architecture, or on general architectural precepts. The "Conclusion," which is a brief and clever survey of the whole period, is preceded by two technical chapters on certain particular trades and materials.

The book, as a whole, has few faults: a little more in the way of reference would have made it more useful to the technical or archæological student; but then it would have been more tedious to the general reader, who will probably be content to take Mr. Blomfield's word. From a scholastic point of view, I object to the architectural use of the preposition "to" meaning "of." That Mr. Blomfield employs in the titles of his drawings such expressions as "cupola to hospital" will go some way towards reconciling me to the solecism, for one cannot read the book, which, take it as you will, is a great and well-accomplished enterprise, without respecting alike the energy and the judgment that have brought it to completion, and the distinguished powers of draughtsmanship and prose which have made of the book, not merely a treatise with illustrations, but a combination of Art and English.



9, CONDUIT STREET, LONDON, W., 8th January 1898.

CHRONICLE.

BRICKWORK TESTS.

Further Observations by Members of the Science Standing Committee, and Discussion on the Report of the Third Series of Experiments.*

The President, PROFESSOR AITCHISON, A.R.A., in the Chair.

Prior to the discussion on the Report at the Meeting of the 13th ult. Mr. Max. Clarke [A.] read the following statement:—

A number of questions as to the manner in which these experiments were carried out have been asked, both in this room and in the building journals, and as yet have received no direct reply. I have collected them in groups, and without troubling you with the actual questions noted, will give you whatever explanations and observations my share in the proceedings and my notes thereon will allow me.

At first the bricks were left for a time in a tank of water, and used as wet as possible. But it being found that this made the mortar so wet that the pier would not remain steady, water was poured over them as they lay alongside the bricklayers, having been wetted previously in the stack.

As regards the character of the brick, the Stocks looked above the average; those broken were used for closers. The other bricks are fairly described in the JOURNAL, and I have at the previous Meetings made some observations on the Leicester bricks and the Flettons.

The sand was Thames sand, all sifted and washed, and all of it of better quality than that used in ordinary work.

The lime mortar was made, as already stated, in the proportion of one of lime to two of sand; the lime was well-slaked stone lime, not ground; made by hand, not mill mortar. The proportions were carefully measured—one to four of cement.

In the first series of piers the work was grouted, so far as I could see, according to the instructions, every third course. In the substituted piers and all sections of walls every course.

* The Report, Tables of Results, Illustrations and Appendices, read or explained at the Meeting of the 13th ult., are printed ante pp. 77-100.

The thickness of joint was about $\frac{1}{4}$ -inch; rather more than that in the Stocks, and about that in the others; so that the brickwork should be nearly four courses to the foot. The highest for the twenty-four courses, as far as I recollect, was $6\cdot1\frac{3}{4}$ for blue bricks; for the majority, about $6\cdot0\frac{1}{2}$.

Frogs were in Flettons and Stocks laid frog upwards. We had no funds to continue the experiments, as suggested, with bricks having frogs and those without them.

The piers were started off the iron plates on a bed of mortar about the thickness of an ordinary joint, and finished on the top with the same; those in cement having cement beds and tops.

In the case of the substituted piers the tops were finished with plaster-of-paris; all perfectly level on the top, with the exception of two in the first series, which were not quite fair on the top.

Sheets of felt were put in between the cross-head and the top of pier; and, as stated in the previous report, we had a lead casting made to level the under-side of the cross-head or girder, which was rendered slightly concave by being over-tested at the Glasgow works where the machine was built.

With regard to Mr. Walker's questions as to the state of weather, or hygrometric conditions, during the building of the first series of piers in July and August 1895, speaking generally it was damp with some heavy rain, only on one day was the sun out and warm.

On 9th, 10th, 11th and 12th March 1896, when the second series was built, the weather generally was damp; there was a good deal of rain—no warm weather or sun. The piers with "A" after the numbers are the substituted ones.

The weather during the building of the third or "Wall" series, 19th October to 13th November 1896, was fine nearly all the time, but not at all warm; damp at times. All the piers were covered with felt on the top to protect them from the beating rain.

With regard to the Gault bricks and piers, it has been asked whether there were any soft bricks in the heart of the piers. Only in one case, and that is noted in the Report on the first series [Vol. III. JOURNAL, p. 342].

In answer to another question: Is it not curious that there is little difference between the starting of failure and final collapse? I reply, not so. In the harder and tougher bricks the signs of failure are not observed until the greater portion of the load is applied. This is to be specially noted in the case of the half blue brick tested by Professor Unwin, which carried a load of 100 tons for some minutes and then failed suddenly as if it burst. It is also to be observed in almost all the piers built of harder varieties of brick.

As to the question about not getting 1,000 bricks laid per day if $\frac{3}{4}$ bricks were used, it is admitted that bricks $6\frac{3}{4}$ inches, if used for closers,

would be more difficult to handle than those $4\frac{1}{2}$ inches wide; but the time taken up in laying them is exceeded at present by time occupied in cutting closers and laying them. At any rate, we do not expect nor do we get 1,000 bricks laid per day in work with any pretension to be called good, and the sooner that is admitted the better.

One other point I should like to call the attention of members to. It has been suggested that there *must* be some error in the whole series of experiments, and that they are therefore worthless. Many people have made this statement at various times on various subjects, although their actual knowledge on the subject has been limited.

Now, if there is an error, what is it? I have given some consideration to the subject for the past week. A contractor having asked my advice as to the failure of some brick piers on which a girder rested, I at once inquired as to the nature of the bricks, and the reply was "red bricks." "Good or bad?" I asked. "Middling," he replied. This I thought was what the average man would say in the future. So I thought it worth trying how our experiments would work out against those made at Watertown, from the tabulated statement given by Professor Unwin in the first Report [Vol. III. JOURNAL, pp. 351-52]. We there find it stated that the crushing load of "Bay State medium bricks" was 730 tons per square foot, which is about equal to that of the average of our best—viz., Staffordshire blue bricks. The crushing loads of two piers built of Bay State bricks are given. One, built in 1 of Portland to 2 of sand, gives a crushing result of 115 tons per square foot, and the other, built in 1 of Rosendale to 2 of sand, gives a result of 126 tons per square foot.

Turning to our Table, you will see that the sections of walls built with blue brick in cement give a result of 139 tons and 131-tons respectively, which sufficiently approximates to the American result to merit confidence in the series.

Another point I would like to call your attention to is that, taking the crushing loads of the hard bunt face bricks in the American series and the crushing loads of piers built of them, a simple proportion sum brings out a result which is approximate to our actual result.

So far as I know, this American series of tests is the only one on any scale which compares with our series, in giving enough particulars by which the strength of any bricks may be compared with the strength of the piers, from experiments made with other bricks; but this is perhaps anticipating the conclusions to be arrived at as a result of the whole series.

I have dwelt before upon the great difference in the quality of the workmanship. The note made in my diary of the work on 25th July 1895 reads thus: "The closers in the centre of the piers were very roughly cut or broken, just as would occur in

a brick pier where ordinary contract work was being done. Instructed the men to grout the work every third course."

In the substituted piers and the lengths of walls we report upon to-night, I not only gave instructions that the work was to be built in the very best possible manner, regardless of cost, but either I or some other member of the Sub-Committee saw most of it done, besides having a competent clerk of works upon the spot all the time the walls were being built, and the results seem exactly what might have been expected.

So far as I can see, the great difference between this series of tests and any that have been carried out before, is that the size of the blocks tested have been very much larger, and, so far as the first series go, built in an ordinary manner, but still very much better than one would get in ordinary practice. The result goes to prove that the statement given in Hurst and Rivington, as to the crushing loads of brickwork, only applies to the very best quality of work and materials; and this is fully borne out by the results given on this and on previous evenings. We now know that a blue brick pier, if built in a first-rate manner, will take 50 tons per foot without any signs externally of failure—how long it will remain so is still a question.

I consider the tests also prove that we should never use Stocks, so-called, for large or lofty buildings subject to heavy loads. To my idea they are quite unreliable, and only fit for small works. In any building where Stocks are being unloaded, no one can help observing the very large proportion which are broken in transit; and yet we put in our specifications, "no broken bricks are to be used." The real way to deal with the matter for important buildings is to forbid their use at all.

No one would have thought how very much to the point the remarks of the President this day last year would be to-day as to the action of fire on mortar and cement, and I think it would be of service to us all, if, at the inquiry now being held as to the fire in Cripplegate, it could be ascertained which buildings, if any, were built in cement, and whether they suffered much more damage than those built in mortar.

One small point has been suggested by persons not connected in any way with the experiments—viz., that the gauge was in error. This is disposed of by the fact that, at the suggestion of Professor Unwin, both the gauges used were tested on the completion of the last series, and the results show that, although neither was absolutely correct throughout its range, the inaccuracies were not sufficient to cause any material difference in the results.

You will observe that in the above remarks I have only dealt with the practical side of the question. On the scientific side I say nothing, as

I consider having the advice and assistance of Professor Unwin on the whole matter is quite sufficient guarantee against error in that direction.

There are members who think that if the load had been applied at the top of the pier instead of at the bottom the result would be very different. No answer, I am afraid, would satisfy these gentlemen. Unfortunately, I understand the machine has left the Docks, so we cannot offer to turn it upside down for their benefit.

The Sub-Committee, I imagine, quite recognise that it would be very satisfactory if tests could be made with the cubes of brickwork, as suggested by the President last December; but not only are the funds exhausted, but a balance is due, although the original sum stated—viz., £200—has not yet been spent; and, personally, I have found that seeing to the work, taking and preparing the photographs, occupies so much time that I can ill afford, that I should not care to undertake another series under the same conditions.

I only wish to bring one other matter before your notice, which is, that in dealing with tests of single bricks great care must be exercised. I was so much struck with a paragraph in the *Builder* of the 4th December, which was the statement of a manufacturer that the crushing load of a Fletton brick was 230·7 tons, that I at once asked Professor Unwin if he would test two more Fletton bricks to confirm the crushing load given on page 100 [JOURNAL, Vol. III.] of the second report, which was as follows:—

Single brick	. . .	50·23 tons crushing.
" "	. . .	50·95 " "

The results of the two Professor Unwin was kind enough to test on the 9th December were:—

Single brick	. . .	44·52 tons crushing.
" "	. . .	46·11 " "

which sufficiently confirm the original figures, and leave no doubt that it is a very exceptional Fletton brick which will stand a crushing load of 230·7 tons.

MR. P. GORDON SMITH [*F.*], Chairman of the Science Standing Committee, said that additional interest attached to the last series of tests by reason of their having been made upon lengths of actual wall as distinguished from ordinary brick piers. The results, he thought, answered all their expectations. He wished the Committee had had a little more money to carry the experiments a little further. He asked the Meeting to put on record once more their renewed thanks to Sir William Arrol for the great help he had afforded the Committee, to Mr. Donaldson, the Engineer of the Dock Company, and to those members of the Committee who had given up so much time in looking after the experiments.

PROFESSOR UNWIN [*H.A.*], F.R.S., said they had come together to record the completion of

work which had taken something like three years between the conception and carrying out, which had involved a good deal of co-operation between many people, and which he was quite sure would prove to be practically of very considerable value. Although he himself had not been much down at the Docks, he could say from observation that some of the members of the Committee had given up much time to the proper carrying out of the experiments. There was one point on which he might say a word. The arrangement of the experiments was carried out by a Sub-Committee under the direction of the Science Committee, and a great many members both of the Sub-Committee and of the Science Committee had taken part in carrying out the tests. In only one single respect was there a little difference from what in his experience had hitherto been the ordinary procedure: there was really no report which could be called the report of the Committee. The report before them had been made by two members of the Committee. He did not complain of that arrangement. It had saved some trouble, and he should be the last to suggest that Mr. Street and Mr. Max. Clarke had not been the two of those concerned in the experiments who had given most time and most trouble to the work; but he was obliged to say what he had said, because he was going somewhat to criticise the way in which the results had been put forward. Personally he would rather have discussed the analysis of the results in Committee beforehand. As this was the last of the reports, and as he supposed the last report to appear in the Institute JOURNAL, it was rather a pity that some matters to which attention had been called had not been noticed. To take a small matter first: after the second series of tests, analyses were made of the lime mortar and cement mortar used in the piers. He had pointed out a year ago that there were some errors in the heading of the table containing those results. He thought some reference should have been made to the fact that those headings as they stood were nearly unintelligible. To come to a more important point: a year ago he objected to the tabulation in the Report of the results of the first and second series of tests, and it might have been well if in this final report some attention had been given to that point. He thought the way in which the results were put forward a year ago completely confused the teaching of the results. He would recall a little of the history of the three series of tests. Quite at the beginning, before anything was built or any actual arrangements made, he, as an old experimenter in work of the kind, drew attention to the necessity, in making the tests, of an exact supervision of the quantities of sand and lime used in making the mortar, and of the actual way in which the mortar was made and used. He was told at that time by some colleagues, who had really more

interest in the subject than he had, that that was not in the least what they wanted, and that they wanted to test piers made in the most ordinary way, and that therefore it would be improper to take any special care with these points. The result was, that the first series of piers were built in a very ordinary way, and those gave, as he would presently show, not very good or uniform results. It was even now a little impossible to tell exactly what was done at that time. The Committee themselves were so far dissatisfied with the results that they had certain piers rebuilt. The second series of piers was built with much more supervision of the work of building, and especially of the way in which the mortar was mixed and used. He understood at that time that in the building of the second series of piers better sand was used than in the building of the first. Mr. Max. Clarke had written to him afterwards, saying that he thought he (the speaker) was mistaken; but even Mr. Max. Clarke did not seem to be quite certain of the matter. Whether the same sand was used or not, there was no question that the mortar in the second series of piers was very much better than the mortar in the first series. The mortar in the first series after three months crumbled in the hand—both the cement and the lime mortar, and he was quite certain that a very much better mortar was used in the second series of piers than in the first. When, finally, there came to be built a third series of piers in the shape of short walls, a quite new and a very much better quality of sand was obtained for making the mortar. A very small sample of this sand was sent to him, out of which he could just make two cubes for testing, but not enough to get average results, and he had handed in the results of those tests [see p. 100 *ante*]. The tests of these two cubes of new sand gave a better result than cubes made with the same lime and cement and with the standard sand used in testing, so that there was no question whatever that the third series of piers were built with excellent sand. From what he had seen one day at the Docks, the mortar, also, was very much better than the mortar in the first series of piers. In the third report there was absolutely no reference to the fact that a quite new and different sand was used in the mortar employed in building the third series of piers. He attached very great importance indeed to the quality of the mortar, and he believed that a very large part of the difference of the results in the different series of tests which had been obtained was not due even to the fact that there were a few soft brick closers in hard brick piers, but was due almost exclusively to the difference in the quality of the mortar. So much for the history of the matter. Before going into a discussion of the results, he would say a word or two about the general bearing of

the results, first touching upon one or two points of the report. The report stated: "The Committee do not propose at present to give any fixed rules based upon the results or information gained by these experiments, as it is hoped that the Council of the Royal Institute will sanction the preparation of a careful analysis of the facts contained in the three Papers, and issue the same in a suitable shape." Now, he thought if the report had come before the Committee for discussion first, he should have said that the Committee were abdicating their proper functions in refusing to discuss their own results. Those who had carried out the experiments, and who had got in mind all the data, were the best persons, initially, at any rate, to draw conclusions from the results. Happily the writers of the report had not been quite consistent, because they had proceeded to draw some conclusions. He had not much to dissent from in the general way in which they had summed up their results. There was one conclusion, however, which really depended entirely on tests of his own, but which he certainly should not have drawn. Two Staffordshire brick piers gave way with somewhat different loads, and that was explained by saying that the bricks of which the 27 inch by 18 inch piers were built were very much stronger than those from which the 18-inch square piers were made, the bricks tested failing respectively at 779 and 701 tons per square foot. Now the 779 and 701 were figures obtained by him in the laboratory at Kensington. The 701 was the average of five or six tests of five or six bricks from one lot, and the 779 was a single test of a single brick taken from a second lot. He should not have drawn the conclusion from the test of a single brick that the second lot of bricks was stronger than the first. It was only a small point, but it was just one which experience in testing made one careful about. The Committee, again, while disclaiming the desire to set down any fixed rules, had drawn up what really amounted to fixed rules about the strength of brickwork, and they had laid it down that stocks in lime mortar would carry so many tons per square foot, and so on, and they said that they had got those figures by taking one-fifth of the crushing loads which were observed in the tests. They ought to have said two things: first, that that would not in any case apply to piers less than three months old, which was a very important point, because in a great many cases it was not the strength at three months but the strength at one month which had to be looked to in deciding whether brickwork would stand the work it had to do or not. They ought to have said one thing more, namely, that those figures were deduced entirely from the second and third series of tests. So much in the way of criticism. There was one point which he was sorry to have to explain now, because he had explained it a year ago privately.

If they simply took the results and tabulated them in the most simple and straightforward way, they would be found much less anomalous than at first sight they appeared to be. He spoke a year ago as to the anomalies of the experiments, and he was partly misled by the way in which the results were tabulated. He had drawn up a table to show

second series. The stock bricks in the first series broke at 10 tons per square foot, and in the second series they carried 18—that is, they had a better built pier, a pier with a better mortar in it. There was no question about the mortar being better. The gault bricks built in cement at 3½ months carried in the first series 17 and 18 tons, and in

CRUSHING STRENGTH IN TONS PER SQUARE FOOT.

Mortar	Age, Months	Stocks	Gault	Fletton	Leicester Red	Stafford Blue
Single Brick	—	84	189	221	362	780
Sand Pier	—	—	—	—	15	—
First Series						
Lime	3½	10·4	21·9	—	30·7	74·3
	10	12·5	21·6	—	34·1	73·7
Cement	3½	14·9	17·8	—	58·5	72·8
	10	19·7	30·0	—	50·4	82·5
Second Series						
Lime	3½	18·3	—	—	—	—
Cement	3½	—	49·6	—	86·4	103·1
Third Series						
Lime	5	18·6	31·1	30·7	45·4	114·3
Cement	5	39·3	51·3	56·3	83·0	135·4

that the discrepancies and anomalies were not nearly so great as they appeared to be in the table of results of the 18-inch piers in the last Report. In his table he had kept together all the piers of the first series which were made at one time; all the second series made at another time, and all the third series which were made at a third time. Taking the first series alone, they were bad results on the whole, but there were no serious anomalies about them. At 3½ months the stocks in lime carried 10 tons per square foot, and at 10 months 12½ tons. In cement at 3½ months they carried nearly 15 tons, and at 10 months nearly 20. Those were perfectly consistent results. With regard to the harder brick, the gaults in lime carried 21 tons per square foot, both at 3 and 10 months, the difference there being probably that the second pier was not quite so well built. There were no great anomalies in the other figures in the table—17·8 and 30; 30 and 34; 50 and 74; and 73 and 82; the results were not absolutely regular, and there were anomalies, but there were not differences very unexpected in testing rough materials like brickwork. After the 3½ months series was completed, it was decided to build some piers like some of those previously tested to see if better results could be got. He did not quite know why certain particular piers were selected to be tested again, but at any rate there were the results of the four piers which were built in the

second 49. The Leicester reds carried in the first series 58 tons, and in the second 86. In the first series the Staffordshire blues carried nearly 73 tons, and in the second series 103. It was obvious on the face of that that the whole of the piers in the second series carried about 50 per cent. more than those in the first series. That he attributed entirely to the care taken in the preparation of the mortar; and at any rate, whether that were a true explanation or a false explanation, it was quite clear that the results on the first series must not be mixed up with those obtained from the second series. The mischief in the table in the Report on the second series of tests was, that two series of quite distinct results were averaged together. Averages had been taken, one of No. 1 series and one of No. 2; next to that stood two of No. 1, and in another case two of No. 2, so that two quite distinct series of results had been mixed up and averaged indiscriminately. Coming to the third series of tests, there was no question about the mortar being very good in the third series; it was made with better sand, and no doubt was very good mortar. The third series agreed almost exactly with the second, wherever there was a possibility of comparison. The stocks in lime carried 18·3 in the first series and 18·6 in the second, with a little difference of age. The gault bricks carried 49·6 in the first series in cement and 51 in the second series. The

Leicester reds carried 86 in the first series and 83 in the second—a difference of no moment in an experiment of that kind. The Staffordshire bricks in cement carried in the first series 103 and in the second series 135—a difference, but not a very serious one. The third series agreed entirely with the second series, and within the limits of ordinary errors in such experiments it might be said that the second and third series gave identically the same results.

MR. WILLIAM WHITE [F.], F.S.A., expressed his great gratification at hearing Professor Unwin's explanation. There was not nearly enough allowance made in ordinary work for its stability, both as to the quality and quantity of the mortar and the mode in which it was made. In such tests it was absolutely necessary that all the circumstances should be as equal as possible throughout. It was only by testing those special things—the tests made at one time, the tests made at another time, and the tests made at a third time—all separately, that any proper reliable average could be obtained.

MR. WILLIAM WOODWARD [A.] said that Professor Unwin's observations rather confirmed the remarks he (Mr. Woodward) made last year as to the unreliability of the tests made in the first instance. Professor Unwin had shown them that the second and third tests were practically alike, and if they could only secure, as Mr. White had suggested, precisely the same conditions as regards quantity and quality of the sand, the amount of mortar and the thickness of the joint, the character of the grouting, and the quality of the brick—if they had the results as regards the size of the pier, and as regards the weights placed upon it, and the time occupied before the test was made, he felt sure that the efforts of the Committee, for which they were all exceedingly grateful, would be certainly some of the very best efforts the Institute had sent forth. He was sorry that the funds of the Institute were not sufficient to have resulted in a complete test. He thought that after the valuable explanations of Professor Unwin and the labours of the Committee, if it were properly put to members, sufficient funds would be forthcoming to enable a fourth test to be made, which would give results enabling them properly to gauge what should be inserted in their specifications with regard to construction and materials. He thought that funds would also be forthcoming for the purpose of further experiments of the greatest value to architects—experiments to be confined simply to granite, Portland stone, Red Corsehill, and Bath.

MR. DOUGLASS MATHEWS [F.] asked why one-fifth of the crushing load was taken? He was under the impression that a fourth was always taken, and he could see no reason for taking a fifth.

MR. BRUCE J. CAPELL [A.] said that Professor Unwin had said that he did not understand

exactly on what principle, in the second series, particular piers were taken for testing. He (the speaker) had only his recollection of the papers read on previous occasions, but he thought it was accurate, and he believed, with regard to the pier of stock brickwork in lime in the second series, it was explained to them that on the first occasion when the pier in lime was tried, the water was admitted somewhat with a rush, and the pier crushed with the rush, and in such a manner as gave no opportunity for exact measurement, or exactly making the test. The second pier that was tried was one of gault bricks in cement, and he thought it must be pretty obvious why they tried that. It seemed to him rather a considerable anomaly that a pier built in cement crushed at 17·8 while a similar one in mortar crushed at 21·9, the one pier thus crushing with 20 per cent. less pressure than the other. With regard to the others there seemed to be somewhat similar anomalies. They perhaps did not go beyond the margin which might be allowed for the purpose, but they were rather striking. The pier built of Leicester reds, built in cement, crushed at 86·4 in the second experiment, whereas the previous one, one at ten months old, failed at 9 tons lower than the one at three and a half months old; not a thing that most of them would have expected. In the case of the Staffordshire stone, they found that both the Staffordshire blue bricks, the one at all events in cement, failed at a lower pressure than the one in lime. He did not speak for the Committee at all, but he thought it reasonable that they should make the further experiments of the second series, as they seemed anomalies to an ordinary professional man—one not accustomed to scientific experiments. The second series, Professor Unwin said, showed no anomalies compared with the third—showed very little difference, in fact. The second series compared favourably with the third in many respects, and the second, he (the speaker) thought, were built with the same sand as the first experiments, the third being built with a highly superior article. If that were so, then the second experiments with the inferior mortar seemed to be pretty well on all fours within a reasonable margin with the experiments where they had the best possible mortar.

THE PRESIDENT said that it seemed extraordinary that when experiments were made on brickwork in mortar, the mortar used was such that no architect who had any acquaintance with building would ever employ, although it was employed in the last century. No one would now think of using mortar for any work where strength was wanted that had only 2 of sand to 1 of lime; they knew it was about of equal value to mortar with one-fifth of lime, and that mortar with 3 of sand to 1 of lime was about twice as strong as when it had 2 of sand to 1 of lime, and there was very little difference in strength between mortar composed of 4 of sand

and 1 of lime and that of 3 to 1. The variations in experiments must always be great, because materials vary, whether natural or artificial. Bricks, for instance, are never perfectly homogeneous nor alike; so that if a proper average were wanted, a very large number of the same sort of bricks must be experimented on. He was not quite so sure as Professor Unwin seemed to be that the Committee were wrong in having in the first instance the piers built in ordinary work; for, at any rate, it gave some criteria as to what percentage must be allowed for ordinary work as compared with that built for experimental purposes. It was easy to get hold of a good bricklayer, and if he were told that the pier was wanted for experiments in strength, get him to lay the bricks well and to fill all the cross joints; but if he were told that he must get the pier done in as short a time as possible, he never thought of thoroughly filling in any of the cross joints. Although there was some little use in grouting, he thought the principal use was that some damp was left in the brickwork so that the mortar might crystallise instead of going to powder. Vitruvius told them to be very careful in building rubble walls that there was plenty of mortar, because, he said, if they did not attend to that the core absorbed all the water out of it, and in a very few years it would be found to consist of stones and dust, while if there were plenty of mortar, then the mortar would get harder than the stone. That all knew who had seen houses of the last century pulled down; there was no adhesion whatever in the mortar, and directly the weight of the roof was taken off the bricks could be picked out with the fingers. Architects and others were under a very great debt of gratitude to the Committee for the trouble they had taken. The results, especially in the harder sort of brick, were being constantly used now by persons engaged in large building operations, and however unfortunate might be the results as far as comparison went, still there was something to go on, whereas before these experiments there was a great deal of guesswork. The tendency of the present time was to base all their figures upon careful experiments. People did now what Machiavelli did for moral action; he did not trouble himself about what ought to be, but what was. Now if architects wanted to know what a thing would bear, they tried it; they took a considerable number of similar experiments and struck an average; by these means could be seen what picked specimens would really bear, and by that method an approximation was obtained much nearer to what was wanted than could be got by any other means. He concluded by proposing a vote of thanks to the Committee for all the trouble they had taken.

MR. MAX. CLARKE [A.], in reply, said it was an absolute fact that the first and second series were built with absolutely the same materials out

of the same heaps. For the third series Messrs. Cliffe sent a particularly good sample of sand, which on the morning of the 6th November 1896 was exhausted, and he went to the dock foreman, and asked him if he had any sand with which to finish the piers, and he said he had. He found it, however, so very inferior to what they had been using, that he telegraphed to Mr. Street that the new sand was very inferior, and asked whether they should proceed or wait for good sand. Mr. Street wired to wait good sand. The work was stopped, and Messrs. Cliffe sent another consignment of sand which was not quite so good, but very nearly. That was the explanation as to the sand.

MR. WILLIAM C. STREET [F.] said that, with regard to Mr. Douglass Mathews's question, the figure of a fifth of the crushing pressure was suggested in the Report, because it was considered that the compression of the mortar under that amount of pressure indicated that the brickwork was then undergoing a strain quite as large as it ought to bear. They knew very well that very much heavier weights than a fifth were placed. With regard to the results generally, the Committee only made a report that evening upon the third series. They hoped that they would have Professor Unwin's assistance in preparing the concrete arrangement of the whole three, and the Committee were much indebted to him for his remarks.

THE PRESIDENT observed that the usual way the strength of materials was judged (although he was sorry Professor Unwin did not quite agree with him) was to take the weight borne when the material showed the first sign of cracking. They then knew that it was loaded just beyond what it would bear, and from that could be inferred that one-fourth of that load was a sufficiently safe load. The result spoken of in the Report seemed to have been taken on the squeezing of the mortar.

International Competition for the Erection of an Orthodox Cathedral at Kronstadt.

Mr. V. Schröter (*Hon. Corr. M.*), of St. Petersburg, writes that no adequate designs have been sent in for the International Competition for an Orthodox Cathedral in Kronstadt, and that in consequence, a second competition will be held on the same conditions as before. The Cathedral, for the especial worship of sailors, and hence described in the conditions as a "Marine Cathedral," is to be built so as to hold a congregation of 4,000 people, and is to cost a maximum of 700,000 roubles. Four designs will be premiated; the first at 5,000 roubles, the second at 2,500 roubles, the third 1,500 roubles, and the fourth 1,000 roubles. These four premiated designs will become the absolute property of the Building Committee of the Russian Ministry of Marine.

A translation of the conditions will be found in the Library of the Institute.

THE EXAMINATIONS: REVISED SCHEME.

AN EXPOSTULATION.

The Report of the Board of Examiners "approved and adopted by the Council," as printed in the *JOURNAL*, p. 62, cannot be allowed to pass without comment.

As a report on so important a subject, it is singularly wanting in explanations or reasons for the changes proposed, and does not even set out the difference between the present system and that proposed, leaving such difference to be ascertained by the curious, by laborious comparison of the new with the present programme. This regrettable deficiency will, so far as the information given permits, be supplied in the following observations.

The only ground assigned for the proposal is the belief that "some simplification is desirable, particularly such a rearrangement of subjects as will prevent their overlapping, and a modification in the work required as 'Testimonies of Study'"; but not one word of reasons or explanation is vouchsafed to justify such belief.

The description of the Examinations and advice to applicants in the *KALENDAR*, pp. 235-240, clearly explain the aim and scope of the Progressive Examinations; and, unless the words of the Summary in this respect, are intended to have bearings and limitations, other than those ordinarily accepted, the paragraph expressing the opinion of the Board would appear to be superfluous.

The separation into Art and Science Sections—which, without any reason assigned, "it is thought undesirable to retain"—is a perfectly natural division of subjects, affords to students the opportunity of reducing the strain of sitting for the complete examination on one occasion, by taking one or other of these divisions separately, and thus being able to give to that in respect of which they may be the less informed some months of exclusive study (*vide KALENDAR*, footnote, p. 250).

The present programme was framed on the basis that the Intermediate should be taken not more than two years after the Preliminary, and the Final not later than three years after the Intermediate.

For the Intermediate a satisfactory knowledge of the Orders, of Classic Ornament, of English Architecture from the Conquest to A.D. 1500, and of the characteristic mouldings and ornaments of each period, and also of the subjects covered by Elementary Construction, is required.

For the ordinary student with the usual defective elementary education, the thorough acquisition of these subjects, to form the basis of further study, will fully occupy the time at his disposal; and the mastering of these subjects is of primary importance in teaching him how to learn to study

and to cultivate those habits of accuracy and investigation essential to be acquired.

To these subjects it is actually proposed that "The Outlines of the History of Mediæval and Renaissance Architecture in Europe" should be added. If to be dealt with simply as "Outlines," but little advantage could be derived, while the wide range of the subject renders it most undesirable to be included within the curriculum of an examination intended to test preliminary training: nor, although "Outlines" may be used as a qualification, can it be properly classed as an "Elementary Architectural Study," and to its inclusion in the Intermediate there is the greatest possible objection.

The practice of "Sketching in Perspective of Details and Ornament" should be encouraged in every possible manner, and cannot be cultivated at too early a period, should be continued to the latest stage, and be fully developed in the "Final."

The proposal to give more weight to the Testimonies of Study is excellent, and, both by commendatory distinction and marking, will encourage the student to endeavour to maintain the high standard already attained in the Intermediate with so much advantage to the student.

In the Intermediate Testimonies of Study—in place of "one sheet of detail of mouldings and ornament" relating to the two sheets of mediæval architecture, and "one sheet of ornament, free-hand drawing from the round in outline"—the details of mouldings and ornaments relating to the mediæval examples are to be included in the two sheets of such examples, and there is to be "one sheet of mediæval ornament freehand drawing from the round in outline."

For the two sheets of joiners' work, one sheet is substituted, thus reducing to nine sheets the eleven sheets of drawings now required, but not actually reducing the labour of preparing the Testimonies, since the details and ornament which would have been drawn on separate sheets will now be crowded on to the general drawing, if indeed they can be satisfactorily squeezed thereon.

It is in the Testimonies of Study for the Final that the most serious changes have been made.

For *four* sheets of studies, viz. :—

"A subject of classic architecture, shaded in sepia, Indian ink, or hatching, according to the rules of sciography";

"A subject of classic, mediæval, or renaissance architecture, in outline or shaded";

"Two studies of ornament from the round, shaded or hatched—one classic or renaissance, the other mediæval";

there is substituted—

"A study of ornament from the round, shaded."

For the two sheets of diagrams of constructive masonry, and two sheets of construction of roofs, floors, arches, retaining walls, &c., there are substituted—

“One sheet of diagrams of constructive masonry, and one sheet of diagrams of a roof-truss of iron or steel;”

while, alas! the optional work of “complete drawings from actual measurement of a groined vault of any period between A.D. 1100 and A.D. 1500” is omitted, a subject the thorough study of which, optional though it be, would be of the highest value in the education of an architect.

The subjects eliminated are all within the range of “advanced architectural studies,” and should, in the ordinary course of his studies, be prepared by the student, without reference to the Examination at all, and if not so prepared his education is in so far defective or neglected. The elimination of those subjects from the programme is, therefore, to be greatly regretted as a retrograde step, which may be taken as a declaration that such studies are superfluous and unnecessary.

Although it is proposed by the report that in the Final Examination “the candidate’s attention should be concentrated on those subjects which will claim his care in the practice of architecture,” there is not any indication of the meaning to be attached to these words, and this apparently will not be disclosed until “the Revised Forms and Programmes may be had on application to the Secretary.”

It is to be regretted that changes so closely affecting the principles of architectural education should have been in so bald a manner published to the members of the Institute, and the public at large, as settled and accomplished facts, determined on by the Council, and to come in force in June next, without one word of explanation of the reasons or necessity (should such exist) which may be supposed to justify the changes in a programme, the result of long consideration and discussion before the Progressive Examinations were established.

The Council may be within their rights in so proceeding, without taking the general body into their confidence; but it would certainly have been desirable that an expression of opinion on the proposed changes should have been elicited before they were announced as accomplished facts.

The instructive papers respecting the School of Architecture of Columbia University in New York, recently presented to the Library by Professor W. R. Ware, show a remarkable advance in the training of an architect, in striking contrast to the retrograde action approved by the Council, and when it is understood that in the United States there are certainly eight other universities—viz. Cornell, Illinois, Philadelphia, Cambridge, Boston, Providence, Syracuse, Bethlehem—in which similar perfect systems of architectural training are in operation, the regret at the course taken must be much intensified.

In the first years of the “Intermediate” there was a great desire expressed to cut down the

requirements and make it “easy.” These efforts were successfully resisted, with the happy result shown by the excellent work now produced for that examination, for which, had the then advocates of “simplification and prevention of overlapping” had their way, there would have been no inducement, and the present high standard would not have been attained; but the lesson of this experience has been disregarded, with the result now to be so much deprecated.

ARTHUR CATES.

* * * With reference to the foregoing, the Board of Examiners have sent the following Memorandum:—

The sole object which the Board of Examiners had in view, in revising the scheme of Examinations, was to remove any features which they had reason to believe, from representations made to them, deterred Students from presenting themselves. Although, as Mr. Cates says, “The programme was framed on the basis that the Intermediate should be taken not more than two years after the Preliminary, and the Final not later than three years after the Intermediate,” it has been found, practically, that a large number of candidates do not come up for the Final Examination till they have passed the stage of pupilage and have become paid assistants, in which position it was extremely difficult for them to find time for the large number of testimonies of study required for the Final, and for the reading necessary to answer satisfactorily the History papers of this Examination. Furthermore, the Final Examination is the one by passing which specially exempted candidates who are chief assistants or architects in practice have been enabled, since 1894, to qualify as candidates for the Institute Associateship, and it is a positive fact that the History papers in this examination formed a stumbling-block which in several cases was never surmounted. The Board therefore thought it undesirable to divert the senior candidates from their practical work of which the Final Examination is mainly the test. The Board felt that the necessity for some alteration was forced upon them, but they were most reluctant to interfere with the existing scheme, and it was only after long and numerous discussions that they advised the Council to adopt the revisions which they have proposed.

On behalf of the Board of Examiners,

(Signed) ALFRED WATERHOUSE,
Chairman.

THE HISTORIC DEVELOPMENT OF ARCHITECTURE.

Abstract of a course of lectures being delivered this Session before the Glasgow School of Art.

By W. J. ANDERSON [A.].

I. (LECTURES I.-VIII.).

IN opening his course of lectures, Mr. Anderson attempted a consideration of the value of an historic aspect of architecture, pointing out what it might and might not teach. The lectures were only a small part of the traditional training of the school, a training which proceeded on the principle of putting a better tool into the hand of the younger man. If, after attending these lectures, students found that the casts of ornament and figure did not in their minds fall into their right place in their historic succession, and in the building for which they were designed, if they had no keener interest in the mediæval church and castle, and in their sketching and measuring of them, no greater facility in graceful and scholarly design, the lectures were not fulfilling the purposes for which they were planned. Referring to C. O. Müller's classification of the stages (1) imitative or artistic, (2) antiquarian, and (3) scientific, through which our attitude to ancient art had passed, the lecturer said that another was in view, in which we should learn by fuller and broader knowledge to be ourselves; not to devote over-much attention to one page of architectural history, as revivalists had done; but to receive the larger tradition in a fuller consciousness of it, which could only come through an intelligent and sympathetic apprehension of all past achievement in relation to its surroundings. And this, under present circumstances, was by no means so difficult or huge a task as was commonly supposed. The student who could in some degree apprehend the historic significance of a type of design was for that very reason the less likely to misapply it or feebly copy it. At the same time students were reminded that this was only one side of their training, and counselled in their office work and the design competitions to develop the faculties of initiative. The remainder of this first lecture consisted of an outline of the long history of Egyptian architecture, illustrated by about a hundred photographs, plans, and restorations. The treatment was general and introductory, for Egyptian architecture covered a period of time greater than that to be dealt with in the succeeding twenty-four lectures, and in its permanence suggests analogies with the predominance of the Romano-Greek style in Europe down to the present day.

The second lecture, delivered on November 8th, was entitled "The Mycænic Age in Greece," in which period are discovered the true origins of European architecture. Comparing the palaces of

Tiryns and Nineveh in their plan and construction, it was seen how the Achaian race, at least three hundred years before the great palace building era of Assyria, were in advance in their planning and their columnar and peristylar construction. From the discoveries of Schliemann and Dörpfeld it had been clearly demonstrated that to them and not to the Dorian conquerors was due the invention of the Doric entablature, and nearly every characteristic decoration. In the supersession of this primitive civilisation, the Dorians threw back for centuries every artistic development, leaving the expatriated Achæians to work out their destiny in a larger way in the New Ionia to which they were driven. The acropolis and domed tombs of Mycæne, the sculpture of the period, and the primitive decorative forms which survive in later work, were all analysed and illustrated. Apart from its interest as the prototype of Hellenic architecture, the development is of value as an example of a logical style of wood construction of a highly architectural character, which was also copied in stone. The form of the Mycænic column, for example, is that of the legs of our furniture down to the present day, and was probably abandoned by the Greeks only when the wooden entablature was converted into a stone one, and a stronger form required. To the Mycænic also we owe the retreating faces of an architrave, composed originally of wood planks; the inclined sides of doorway openings, which remain throughout the Greek period and the Celtic civilisation of Europe; while the fluting of the columns, the patera, the rosette, the palmette, the spiral, are each of them forms upon which the later Hellene exercised his genius, leaving them ennobled and purified.

The third lecture dealt with the "Archaic" period of Greek art, which came about by the irruption of the Dorians in the Peloponnesus and Sicily, and the consequent migration of the Ionians to what was probably their original home. This is suggested in part by the type of citadel at Troy, or Hissarlik, in Asia Minor, which shows close affinity to the Mycænic examples. After a brief survey of the geography and history of Asia Minor in its relation to the arts, the lecturer proceeded to trace the growth of the archaic Greek style in that region, by whose traditions (those of Phrygia for example) the settlers were largely moulded. The temple form was believed to originate in the megaron of the dwelling, as at Troy, Tiryns, &c., and before 550 B.C. its structural development was complete, the talents of succeeding architects being directed to its refinement by modifications in detail and sculpture. The growth of the Ionic order from the archaic examples of Ephesus and Athens to its perfection in the Erechtheum was traced in successive stages. Turning to the Doric side, an attempt was made to sketch the growth of the Greek city, such as the Dorian colonists might plant in Sicily and

South Italy, and the matter illustrated by views of Agrigento and the numerous Doric temples of Sicily. The development of the Doric order was traced from its appearance at Mycena past the archaic reliefs at Selinunto and the capitals of the Olympian Heræon to the perfection of the Athenian examples; and an account of the peculiarities in construction was given. Speaking of the archaic Doric temples generally, the lecturer said that though grave, ponderous, and profoundly impressive, they were quite without that opulence of fine drawing and modelling which characterised every Ionian work. In place of that there had been developed a perfect structural frame, a logical application of stone to the purpose of a temple shrine, a work of architectural art assuredly, but of the second rank. But the Ionian has yet to blend with it his more artistic perception, to clothe its cella wall with his particular invention the processional frieze, and to throw into the masses and grouping, the optical refinements, the applied sculptures, the polychromatic decoration, that instinct of sweetness of line and grace of proportion which is his birthright.

The subject of the fourth lecture was announced as the "Culmination and Coalescence of Hellenic Art in Attica." After a recapitulation of the main points of the previous lectures, the economic causes of the culminating period in Athens were touched upon. The interesting history of the worship or cult of Athene on the Acropolis, as it has been developed by Dörpfeld, was gone into at some length, that the real significance of the several monuments might be made apparent. From the Varvakeion statue, the chryselephantine image of Athene was restored, and Pausanias's description of it quoted, while the pediment sculptures were also shown in restored form and as they so far exist. The attention of the students was directed to the thoughtful disposition of the sculptured Panathenaic procession in its relation to the actual event it symbolised and commemorated. A detailed description of the Parthenon was then entered upon, illustrated by numerous slides, and several restorations of the interior were advanced. The results of the researches of Mr. Penrose and others were summarised and the colour decoration explained. The lecturer said that the Parthenon was to be regarded as the Dorian-Greek model transmuted and glorified by the highest artistic instinct, which appears most of all among Ionians, among the lineal descendants of the men of Mycena. The native Ionic order seems at this time to have fallen out of favour, but was naturally employed to house the very ancient image of Athene Nike, and was revived in the memorial or heroon of Erechtheus. In its relation to the other shrines of the Acropolis, the little temple of Athene Nike was considered, and its situation, and the significance of its sculpture indicated. To the succeeding lecture

were relegated the Propylæa and the Erechtheum, other examples of skilful combination of Doric and Ionic elements from the same great centre, which was not more the mother of arts and eloquence than the child of wedded Ionian and Dorian art and philosophy.

Following up the subject of the former lecture, two of the most important of the public buildings of Athens, the Propylæa and the Erechtheum, were considered; both exhibiting the catholicity of taste characteristic of the Athenian artist and his adaptability under conditions prescribed, in spite of the conservatism and limitation of view which is supposed to distinguish him. In connection with the description of these works an attempt was made to realise the standpoint of the master confronted with a definite problem, setting altogether on one side questions of influence and environment, which, though none the less real, were doubtless beyond the view of the artist of the time. Applying this treatment to the Propylæa, the object of the building was considered; the nature of its site; the alignment which its designer decided on in its relation to the Acropolis wall and the great temple; and the original intention of the architect as it has been recovered by recent research. The various obstacles preventing the accomplishment of the scheme, in so far as they can be read in the building itself, were indicated; while the fitness of the architecture and the beauty of its details and painted decoration were shown by many illustrations. The Erechtheum was treated similarly, and explained in its relation to its purpose as a memorial of Erechtheus and his ancient megaron, the type of which it appeared to preserve in its main features; and in addition to views of its present state, restorations of interior and exterior, and of its relation to the other buildings of the Acropolis were shown by lantern slides. Extending the subject so as to embrace the culmination in Ionia, restorations of the Temple of Diana at Ephesus and the Mausoleum at Halicarnassos were advanced, with photographs of sculptures in the British Museum.

The lecture on "Declining Greece and Romano-Greek Revival" was chiefly concerned with the development of the Corinthian order: firstly, with the several buildings, such as the Choregic monuments, Tower of the Winds, and the Temple of Jupiter Olympius; and, secondly, with the growth of the capital and the order generally. The monuments were described in the light of recent researches by Dr. Jane Harrison, Mr. Penrose, and others; and many historical examples of the capital from the Temple of Apollo at Bassæ to that at Jupiter Olympius shown on a large scale. Various accessories of the temple and other architecture were then described, such as the tile and marble roof, the mosaic and plaster floors, and the metal work and decorative sculpture. But it was held that such sculpture could not be

described merely as accessory to the architecture. Mythologic in origin and motive, it was besides less vitally connected with the architectural development than in almost any other historic style. The Acropolis of Athens must have been a very forest of independent images, while other cities measured their comparative dignity by their thousands of statues. Architecture rather was accessory to sculpture, for the great chryselephantine idol might be regarded as the real motive of the erection of the whole temple and peribolus. After a word on the Dionysian theatre, and the palestra and gymnasia of the Greeks, the buildings of the Roman occupation were summarised: the Mausoleum of Philopappus; the Arch of Hadrian, and the Odeion of Herodes Atticus.

In the seventh lecture the architectural history of Italy was entered upon. From the tombs of Cervetri and Corneto some of the characteristics of primitive Italian architecture were gathered, and its close affinity with the Mycenaean type demonstrated. The tufa wall of Roma Quadrata at the Palatine and the Cloaca Maxima and other indications of Etruscan type at Rome, were described and illustrated. As an example of the transitional period, the Temple of Fortuna was instanced, with its combined construction of tufa and travertine, and its combination of Etruscan or primitive Italian materials and arrangement with almost purely Hellenic proportions and detail. In the Augustan age the natural fusion of Greek decorative principles and Italian arched construction appears in such works as the Basilica Julia and Theatre of Marcellus; while the conservatism pertaining to religious structures maintains the modified Etruscan arrangement of the Temple of Fortuna, save where, as in the Julius Cæsar's Temple of Venus Genetrix, the Greek model is fully restored. The fora of Julius and Augustus were illustrated in their restored form with details of the Temple of Mars Ultor; also the Forum Romanum, with the Temples of Concord, Vesta, Castor and Pollux. The plan of the Pompeian Forum was adduced as a typical example of the Græco-Roman arrangement, and compared with the Agora of Assos as an indication of the close approach to identity of the customs of the two races. And just as the Greek agora became the Roman forum, so the Greek palestra became the Roman therma, and the Greek stadion branched into the Roman amphitheatre and circus. An account of the Roman dwellings and shops, with illustrations from Pompeii, concluded the lecture.

The last lecture of the term, delivered on December 20th, dealt with the culminating period of Trajan and Hadrian. The motive of the architecture of the Flavian emperors appeared to be that of currying public favour, and this is strikingly evinced in the supersession of Nero's colossal Golden Palace by the building of a huge place of

public entertainment like the Colosseum. Brutal in purpose, and meretricious in decoration, there was yet a magnificence in its largeness of scale, and in the science displayed in its erection and arrangements, which, from an architectural point of view, made it well worthy of study. Sections were presented to show the variety of material employed and the engineering knowledge revealed in its construction, and it was indicated that probably the whole fabric outside and in was covered with coloured stucco and cement decoration, which would account partly for the rudeness and unfinished character of the travertine work. Along with this work, partly of the Flavian emperors, was considered the Palace of Domitian on the Palatine and the Forum of Nerva. Under Trajan, the Greek architect Apollodorus, and others, restored in his forum and basilica and other buildings the high character of the Augustan period, which was carried to a greater degree of splendour under Hadrian. The back to back cellæ of his temple of Amor and Roma, his villa at Tivoli, the Pantheon, and his mausoleum were described in their main features and illustrated by views and restorations. The recent discovery of the age of the Pantheon as that of his reign justified the classification of Hadrian's time as the culminating era of Roman art, and produced some of nature's own order out of the former chaos of Roman architectural history. The distinctive Roman material of this age is concrete, which made such conceptions as the Pantheon possible; and brick is only employed as a facing. Other materials were considered in their origin and employment, and various Roman constructural methods of centreing, building, and veneering were described. Before going on to the time of Septimius Severus, the lecturer connected the subject with Roman work in Britain, and particularly the Roman Wall in the North of England, to which the students had travelled in the autumn of the year.

REVIEWS. LXIV.

(176)

A TOPOGRAPHY OF ANCIENT ROME.

The Ruins and Excavations of Ancient Rome: a Companion Book for Students and Travellers. By Rodolfo Lanciani, D.C.L., Oxford, LL.D., Professor of Ancient Topography in the University of Rome, &c. So. Lond. 1897. Price 16s. [Messrs. Macmillan & Co., Ltd., Bedford Street, Covent Garden.]

Possibly Professor Lanciani would be even more highly appreciated than he now is in this country if he wrote fewer books. With a subject so circumscribed he cannot avoid repeating himself. On the other hand, there is no harm to us in the matter, because on questions of so much intricacy as the Ruins and Excavations of Rome most of

us require to read and re-read. We do so the more willingly when assured, as in this instance, that the easy fluency of the writer is not inconsistent with scholarly accuracy and unrivalled knowledge of detail.

It is not his purpose, he says in the preface, and again on page 322, to provide a manual of Roman topography. But, notwithstanding these warnings, travellers who take this volume with them to Rome will find in it quite as much topography as they can well desire. They will discover that topography as Professor Lanciani here understands it is precisely what they most want. To architects his accounts of the Pantheon, the various controversies that have gathered round it, and the latest results of excavation and research will be highly welcome as an authoritative statement. To the intelligent traveller it will be doubly so. But the Pantheon, not being a ruin, only comes within his scope because of the excavations of late years. He does not promise and does not give critical remarks on the architecture. That is his principle throughout. He describes in detail the frescoes of the house of Germanicus on the Palatine, but has nothing to say of their style or their relation to Greek painting. Perhaps it is as well so, if we may judge from such passing occasions as when, on page 137, he praises highly a statue of Cybele. The photograph which he gives of the bust of that statue is sufficient to show that there is no reason for his regret that it was "allowed to migrate to foreign lands." It is a statue of colossal size, such as would be effective in some great hall, but otherwise of the ordinary Græco-Roman type. So, at least, it seemed to me previous to its migration. The specimens of architectural decoration from the Basilica Ulpia on pages 316-317, are good illustrations of the art in the time of Trojan, but to speak of their "marvellous beauty," page 318, is absurd. We quite agree with him, however, in his praise of the Head of a Greek Girl on p. 379.

But these matters are of no real consequence in a book the aim of which is to recall the growth and greatness of Rome as a city filled with historical associations. For such a task the first requisite is scholarly accuracy, such as we have been little accustomed to in English works on Rome. There Lanciani stands among the foremost. It is no charge against his accuracy if we point out that in this volume there are numerous small things which ought to have been seen to by some one. He knows very well that *Theseos* (page 142) is not a possible form of *Theseus*, and he cannot himself be blamed for the numerous misspellings of proper names from the English point of view. On page 114 the word "prototype" is used in an inverted sense. "Sentence of death on the Monuments" (page 249) is probably a translation from the Italian. The word "Monument" is frequently used in a foreign sense, as on page 378, where the Colosseum is called a "Monument." It is much

to be regretted that a book otherwise so admirably suited to English wants should be disfigured by things of that sort.

British Museum.

A. S. MURRAY.

(177)

CAMBRIDGE.

Cambridge described and illustrated, being a short History of the Town and University. By Thomas Dinham Atkinson, with an Introduction by John Willis Clark, M.A., F.S.A., Registrar of the University, late Fellow of Trinity College. 8o. Lond. and Cantab. 1897. Price 21s. net. [Messrs. Macmillan & Co., Bedford Street, Covent Garden; Macmillan & Bowes, Cambridge.]

Mr. Atkinson, after some years of careful research, has produced a work on Cambridge which certainly merits high praise. He modestly speaks of Cooper's *Annals* and his *Memorials of Cambridge*, and Messrs. Willis and Clark's *Architectural History of the University and Colleges of Cambridge*, as the chief fountains from which he has drawn his inspiration; but he has gone much beyond these, especially in the part referring to the town. It is really the first book which places the information about the history of the town in a compact and readable form.

He draws a lucid picture of the early condition of the town; part surrounding the protecting



FIG. 1.—SEAL OF 1423.

castle on one side of the river, and part around St. Benet's Church some half mile higher up on the opposite bank, all now enclosed in the much enlarged town.

The almost unique position as a reason for the growing up of an important town is well explained; he brings out clearly how the fens to the north were an impassable barrier, and the woodland to the south was almost the same, while the river was navigable up to the town but not above, where it was invariably forded, as shown by the names of the villages on it. Its bridge formed by far the most convenient route for the transit of goods between East Anglia and the West of England; and thus we find what might almost naturally be looked for, viz., the great Stourbridge fair, a fair of very early times, but which was flourishing as late as the last century, and is spoken of by Defoe (whom Mr. Atkinson quotes at some length) as

“not only the greatest in the whole nation, but I think in Europe.” It certainly was of sufficient importance to make serious heart-burnings between the University and the Town as to their respective privileges in it. In 1589 charters were granted

for assenting to certain “newe jurisdictions of the Universitie and therein betrayed the Towne, who shortly after was putt of his Aldermanship and lived the remaynder of his life in great want and miserie and hatefull to all the townesmen.”

The description of the guilds makes an interesting part of one chapter. The guilds for trade purposes appear not to have gone beyond the guild merchants. Others were chiefly religious or social, but in nearly all cases they objected to allow the clergy to join them. In one case “the wives of brethren were admitted to the rights of membership, but all other women were excluded and also all parsons and bakers.” They do not seem to have been wealthy bodies, for when a brother was in need he was allowed from 4*d.* to 7*d.* a week so long as there was money enough, and if more than one needed help this amount had to be divided among them. But though the guilds had but little for the spoiler, the “all devouring” Henry VIII. took what there was and suppressed them, and no societies for self-help and mutual assistance existed from that time until the more modern development of this century brought them out again on a much more extended scale.

The Town had a seal as early as 1349, but this was superseded in 1423 by the one illustrated [fig. 1, p. 141]. The arms at present in use were granted in 1575.

One most interesting chapter enters on the question of the topography, and brings out clearly the various changes that have taken place at different times: how King John made a

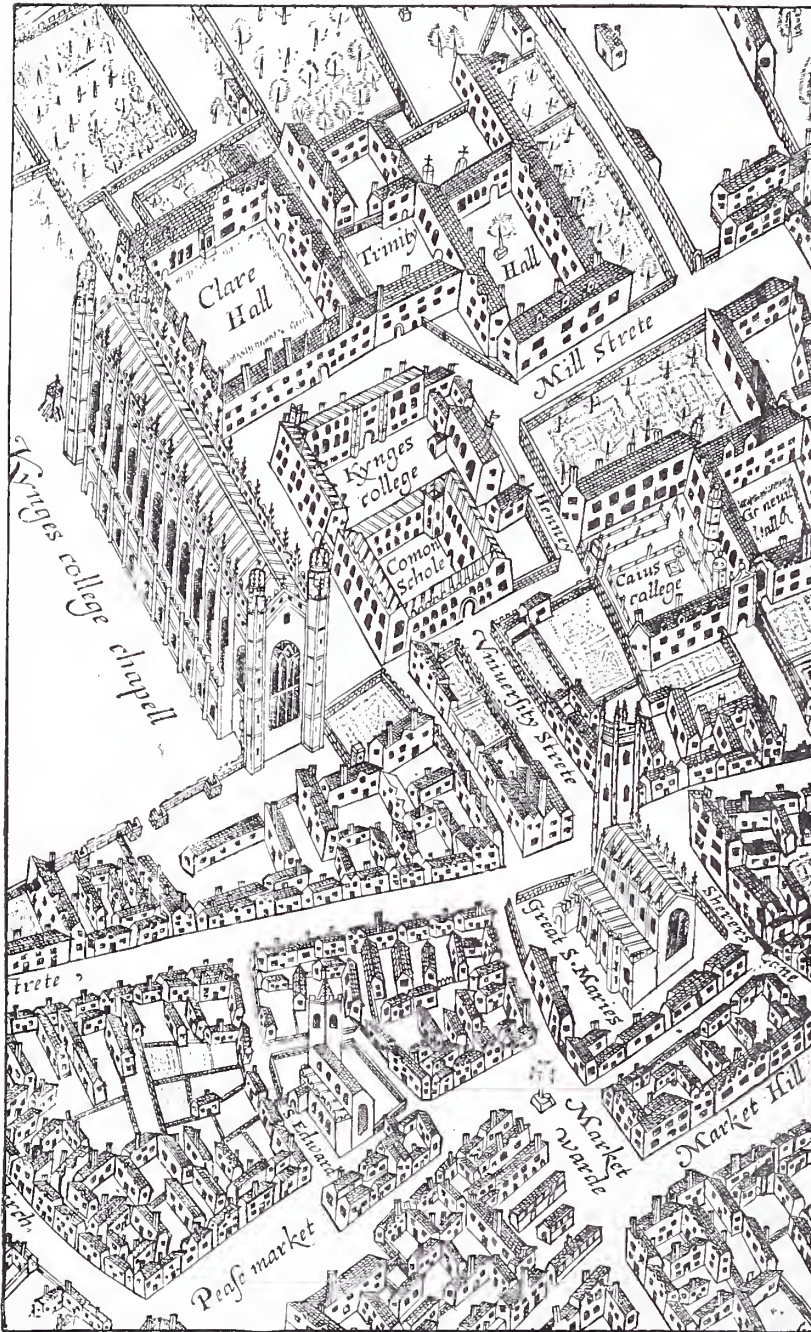


FIG. 2.—PART OF HAMOND'S MAP, 1592.

both to the University and Town, and the poor mayor, “one Gaunt,” got himself into sad trouble

ditch, which, though now invisible, still runs in some parts but is drained off in others; how the

old Market Hill in olden days was much more built over than at present; how one good fire did a vast benefit in burning houses, and how the corporation were public-spirited enough to spend

author's zeal is shown in the way in which he has traced its history, partly from the buildings themselves and partly from documentary evidence. The Shire House, built by Essex in 1782, is in

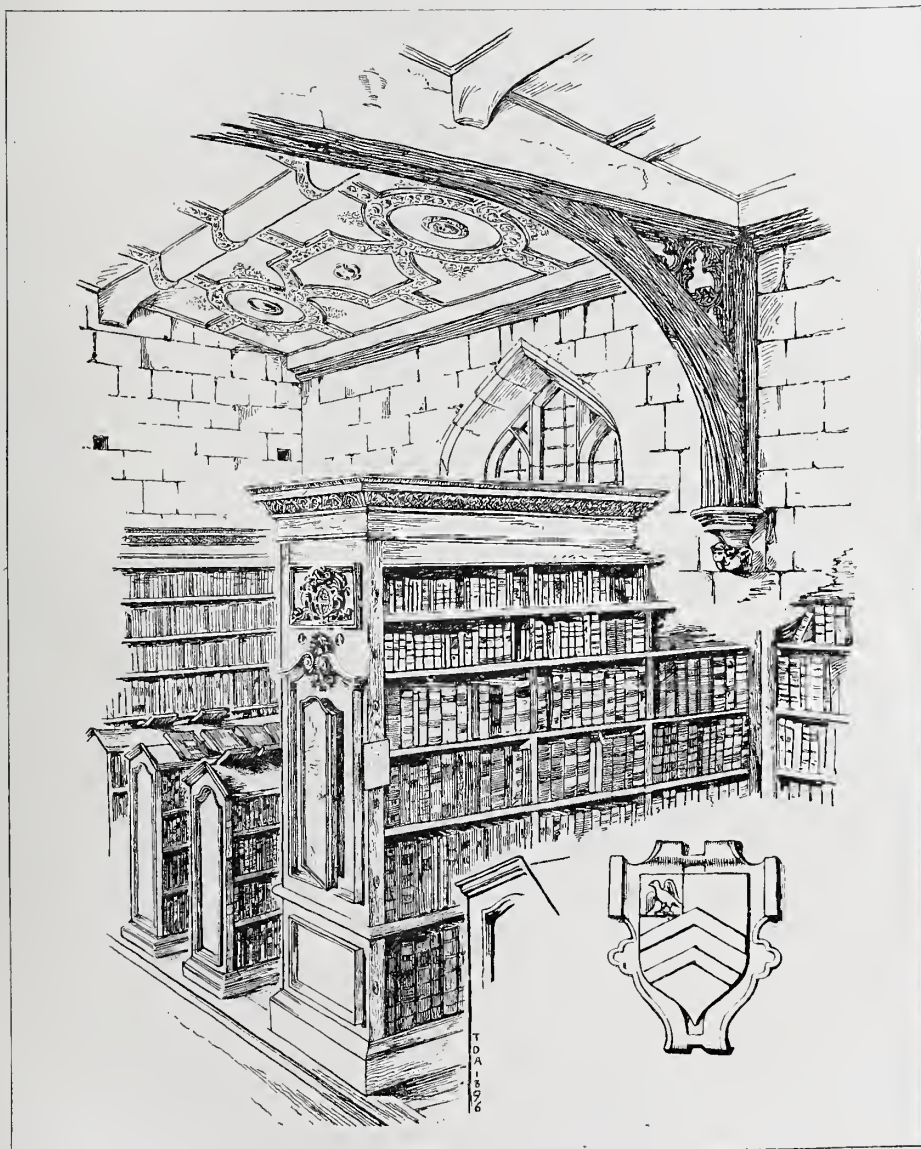


FIG. 3.—THE CATALOGUE ROOM, UNIVERSITY LIBRARY.

some £11,000 in preventing their being rebuilt. The old Market Hill, with these houses blocking it up, is clearly shown on Hamond's map, A.D. 1595 [fig. 2].

The topography leads on to the public buildings, and the history and changes in the Guildhall are particularly interesting. The old Shire House is now the front part of it, and the whole has been so changed in successive times that our

all probability soon to be swept away to make room for more commodious and more ambitious buildings.

In the civil wars of Charles I. and Cromwell we find the part Cambridge took in the struggle. The way in which the election to the position of Freeman was managed for Cromwell was worthy of Tammany Hall. This simple act placed him in position to become member for the Town, and

thus to carry out the work he ultimately prosecuted with so much vigour.

Mr. Atkinson gives a list of the churches and a very clear and careful account of them and of their history. The peculiar arrangement, still to be traced in some which were partly college chapels and partly parish churches, is well set out, and plans in some cases are given, which are really necessary for a stranger to understand the account of what was done. These churches form a very important feature in the history of ecclesiastical buildings, and show how the religious bodies worked for the people, while at the same time they had to retain accommodation for their own religious rites.

Not content with the history of buildings, &c., he gives accounts of various societies, not only now existing, but of others which have ceased to exist. The Cambridge Camden Society is one of the most interesting, and it is curious that he has omitted to mention the great and historic trial about the stone altar at St. Sepulchre's which really brought it to an end.

Turning to the University, the lines of Messrs. Willis and Clark are followed much more closely. Theirs is such an exhaustive work that it would be difficult to find much matter that it has not dealt with. Here, however, it is put in a much more concise form, and the drier details which cannot be omitted from a complete history are touched with the gentle hand of the painter that throws a gleam of light on the haze to show the existence of what he cannot bring into greater prominence.

In this short review it would be difficult to follow Mr. Atkinson through the varied history of the University Schools and Library buildings, but he has kindly lent one of his sketches showing the catalogue room with its original roof (date c. 1400) and the ornamental plaster ceiling (date c. 1600). The book-cases (date c. 1700) are partly cut away in the sketch [fig. 3] to show the original roof corbel.

In Jesus College, where the west front of the old nunnery chapter house has been lately discovered, we find not only a full account of it but also explanatory drawings.

The work has several of the beautiful steel engravings which were done by Le Keux and Storer for Cooper's *Memorials*, and, as that work is now hard to obtain, it is perhaps fair to reproduce them, and not leave them hoarded up on the shelves of the owners of copies of the *Memorials*. In the description of each college a schedule of all the pictures in its possession has been included.

It will be seen that this work is really a most important addition to the topographic history of England. If antiquaries in other towns and in villages too would work out the histories as carefully and as faithfully as this has been done, what a wonderfully interesting series they would make!

Cambridge.

WILLIAM M. FAWCETT.

(178)

ROYAL ACADEMY ARCHITECTURE.

The "Builder" Album of Royal Academy Architecture.
Fo. Lond. 1897. Price 10s. 6d. [The "Builder"
Office, 46 Catherine Street, Strand.]

This work comprises a selection of the illustrations which, during the past year, have appeared in the *Builder*, and made from those which were reproduced from drawings exhibited in the Royal Academy. The plates have the special advantage of being more carefully printed, and the double pages are without the fold which is necessary in the folio of the *Journal*. The single-page illustrations are printed on the same size sheet as those of the double pages, so as to keep each subject on a separate page, and they have the advantage of coming as a relief after the more crowded pages.

The description of the designs (which is specially set up for the purpose), with plan where given, is placed on the left-hand sheet opposite the drawing, the most convenient method to read the explanation of the design.

The prints are subdivided into subjects for easy reference in the same way that many collectors already adopt with the prints in the professional journals; thus churches and chapels come first, followed by public buildings, business premises, domestic architecture, drawings of old work, decorative designs, and sculpture.

There are 115 plates (indexed under subject and author's name), and the price at which the Album is issued ought to bring it within the reach of any architectural student. To the architectural historian of the future such a work ought to be of inestimable value, as it not only represents the architectural work of the age, but in some cases (viz. competition designs) the aspirations of those who have not for the moment been fortunate in the race.

R. PHENÉ SPIERS.

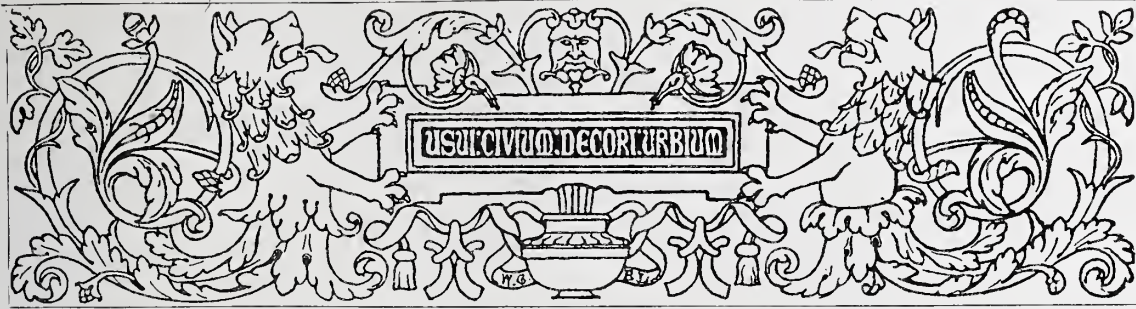
Books received for Review.

Documents relating to the History of the Cathedral Church of Winchester in the Seventeenth Century. Edited by W. R. W. Stephens, B.D., F.S.A., Dean of Winchester, and F. T. Madge, M.A., Minor Canon and Librarian of Winchester Cathedral. 8o. Lond. & Winchester, 1897. [Messrs. Simpkin & Co., Ltd., Stationers' Hall Court, London; Messrs. Warren & Son, High Street, Winchester.]

The *Builder* Student Series Carpentry and Joinery. A Text-book for Architects, Engineers, Surveyors, and Craftsmen. Fully illustrated, and written by Banister F. Fletcher, A.R.I.B.A., and H. Phillips Fletcher, A.R.I.B.A. 8o. Lond. 1898. Price 5s. [Messrs. D. Fourdrinier, 46, Catherine Street, W.C.]

Progress of Art in English Church Architecture. By T. S. Robertson, with illustrations by the Author. 8o. Lond. 1897. Price 5s. [Messrs. Gay & Bird, 22, Bedford Street, Covent Garden.]

Stable Sanitation and Construction. By T. E. Coleman, F.S.I. With 183 illustrations. 8o. Lond. 1897. [Messrs. E. & F. N. Spon, Ltd., 125, Strand.]



ADDRESS TO STUDENTS. Delivered by the President, Professor AITCHISON, R.A.,
at the Sixth General Meeting, Monday, 24th January 1898.

STUDENTS,—

IT has been the custom for the President to say a few words to those who have just entered on the study of Architecture, and it is one of the most grateful tasks that he has to do, for he can look forward to those happy times when some of you aspirants may have conferred an inestimable boon on your country by designing monuments that will delight your contemporaries, and may be hereafter the admiration of the world.

Speaking personally, it is the student's welfare that I have most at heart, not only because I see how many of my own youthful days were wasted from having no proper direction, but also because it is the one feature in all architectural epochs over which the elders can have the greatest influence. At present we know not how to produce genius, nor how to turn the public mind to desire and take an interest in noble architecture. We have abolished symbolism, so that the bulk of buildings do not tell their tale, and the public are ignorant of what is being done for them. In the triumphal arches of the Romans, a goddess leaning on a wheel told the public that the Emperor made roads. If any statesman knew his business, every good sculptor in the kingdom would be fully employed in sculpturing buildings to tell the poor what was done for them: how they were taught, cured, looked after in their old age, and in their sickness and infirmities; and how law and order, peace and industry, were being taught to the savages who surround our Empire. It is in the interest of the students, and the art, that I have proposed to omit from the Examinations all that is not purely architectural, for this now shuts out those who have not received a good general schooling. We do not want to shut out a genius, not even a resolute and determined worker, because he has not learnt Greek, Latin, French, or German.

I do not suppose Rafael had much schooling when he was taught to draw at three years old, and yet he not only became the greatest painter of modern times, but a sculptor, and an architect too. We are not surprised that a man with such inventive genius as Rafael should become skilful as an architectural designer when he had learnt the elements of architecture; but it is surprising that he should have been one of the great constructors of his age, for you must recollect that Bramante on his death-bed recommended him to the post of head architect to St. Peter's. I do not suppose that Palladio had much schooling when he was but a mason's boy, nor our own Ware when he was a chimney-sweep.

I have devoted twenty years in trying to gain an insight into the causes of the great architectural epochs of Europe, and this is the conclusion I have come to. They seem to me to result from the set of the public mind towards enriching its age with monuments which embody the general aspirations. To accomplish this there must be hoarded wealth, noble desires, and architectural judgment. There must be, too, those endowed with the genius to

express those aspirations architecturally, and highly skilled craftsmen to carry them out. As far as I can judge, genius is the power of invention, and is mostly accompanied by that high general capacity we call talent. This heavenly gift of genius and this general capacity are, however, only the raw material which has to be worked up. Genius has not only to learn what is necessary to express its conceptions, but to strive to do its best.

Architecture is a structural art; and therefore the art of construction is the most necessary thing to be known. The science of construction is statics; consequently the elements of statics must be known. A knowledge of statics, too, gives us a true ratio between every part of a structure, and it gives the real shape that each part must take; if we were as clever as Nature, it would in all probability give us a beautiful shape. Unfortunately, we are far from being so clever, and consequently we have to learn by other means how a beautiful shape can be made out of the necessary shape. For this purpose we must study deceased architecture and Nature. Every piece of deceased architecture that we admire can be made to show us the æsthetic laws that govern it and produce its excellence, and these laws are as capable of being employed now as then. Every important portion of an ancient building may have the reason extorted from it as to why it pleased at its creation, and pleases us now; but from our greater knowledge, and from the necessity of using other materials, we may see that the proportions then used are not now applicable: for instance, a Greek Doric column showed the statical knowledge of its day, but it certainly does not now. Our materials and climate are different; the emotion now wanted is probably different, and the æsthetic sentiment of our day is probably different too; so we must get some of our hints and solutions from Nature's works. There are in the first place human beings and animals, and there are thousands of different sorts of trees, of leaves, of grasses, of buds and fruits, which have beauty in different degrees, and we should learn from these how the beauty we want can be attained by various shapes and various proportions.

Without the gifts of the mathematical and the artistic capacities no man should become an architect; but there is another requirement which we call planning—that is, how to make each room, hall, passage, and staircase answer its purpose, and how to pack them in the most convenient way. This may be called common planning; but there is artistic planning as well, which is the choice of forms which are not only appropriate for use but are agreeable to the eye. I would by no means discourage any one who loves architecture and will study it from being an architect, for there are various degrees of power and excellence in architectural works, all of which make up the realm of Architecture. We do not despise the violet because it is not so grand or so lasting as the oak.

The smallest cottage, if perfectly arranged, perfectly constructed, and perfectly proportioned, may be as delightful to contemplate as the mansion, the palace, the town-hall, or the cathedral, though it does not require the same knowledge, the same daring, and the same invention. You must bear in mind that nothing great is reached in the fine arts without simplicity, but lovely simplicity is reached by great labour, and takes about ten times as long to arrive at as ornateness. "Oh! what a power has white simplicity!" Just now there is a great inclination to get effects by exaggeration, or by ways that involve little thought or trouble, such as by the distortion of the orders, the sticking on of bits of rustication all over a building, or by putting water-gates into the attics of buildings.

We must not forget the proverb that "the human mind is greedy of novelty," so much deplored by William Morris and by Mr. Ruskin, though the desire for novelty is natural to man, and cannot be overlooked nor overcome; for each generation has not the same knowledge nor desires as the preceding one. In eating, the most delicious food soon palls, hence the proverb of "Nothing but eel-pie." Let us, instead of deploring the taste for novelty, echo

Tennyson's words: "Let the great world spin for ever down the ringing grooves of change." True novelty is obtained by development. We see how Nature develops her types; and if we had lived in the palmy days of Greece, we should have seen how the young clothopper was developed into grace and beauty by training.

It is rather nauseous and rather ridiculous to hear so much talked of a new style, particularly when it is supposed that a clever man can invent it. The real new style is to be attained by the improvements that come about by the altering of proportions through our greater knowledge of statics and the strength of materials; by making our buildings perfectly suitable to the new requirements of our age; by the suiting of our mouldings to the climate, by the greater cultivation of outline, and by a deeper knowledge of our own light and shade.

The hideousness and ignobleness of our clothes render contemporary sculpture impossible; we have not even arrived at what the Italians call "handsome ugliness," and we have, when the present is represented, to confine ourselves to the brutes and to vegetation.

Though I fear that what I am about to say may seem not a twice-told tale, but one that has been told many times in each generation, it cannot be too often impressed on the young. Men cannot always judge of what they are capable, so that if a student loves the art sincerely, but appears to have no capacity for it, he cannot be sure of this: his capacity may require much cultivation, and if he woos the art in season and out of season he may find he has it. Etty, the Royal Academician, who eventually painted flesh so admirably, was the butt of his fellow-students; but by resolutely pursuing his labours and never losing a moment he became excellent at his art after some twenty or thirty years of unremitting study. Moderate your wants, and be contented with the poor pecuniary rewards your industry can attain. Your ambition should be to create something that will charm and elevate your fellow-men through centuries. Those who look for money as the main thing, should be surveyors or valuers. Nor am I going to treat architecture as a thing to be done in broken time, nor, to look on it, as it is mostly looked on now, as a lower branch of the knowledge of the value of land and the price of bricks; nor as an antiquarian revival; but as a creation of the true and the beautiful as understood and felt in our own day.

I mainly address myself to those who have the ambition to be poets in marble, stone, brick, iron, and wood, who desire to endow their country with a building that may rival the Parthenon, the Erechtheum, the Propylæum, or the Choragic Monument; the Pantheon of Rome, or with one that may vie with the interior of St. Sophia and St. Mark's, with the Scuola di San Marco, with the Cornaro-Spinelli Palace, or with the Town Hall of Brescia. Think of Milton, who got the price of waste-paper for his *Paradise Lost*, but who "made himself an everlasting name."

In some of the fine arts the mere exercise of them is its own reward. In the concord of sweet sounds this is certainly the case, and why should not the creation of the true and beautiful in architecture be its own reward? There have been those great and pure souls that asked for nothing, but were contented to help and raise their fellows without even a thought of fame. Surely such exist among us?

Cannot some of us be content to endow our country with a priceless treasure, with a monument that all mankind must admire and be thankful for, without an afterthought of fortune or fame? Do we not admire and revere the architect of the Pantheon at Rome, though his name is still unknown? It is only lately that the name of Formentone was known as the architect of the Town Hall of Brescia. Have we not Socrates; that soldier who perished unknown in the sentry box at Pompeii, and Marcus Aurelius as examples? and surely there must have been thousands who have only sought to do their duty, and there must be thousands

still. We have at least an example of one great Englishman of perfect courage and perfect benevolence, Gordon. Let us hope that as great a soul may be found amongst our own students.

NOTES ON THE DESIGNS AND DRAWINGS SUBMITTED FOR THE PRIZES AND STUDENTSHIPS 1898. By ERNEST GEORGE, *Vice-President*.

I HAVE been invited to make a few remarks to the authors of the many drawings before us, on the subject of their work. Criticism means generally fault-finding, and is at all times a thankless task. You must kindly take my comments in good part, even where you find me wrong in my judgment.

With numerous well-executed drawings before us, we are bound to recognise the proficiency that obtains in the matter of draughtsmanship. I suppose when most of the noble monuments of the past were built, there were no such accomplished draughtsmen as many of you. It is a good thing to attain facility with the fingers and a ready method of expressing ideas, and I believe that it helps materially towards design. Yet original ideas are few, while pretty drawings are many, and a taking manner of drawing sometimes conceals the lack of anything to say. The art may become a snare.

It is well to keep in mind the fact that architects' drawings are only a *means*, and not an end. They are not pictures, but they are documents of the architect's scheme: they should convey to his client an idea of the house he is to have; but their first object is to show the craftsman the work that is to be done. The architect who is head and shoulders above the rest of us, confesses to the burning of his beautiful drawings after they have served their practical purpose. This is not a custom one would commend.

In preparing these drawings, some of you will have speculated on what the assessors desired to see. Taste is a varying quantity, and depends with each of us on the condition of the mind with regard to certain forms or colours that appear to us with freshness or with pleasant associations, or that we see after they have been too often played upon or travestied. Perhaps this is especially felt with certain so-called "Queen Anne" features that were pleasing when first introduced by good hands, but which we have seen done to death.

In a street we commonly find the most ornate and richly decorated building is a public-house, and we feel that a gentleman's house must be severely plain. Choice marbles, again, are so freely used in restaurants and in sanitary works that, from association, we become afraid to employ a beautiful material that Nature has placed in our hands. We are familiarised with so much commonplace and meaningless ornament that the eye rests with pleasure on any broad wall-surface, and we are conscious of a reaction in favour of utter simplicity. A cynic has said that life would be endurable but for its pleasures. We feel that the vernacular buildings around us could be tolerated if cleared of all ornaments and futile efforts to please.

It requires an artist's hand to dispose and wisely restrain the sculpture or decoration, which becomes a source of delight when it finds its right position. Still, there is a fitness in all things, and if your subject for design be a concert-hall for a wealthy city, or a mansion for a nobleman, you must not apply to it the bare treatment that would be admirable for a barrack.

THE MEASURED DRAWINGS.

For the Measured Drawings of "Ancient Buildings in the United Kingdom" six competitors for the Medal put in a good appearance. The drawings of Clare College, Cam-

bridge, by Mr. T. Tyrwhitt, have been awarded the prize. This interesting building has been portrayed with thoroughness. We are shown its street front, where stone mullions still obtain, though label mouldings have given place to cornices of Italian origin. The river front, though in harmony with the earlier work, has its fully developed sash windows with architraves and key-stones.

An admirable set of measured drawings of Thaxted Church, Essex, by Mr. Cyril Wontner Smith, receives a Medal of Merit.

In "Kot" we have another careful set of drawings, the cloisters at Norwich. The four sides of these cloisters at first suggest repetition, till we note the interesting transition of styles from the early "Decorated" to the late "Perpendicular." The mouldings of the various epochs are given with care, though the custom of crowding the paper with mouldings makes them not always legible.

Other drawings show care, steady work, and ready draughtsmanship. I do not know whether my colleagues are with me, or whether I am right in making the suggestion that it is not desirable to fill up, with full detail, the whole of each elevation, repeating innumerable mouldings or cusps. I think the balance of the drawing can be kept without all parts being carried to the bitter end, to the weariness of the artist. Personally it distresses me to see mechanical repetition. Prize drawings, of course, must not be slovenly or sketchy, and it is perhaps difficult to draw the line at anything short of finish.

THE SOANE MEDALLION.

Of the five designs submitted for the Concert Hall there are points to commend in each, although no one design is considered to reach the required standard for the Soane Medallion.

The design "Pan" has style, and there is much that we like in the treatment of the exterior. The arcaded upper storey is well conceived, though we think the small niches between the projecting columns are unnecessary, and it would be wasteful to put good sculpture in that shady retirement. Above the bold cornice and balustrade we should like the building to cease. We think that a building of this type suffers by a show of roofs. These latter are formed to accommodate the secondary hall, but this smaller hall is worth a better position than it gets in this attic story. In the absence of these roofs the auditorium might have become an imposing feature in the composition. The plan of this building is less satisfactory than the exterior. Probably the difficulty has been to provide the required seating accommodation, and the hall is injured by its three overgrown galleries. The passages would gain by greater width, both for convenience and safety.

The design "34° South" has a well-studied plan. The two galleries are in just proportion to the hall, the passages are of fair width, and the smaller hall is treated with consideration. The elevations of this building are not satisfactory, the proportions and composition of the group are not happy, and the design suffers from many stripes, the eye wearying of rustications from the plinth to the cornice.

"Quod erat faciendum" is a design showing thought, and the elevations have a distinct interest. It is not, perhaps, a bad fault that it is very like a church. The square concert room is not a satisfactory shape, and the aggressive projection in the middle of a side wall for a royal box, would not be tolerated by the most loyal of subjects who cared for music.

"Cornice" is a bold rusticated block, after the manner of a Florentine palace. The treatment is daring and original, and is not without dignity. The long line of columns on the flank wall would look well but for the two tiers of openings between the columns, robbing the latter of their effect as a colonnade. An arcaded treatment of these balconies might have worked better.

Of "Lyra" one feels that it is rather a theatre than a concert-hall, but the circular form has its advantages. The dome has an awkward shape, which is emphasised by the strongly marked ribs upon it. There is simplicity in the general treatment, and we do not blame the design for its broad wall-spaces. With the latter, however, we feel the demand for bolder detail where mouldings and projections appear. There is too much equality about the three rows of cornices and the spaces between them, and we should like more interest about the doorways, which have each a glass shelter over them as their prominent feature.

It has been decided that no design is sufficiently satisfactory, both inside and out, to merit the distinction of the Soane Medallion; there is, nevertheless, evidence before us of intelligent study and of good work done; and although unsuccessful for the Medal, I am sure you will not look upon your work as wasted. Your time has been well spent on a subject of great interest, and the knowledge you have acquired will one day be turned to account. London is not yet provided with its fitting concert hall.

THE TITE PRIZE.

"An English Villa and Garden treated in the Italian Style" was, as you know, the subject given last year for the Tite Prize; but the works on that occasion were not considered of sufficient merit to justify the award. The same subject given again has called forth a better response this year from the nine competitors who have entered the lists.

Of these schemes, "Andante," by Mr. John Stevens Lee, takes the Prize. There is simplicity and propriety about the villa, which, in some designs, has too much the character of a large country house. The plan might in some respects be improved. The central hall with columns would have gained much if it had, in its height, included the first floor gallery, which would have opened into it. At present this gallery looks out upon the lead flat and skylight—never a comely prospect. The two passages at the ends of the loggia are unnecessary, and might have been included in the loggia. There is art in the scheming of the garden, its features having interest without becoming obstructive. The drawing is incisive and clear, giving good expression to the design.

To "Heather," by Mr. Thomas A. Pole, a second prize is awarded. It is a good drawing, showing a house with well-proportioned wings sheltering the upper terrace. The balustrade of this terrace is placed on the edge of a steep bank, where grass would not thrive happily, and I think a wall would have been more suitable in this position.

A design distinguished by a device (a Circle and Triangle) has points of interest and quaint fancy, and there is good character, in the house. The manner of the drawing, perhaps, gives it the feeling of being somewhat crowded and wanting in repose.

"Tiber" is one of the less ambitious schemes. It is pleasant and homely, with less effort after features than we find in some of these gardens.

The design "White Star" departs from the horizontal and reposeful lines of the Italian treatment. The house is rather suburban in character, and is not quite in sympathy with a formal garden. The rooms are purposely unsymmetrical, the bay windows in each room being brought to a corner, and one end of each bay being cut off by the wall. The villa does not centre with the garden, and we think it desirable that it should do so, when the formal treatment is adopted.

Other designs have their good and their weak points, but I have not criticisms of all that have come before us. I think in devising these gardens a difficulty must have been present to you all; it is that of having no obstacles to surmount in your imaginary garden. In an architectural, or built garden, the incidents that please arise generally from difficulties of level and other problems that have to be fought with; these suggest forms that would hardly occur

to one on a clean sheet of paper. There are nevertheless many happy devices and suggestions in your several proposals.

THE PUGIN STUDENTSHIP.

For this Studentship there is a very creditable show, and the subjects are generally well chosen. The prize is awarded to Mr. de Gruchy, whose merit the Institute has had the opportunity of recognising before, and it is a pleasure to see such work as he sends us.

A second prize is given to Mr. Bower, and I am glad to find among his studies the grand tower of St. Mary's, Newark. I do not doubt Mr. Bower has studied also the noble interior of this church. Seeing it again the other day, I was impressed by its dignity, unity, and proportion. It possesses those qualities that are attributed rather exclusively to fine classic buildings.

Mr. Fulton gives us good examples of his work. We like the way he has drawn the vigorous detail of the Scotch carver in the screen from Aberdeen. Whilst studying the old examples of carving he looks also to the original types: his thistles and other foliage are well put in, as are the crucifix and figures. Mr. Fulton is the recipient of the Aldwinckle Prize, and we shall be interested to see the results of his Spanish campaign.

Before leaving these various groups of sketches I would remark that they are nearly all honest and direct in their purpose of delineation, the architectural details being the points of interest. There is not the attempt we sometimes see to give a fictitious interest by dwelling on cracks in the masonry, or dots and spots suggesting rotten bricks. We have seen these incidents forced to give a meretricious prettiness to architectural drawings.

THE OWEN JONES STUDENTSHIP.

For the Owen Jones Studentship there are but two candidates, and the work does not quite reach the level that has been attained by the late winners of the prize. The studies of keramic work, including the Arab Hall of the late Lord Leighton, are freely drawn and put in with good colour; there is, however, no range or variety of subject. The other competitor shows greater diversity, but there is a certain hardness and want of freedom about the work, and some lack of harmony and "quality" in the colour, which are drawbacks to the interest of the subjects portrayed.

THE GRISSELL GOLD MEDAL.

For the Grissell Gold Medal there are many entries, for the subject of a country church of timber is attractive, and should bring out original suggestions.

The design marked "Stavekirke," by Mr. Harbottle Reed, receives this prize. A wall of timber is unsuited to take the thrust of a roof, so the architect helps it with an inner range of posts, forming an outside aisle or passage. There is not, however, much thrust from this roof, as, although the principal has an apparent arch, there is practically a tie beam from plate to plate. I venture to think the arch is no help to the design.

Several of the schemes show a tendency to form arches, sometimes cutting them out of exceptionally large balks of timber, instead of trusting to beams, posts, and struts, which are the natural forms of wood.

There are features we like in the good drawing marked "Emce," but we object to the circular-headed windows with voussiors, a direct following of stone forms.

A second prize is awarded to the design "By Lamplight," the work of Mr. W. Stanley Bates. It is a good piece of timber construction, and well-proportioned. The internal design of the roof, with its rather finikin pierced work, is less commendable. In the view of the exterior one feels that the timber and shingle are overladen with lines, to the detriment of the drawing.

Some of you will be familiar with the interesting church at Honfleur, entirely of wood,

and looking most constructive, the mullions and tracery of the "Perpendicular" windows seeming particularly natural and suited to the material employed.

The authors of various other good drawings will forgive me that I have not touched on them in my fault-finding. I have chosen those about which I might make a possibly useful suggestion. You must accept my hints for what they are worth, and give them a kind interpretation.



9, CONDUIT STREET, LONDON, W., 29th January 1898.

CHRONICLE.

PRIZES AND STUDENTSHIPS 1898.

The Deed of Award, read at the Meeting of Monday, 17th January.

GENTLEMEN,—Pursuant to the terms of By-law 66, that the Council shall, by a Deed or Writing under the Common Seal, award the Prizes and Studentships of the year, and announce such awards at the next General Meeting after the adjudication, the Council have the honour to state that they have examined the several works submitted for the two Silver Medals of the Royal Institute, the Soane Medallion, the Pugin and Owen Jones Studentships, the Tite Prize, the Grissell Medal, and the Aldwinckle Studentship.

THE ROYAL INSTITUTE SILVER MEDALS.

(i.) *The Essay Medal and £26. 5s.*

One Essay* was received for the Silver Medal, under the following motto:—

"Heir of all the Ages."

The Council have decided not to award the Prize.

(ii.) *The Measured Drawings Medal and £10. 10s.*

Six sets of drawings were sent in, of the several buildings enumerated, and under motto or device, as follows:—

1. A Flower (device):—Thaxted Parish Church, Essex.
2. Clare:—Clare College, Cambridge.
3. Kot:—The Cloisters, Norwich.
4. Dum Spiro Spero:—Queens' College, Cambridge.
5. Labor omnia vincit:—The Charterhouse.
6. A White Horse (device):—Church of St. Helen, Cliffe at Hoo, Kent.

The Council have awarded the Silver Medal and

* Subject: "A Review of English Architecture of the Nineteenth Century."

Ten Guineas to the delineator of Clare College, Cambridge, a set of drawings submitted under the motto "Clare,"† and a Medal of Merit to the author of the drawings of Thaxted Parish Church, submitted under the device of a Flower.‡

THE TRAVELLING STUDENTSHIPS.

(i.) *The Soane Medallion and £100.*

Five designs for a Concert Hall were submitted under the following mottoes:—

- | | |
|------------------|-------------------------|
| 1. "Pan." | 4. Cornice. |
| 2. "Lyra." | 5. Quod erat faciendum. |
| 3. "34° Southl." | |

The Council have decided not to award the Prize.

(ii.) *The Pugin Medal and £40.*

Four applications were received for the Pugin Studentship from the following gentlemen:—

1. James B. Fulton (London).
2. Benjamin Bower (Birmingham).
3. Charles de Gruchy (London).
4. Ramsay Traquair (Edinburgh).

The Council have awarded the Medal and (subject to the condition, among others, that the said candidate devote a tour of not less than eight weeks' duration in some part of the United Kingdom, to the study of Mediæval Architecture) a sum of Forty Pounds to Mr. Charles de Gruchy [*Student R.I.B.A.*], and a Medal of Merit and Five Guineas to Mr. Benjamin Bower.

(iii.) *The Owen Jones Studentship and £50.*

Two applications were received for the Owen Jones Studentship from the following gentlemen:—

1. Frank Lishman [*A.*] (London).
2. Ralph Scott Cockrill.

The Council have decided not to award the Prize.

(iv.) *The Tite Certificate and £30.*

Nine Designs for a Villa and Ornamental Garden in the Italian style were submitted, under the following mottoes and devices:—

- | | |
|-------------------------------------|-------------------------|
| 1. Triangle within Circle (device). | 6. Italian Grandeur. |
| 2. Andante. | 7. White Star (device). |
| 3. Van-der-Neer. | 8. Lorenzo. |
| 4. Heather. | 9. Tiber. |
| 5. Orion. | |

The Council have awarded the Certificate and (subject to the condition, among others, that the said competitor, after an absence of not less than four weeks, shall submit satisfactory evidence of his studies in Italy) a sum of Thirty Pounds to

† Mr. T. Tyrwhitt [*Student R.I.B.A.*].

‡ Mr. Cyril Wontner Smith [*Student R.I.B.A.*].

the author of the design bearing the motto "Andante,"* and a Medal of Merit and Ten Guineas to the author of the design bearing the motto "Heather." †

[*The Godwin Bursary*.—With regard to the other Travelling Studentship in the gift of the Institute, viz., the Godwin Bursary (Silver Medal and £40), the Council regret that no applications have been received for the Studentship this year.]

PRIZE FOR DESIGN AND CONSTRUCTION.

The Grissell Medal and £10 10s.

Twelve designs for a Small Country Church were submitted under the following mottoes and devices :—

- | | |
|-------------------------|----------------------------------|
| 1. "Westminster." | 7. A Carpenter's Plane (device). |
| 2. Simplex. | 8. Fortis Gracil's que. |
| 3. "Ajax." | 9. "By Lamplight." |
| 4. Thistle (device). | 10. Emce. |
| 5. . T. (in red ink). | 11. Doan Tu Nomi. |
| 6. Tudor Rose (device). | 12. Stavekirke. |

The Council have awarded the Medal and Ten Guineas to the author of the Design bearing the motto "Stavekirke," ‡ and a Medal of Merit to the author of the design bearing the motto "By Lamplight." §

THE ALDWINCKLE (EXTRA) STUDENTSHIP (£50).

The Council having decided to award the Studentship for the year 1898 to the person who, among all those submitting works for the Prizes and Studentships 1897-98, will, in their opinion, best carry out the donor's intentions (this Studentship being due to the munificence of Mr. T. W. Aldwinckle [F.]), have selected Mr. James B. Fulton, provided necessarily that he fulfil the required conditions as to travel and study in Spain for a period of not less than eight weeks.

THE ASHPITEL PRIZE.

The Council have, on the recommendation of the Board of Examiners (Architecture), decided not to award the Ashpitol Prize for 1897.

THE ARTHUR CATES PRIZES.

Prizes of Books to the value of Ten Guineas, offered by Mr. Arthur Cates, ex-Chairman of the Board of Examiners, to the Students whose Testimonies of Study for admission to the Final Examination are considered by the Board to best merit the Prize, provided they pass the Examinations for which the said Testimonies are submitted, have, on the recommendation of the Board of Examiners, been awarded to Mr. Percy Morris (London) for the June Examination, and to Mr. Laurence Hobson (Liscard, Cheshire) for the November Examination.

TRAVELLING STUDENTS' WORKS 1896 AND 1897.

The Pugin Student 1896.—The Council have approved the work executed by Mr. Cecil Claude

Brewer, who was elected the Pugin Student of 1896, and who travelled in the counties of Essex and Suffolk.

The Soane Medallist 1897.—The Council have approved the work executed by Mr. John Alexander Russel Inglis [A.], who was awarded the Soane Medallion in 1897, and who travelled in Italy and Sicily.

The Godwin Bursar 1897.—The Council have approved the Report of Mr. Robert Stephen Ayling [A.], who was awarded the Godwin Bursary in 1897. Mr. Ayling visited Paris for the purpose of reporting upon the Abattoirs and Cattle Markets there.

The Pugin Student 1897.—The Council have approved the work executed by Mr. William Haywood, who was elected the Pugin Student of 1897, and who travelled in the counties of Hampshire, Somersetshire, and Wiltshire.

The Owen Jones Student 1897.—The Council have approved the Report and Drawings executed by Mr. Arthur Edward Henderson, who was awarded the Owen Jones Studentship in 1897, and who travelled in Greece and Turkey.

The Aldwinckle Students 1896 and 1897.—The Council have approved the Reports and Drawings executed by Mr. Hubert Springford East [A.], who was awarded the Aldwinckle Studentship for 1896, and Mr. Arthur Troyte Griffith, who was awarded the Aldwinckle Studentship for 1897. Both gentlemen travelled in Spain for a period of not less than eight weeks.

In witness whereof the Common Seal has been hereunto affixed this seventeenth day of January 1898, at a meeting of the Council.—ERNEST GEORGE, *Vice-President*; EDW. A. GRUNING, *Vice-President*; WM. EMERSON, *Hon. Secretary*; R. SELDEN WORNUM, JOHN SLATER, *Members of Council*; W. J. LOCKE, *Secretary*.

The President's Academy Honours.

At the instance of Professor Roger Smith [F.] Monday's Meeting became the occasion of very hearty felicitations to the President on his recent election to the ranks of the Royal Academicians. Professor Roger Smith, in tendering the congratulations of the Institute, observed that the Royal Academy had done itself an honour, and members felt that this well-deserved reward was to a certain extent a feather in the cap of the Institute, as well as a recognition of the great learning and the great skill which the President had placed so freely at the disposal of the Academy as its Professor of Architecture. Those who had heard his Lectures and those who had read them must feel that the erudition, research, and wisdom combined in them were among the circumstances which had tended, together with his works and his standing, to procure this distinction; and he ventured, in the name of the Meeting, and in the name of the

* John Stevens Lee [*Student R.I.B.A.*].

† Thomas A. Pole [A.]. ‡ Harbottle Reed.

§ W. Stanley Bates [A.].

Institute, to offer the President the very cordial congratulations of his professional brethren. While speaking, he should be glad to be allowed to represent for a moment that body of students who were so largely present that evening. He (the speaker) had been trying for a good many years to teach Architecture, and that circumstance at least, if nothing else, had kept him a student from day to day, and from hour to hour; therefore he wished as a student to thank the President for the stirring words he had addressed to them that evening, and for the many wise and pregnant suggestions the Address had contained. In conclusion, he begged the President to accept the congratulations of the Institute, which he had ventured to offer on its behalf.

THE PRESIDENT, in reply, said: I am extremely obliged to my dear old friend Professor Roger Smith and the other members of the Institute for the kind and enthusiastic manner in which they have received the news of my being made a Royal Academician. It is needless to say that the honour is very agreeable to me. It does not, however, follow that such a distinction may be agreeable to my brother architects; I therefore consider myself very fortunate that the bulk of my profession and my friends have congratulated me in a way that I had no reason to expect. As Professor of the Royal Academy for ten years, and as Lecturer there before for many years, I have endeavoured to do my duty, and to this end I have spared no time and no endeavour; and in doing so, I have tried to find out how the art to which I have the honour of belonging may again become progressive, although I am a very humble member of that noble art. I most sincerely hope that the importance of architecture to the nation, and, in a secondary way, to the world, may be fully grasped by the public; and that we may look forward in the next century to a much greater recognition of its merits and to the important duties it performs. All architects, however old they may be, so long as their faculties continue, must always be humble students. I certainly feel the greatest interest in our students and the greatest desire for their welfare; and when I say our students, I do not mean only in this room or belonging to this Institute, but every architectural student in the United Kingdom, and I may say in the world. I feel that there is the possibility for those to whom Nature has been bountiful enough to give the power of genius, to gain for themselves a certain immortality, and also to confer an inestimable benefit upon their country. Just consider what the architects who built the great temples and the Propylæum in Greece, the admired monuments of Rome, and those of the Middle Ages, and of Italy and of France conferred not only on their country, but on the world. Every person who professes to have a desire for cultivation and enlightenment, and who has the means, goes to Athens, to Rome, to Constanti-

nople, to Florence and to France, to see those great works of men not only who, as Marcus Aurelius says, are dead, but also the undertakers who buried them. It is a great thing in any of the fine arts to create something that is an enduring monument to your country and will be admired hereafter by the world; I think that genius prompts those who have it to do their utmost, "to scorn delights and live laborious days," so that they may improve their powers and bring their work to perfection by striving, by pains, and by self-denial. Nothing can be more becoming in them, nothing can be finer for the country, nothing can be better for the world; for it is an example for all to follow. Let us hope that amongst our students, so many of whom have gained prizes to-night, some may hereafter execute works that will give distinction to their country. I thank you again for all your kindness.

The Phebe Hearst Architectural Competition for the University of California.*

All the details of this International Competition (in so far as they are not affected by certain reservations made by the Trustees) have now been arranged, and Programmes and Maps have been sent to the Royal Institute of British Architects for distribution. These will be forwarded, on application to the Secretary, to any architect in Great Britain. They are on view in the rooms of the various Allied Architectural Societies; they can also be inspected in the Library of the Royal Institute, at 9 Conduit Street, where, in addition, a set of photographs and a plaster relief map of the site are exhibited. The Secretary will be happy to afford facilities for viewing these to any member of the profession.

Subjoined is an abstract of the Programme, the "Particular Programmes of the Composition of each Group" of buildings being omitted. The accompanying map is a reproduction to smaller scale of the one that is forwarded to competitors together with the Programmes.

The Trustees appointed by Mrs. Phebe A. Hearst hereby invite the co-operation of the architects of the world in the preparation of a permanent, general plan of the buildings and grounds which are to compose the University of California, in Berkeley (near San Francisco), California.—J. B. REINSTEIN, JAMES H. BULD, WM. CAREY JONES, Trustees of the Phebe Hearst Architectural Plan of the University of California.

Dated at San Francisco, California, 3rd December 1897.

In the preparation of the Programme for this co-operation the Trustees have been favoured with the counsel and aid of eminent architects and artists, to all of whom they desire hereby to acknowledge their grateful obligation.

The competition will be double, *i.e.* preliminary and final.

RULES OF THE PRELIMINARY COMPETITION.

The architects of all countries are invited to participate. The University of California entrusts the distribution of

* A general description of the scheme appeared in the *Journal* of 6th November last, p. 12.



GROUNDS AND BUILDINGS
 OF THE
UNIVERSITY OF CALIFORNIA
 BERKELEY,
 ALAMEDA COUNTY,
 CALIFORNIA
 1" = 500'

Compiled under the direction of the
College of Civil Engineers
of the University

SCALE
100 200 300 FEET

1897.

From Surveys of
Capt. C. and Richard L. B. S.
and M. G. R. 1851-1852

Boundaries of University Grounds
Marked Thus

Drawn by
George Sandon and
J. C. Henkens

Direction of Great Diagonal
from the 1852 to the
1851 Survey of the
1852 Survey of the
1851 Survey of the
1852 Survey of the
1851 Survey of the

Contours Below 400 feet, 4' Intervals
Above - - - 5' ft.
Datum Mean High Tide of San Francisco Bay as determined by the State Tide and Survey

this Programme and of the other documents and materials necessary for the competitors, as follows:—

Argentine Republic: Minister of Foreign Affairs, Buenos Ayres.

Austria-Hungary: Architekten-Club, Künstler-Haus, No. 9, Lothringer Strasse, Vienna; Magyar Mernök és Építész, Egyesület ker Ujvilaguteza 2, Budapest IV, Hungary.

Belgium: Société Centrale d'Architecture de Belgique, Palais de la Bourse, Rue de Midi, Brussels.

Brazil: Minister of Foreign Affairs, Rio de Janeiro.

Canada: Mr. A. T. Taylor, Hon. Secretary for R.I.B.A., 43, St. François Xavier Street, Montreal.

Chile: Minister of Foreign Affairs, Santiago.

China: Minister of Foreign Affairs, Pekin.

Denmark: Dansk Arkitekt Forening, Nybrogade, 26, Copenhagen.

France: Société Centrale des Architectes Français, Boulevard Saint-Germain, 168, Paris.

Germany: Münchner Architekten- und Ingenieur-Verein, c/o Herr Kreisbaurath Richard Reverdy, No. 8, Weinstrasse, Munich; Vereinigung Berliner Architekten, c/o K. E. O. Fritsch, No. 21, Keith-Strasse, Berlin.

Great Britain and Colonies: Royal Institute of British Architects, 9, Conduit Street, Hanover Square, London, W.

Holland: Société Architectura et Amicitia, c/o K. de Bazel, Architecte, 118, Nicolaas Beetsstraat, Amsterdam.

Italy: Cultori di Architettura, Via de Burro, 151, Rome; Collegio degli Ingegneri ed Architetti, No. 1, Via Cernaia, Milan.

Japan: Minister of Foreign Affairs, Tokio.

Mexico: Señor Ingo. Don M. Fernandez Leal, Presidente de la Asociacion de Ingenieros y Arquitectos, City of Mexico.

Norway: Norske Ingeniør Arkitektforening, Christiania.

Portugal: Real Associação dos Architectos Civis e Archeólogos Portuguezes, Lisbon.

Roumania: Societatea Technica, Calea Victoriei, Bucharest, Roumania.

Russia: Société Impériale des Architectes de St.-Petersbourg, St. Petersburg; Cercle des Architectes de Moscou, Moscow.

Spain: Real Academia de San Fernando, Madrid.

Sweden: Svenska Teknologföreningen, Stockholm.

Switzerland: Société Suisse des Architectes et Ingénieurs, c/o M. Geiser, Zürich.

Turkey: Son Excellence le Ministre de l'Instruction Publique et des Beaux Arts, Constantinople.

United States of America: Chapters of American Institute of Architects, Boston, Brooklyn, Buffalo, Chicago, Cincinnati, Cleveland, Denver, Detroit, Indianapolis, Kansas City, Los Angeles, Lynchburg, Va., New York, Philadelphia, Pittsburgh, Providence, Rochester, San Francisco, Seattle, St. Louis, Washington, and the Mayors of the other principal cities.

In order to assure to all competitors the same period of time, a sealed parcel containing copies of the Programme, plans of the grounds, and other materials will be deposited at each of the above-named addresses.

Copies of the Programme and maps will be handed or sent to all architects who may ask for them.

The competition will be closed on the 1st day of July 1898, at noon, before which date the plans must be deposited by the competitors with the United States Consul at Antwerp, Belgium.

The plans are to be designated by devices or distinctive signs.

The Jury will be international. For the Preliminary Competition it will be composed of five members, viz.: Messrs. R. Norman Shaw, 6 Ellerdale Road, Hampstead, London. J. L. Pascal, 8 Boulevard St. Denis, Paris. Paul Wallot, 6 Hähnel-Strasse, Dresden.

Walter Cook, 674 Broadway, New York, N.Y.

J. B. Reinstein, 217 Sansome Street, San Francisco.

The members of the Jury shall have no knowledge of the authorship of any plan, nor shall they counsel any competitor, nor take part in any way in this competition, except as members of the Jury. In case of the inability of any juror to act as such, the remaining jurors shall select a juror to act in his place.

The Preliminary Competition will be decided at Antwerp, Belgium, and will not be preceded or followed by any public exhibition whatever. The retained plans will not be classified; the Jury will proceed by elimination. The decisions of the Jury will be without appeal. The grounds for their decision will not be given. Judgment will be passed simultaneously on all the plans.

The maximum number of plans to be retained is not settled in advance. The Jury will retain all the plans which it shall deem worthy of being kept, but at least ten. The plans retained from the Preliminary Competition will become the property of the University of California. The name of a successful author will not be published without his consent.

The authors of plans retained will receive a premium of \$1500 each, if only ten plans are retained; not less than \$1200 each, if not exceeding fifteen plans are retained; and not less than \$1000 each, if more than fifteen plans are retained, all payments being conditioned on the next Article.

The above stated premiums will be paid to the authors of the retained plans as follows: 1st, a *third* within the month following the judgment. 2nd, *two-thirds* after the execution and delivery of the final plan. Consequently, the author of a retained plan, who may not enter the Final Competition, will be entitled to only one-third the premium; the balance shall be forfeited to the Trustees.

The rejected plans will be returned.

RULES OF THE FINAL COMPETITION.

None but the competitors whose preliminary plans have been retained by the Jury of the Preliminary Competition will be allowed to take part in the Final Competition. They will be notified individually, by registered letter, of their admission to this second competition.

Although the Programme of the Final Competition is, in the main, determined, and the competitors in the Preliminary Competition are hereby apprised of it, still the Jury of the Preliminary Competition will have the right to make alterations in the Programme for the Final Competition. The Jury will request suggestions and ideas in this connection from the architects taking part in the Final Competition.

Competitors successful in the Preliminary Competition, wishing to study the site of the proposed buildings on the ground, will receive first-class transportation and expenses for the journey from their places of residence to San Francisco and return.

Competitors successful in the Preliminary Competition will have not less than six months, after the decision in the Preliminary Competition, within which to send in their plans for the Final Competition.

The Jury of the Final Competition will be composed of: 1st, the five members of the Jury of the Preliminary Competition. 2nd, of four architects who will be chosen by the Trustees of the Phebe Hearst Architectural Plan, aided by lists of names proposed by the competitors successful in the Preliminary Competition.

It is to be understood that the competitors will have full liberty either to preserve or to modify the composition which they will have presented at the Preliminary Competition.

A total sum of at least \$20,000 will be devoted to premiums for the best plans. At least \$8,000 of this sum will be awarded to the plan classed as No. 1. At least five of the plans will be awarded a premium. But the Jury retains the right of distributing the total allotment of

money among a greater number of plans, taking into consideration the number and merit of the compositions submitted to its examination. Consequently, the Jury will first decide upon the amount of the second premium, then of the third, and so on, until the sum total of at least \$20,000, as stipulated above, is reached. After this has been done, the premiums will be awarded by a secret ballot calling for an absolute majority. Should it happen that two candidates receive the same number of votes for a particular premium, the premium voted upon, and the next in order, will be added together and their sum total divided evenly between the two candidates. If this parity should happen for the last premium, this will be divided evenly between the two candidates.

The University of California reserves for itself the right of entire control and direction in the matter of the execution of the work. The rewarded plans will become its property, and it will be at liberty to select therefrom any idea that it may desire. The Jury, however, after taking into consideration the value of the plan as well as the references and certificates that the competitors will have enclosed in the envelope containing their names, will declare whether the architect, author of the plan classed as No. 1, seems to offer the guarantees which would justify his being entrusted with the execution of the earlier work to be undertaken. The Jury may extend its opinion so as to show, in like manner, its appreciation of the other rewarded plans.

Should the University wish to confide the direction of the work to the author of the first-prized plan, or, if he decline, to one of the architects having received a premium, a contract for the direction of the work will be drawn between the University and the architect, conditioned upon the suggestions and advice of the Jury; it being well understood that, if such a contract is made, it will be a desirable consequence of the competition, but in no wise a condition thereof.

The Jury's decisions will be without appeal. The fact of a candidate taking part in the competition implies his acceptance of all the conditions of the present specifications and Programme.

PROGRAMME OF THE ARCHITECTS.

By "University" is meant the collection of all the buildings necessary for the teaching of higher branches of learning. Each department of instruction will have, as nearly as may be, its own building or buildings. These buildings will be erected successively as the funds for the purpose become available, and, under all circumstances, according to a previously formulated plan of the whole University. The plan is to include provision for the residence of the students. Important divisions for the common use and service are to be provided. Provision for free access and easy communication, both open and covered, within the University limits, is an essential part of the Programme. The desire is that the general arrangement should assume an imposing aspect, of a serious and noble character, that will at the same time harmonize with the picturesque nature of the grounds, their situation and topography.

The City of Berkeley, near San Francisco, is situated on the shore of a large Bay, called the Bay of San Francisco, nearly opposite the straits, known as the Golden Gate, which connect the Bay with the Pacific Ocean. Resting against a mountainous background, the city is situated on a gentle slope, the rise increasing as it recedes from the Bay. The location reserved for the University begins about two miles east of the shore-line of the Bay, and extends beyond the city, on hilly ground. While the principal entrance to the University grounds is at present Center Street, on the western boundary, architects are free to provide other entrances, either for the principal approach,

or for side ones. There is a ferry from San Francisco to Berkeley at the foot of University Avenue, and a railroad from San Francisco to Berkeley, and other railroads, as shown on the topographical map accompanying this Programme.

The grounds of the University are represented on the maps accompanying this Programme. First, on the small general map, showing their situation with reference to the City of Berkeley; secondly, on the topographical plan, the red line [*the thick black line on the lithographed plan herewith*] indicating their boundaries. The architect, however, need not be restricted by the indicated northern boundary, but, if his composition so require, may extend the northern boundary to the nearest brook or watercourse. This watercourse will be found delineated on the small general map.

The perimeter of the grounds is irregular; their greatest length is about 1,870 meters, extending almost due East and West, and their greatest width about 770 meters. The slope of the grounds is marked on the plan by contour lines, in English feet. The least altitude is 198 feet (60.3 m.), on the side nearest the shore of the Bay, the highest, 964 feet (293.6 m.), making a difference in the level of 766 feet (233.3 m.) (The English foot = .3046 m.).

In the grounds there are two brooks which join before leaving the grounds. The grounds are partly planted with beautiful trees, which should, as far as possible, be preserved; the trees which are to be especially preserved are those within one hundred feet of the brooks. There are also various buildings now standing on the grounds which need not be taken into consideration; nor need present paths or roads be considered.

The soil is generally firm, and offers no particular difficulties for foundations.

The general scheme will comprise:—

1st. Provision for the general and collective purposes common to all the departments, as follows:—Administration; University Library; University Museum; Auditoriums; Military Establishment; Gymnasias; Printing Establishment; Habitation; Club Houses; Infirmary; Approach and Communication:

2nd. Buildings for all things pertaining to the general service of the several departments, such as central power, heat and light station, postal, telephone, and telegraph systems, etc.:

3rd. The Departments of Instruction, so far contemplated, number 15, and the buildings for their accommodation differ much as to their relative size and importance.

These Departments are as follows:—

A. Higher Historical and Literary Instruction.—1. Philosophy and Pedagogy; 2. Jurisprudence; 3. History and Political Science; 4. Ancient and Modern Languages.

B. Higher Scientific Instruction.—5. Mathematics; 6. Physics; 7. Astronomy; 8. Chemistry; 9. Natural History (Zoology, Botany, Geology, and Mineralogy).

C. Technical and Applied Instruction.—10. Fine Arts; 11. Agriculture; 12. Mechanical Engineering; 13. Civil Engineering; 14. Mining; 15. Draughting and Graphical Analysis.

All are to be so connected as to insure easy communication, both open and covered, between the groups or buildings, and to contribute to the stately aspect of the whole.

PRESENTATION OF THE PLAN.

Preliminary Competition.

Each plan will comprise:

1. A general plan, showing the ground floor of all the buildings, on the scale of the topographical chart accompanying the Programme (100 feet to the inch, or 1/1200 scale). This plan will indicate the buildings in detail, and not in mass. The plans will show the contour lines of the topographical chart.

2. A general elevation, on the same scale as the plan.
3. General section on the same scale.

The elevation and the section are to be taken at such points as in the judgment of the author will best illustrate his plan.

Final Competition.

For the Final Competition, the Jury of the Preliminary Competition will determine what drawings are to be required from the competitors in order to show their understanding of the general composition, and of the character of the study (*des qualités d'étude*). For that purpose they may be required to give whole divisions or sets of buildings, and also a particular study of one of the groups that may be designated by the Jury after the Preliminary Competition. The Jury will also determine the more detailed Programme of this group; but subject to the above power on the part of the Jury the plans required in the Final Competition will be:

1. A general plan, showing the ground floor of all the buildings.
2. A general section.
3. A general elevation. The section and elevation are to be taken at such points as in the judgment of the author will best illustrate his plan.
4. A general perspective.

The drawings must all be original; no reproductions by photographic or other processes will be permitted.

Maps, photographs, casts, and necessary documents can be obtained from Mr. B. R. Maybeck, No. 7 Rue Honoré Chevalier, Paris, France, or from the Trustees.

All requests for information should be addressed to "Trustees Phebe Hearst Architectural Plan, University of California, 217 Sansome Street, San Francisco, California."

A Teaching University for London.

The Lord President of the Council received at the Privy Council Office on Monday, the 24th inst., a deputation of the Senate of the University of London, and of representatives of the institutions and bodies mentioned in the Report of the Cowper Commission, and in the University of London Commission Bill of last session. Mr. Arthur Cates and Mr. John Slater attended on behalf of the Royal Institute. The object of the deputation was to urge the Lord President of the Council to reintroduce at an early period of the coming session of Parliament, the London University Commission Bill of last session. The Duke of Devonshire gave an assurance of the sympathy of the Government with the principles of the Bill, and a promise of their support.

The Cantor Lectures at the Society of Arts.

Mr. Hugh Stannus's Cantor Lectures at the Society of Arts on the subject "The Principles of Design in Form," will be given at 8 p.m. on the four Mondays from February 14th to March 7th inclusive. Mr. Stannus, thinking that these lectures may be of interest to junior members of the profession, has kindly permitted the fact to be announced in the JOURNAL that tickets of admission will be given on application at the Society's house, No. 10, John Street, Adelphi.

REVIEWS. LXV.

(179)

MODERN ARCHITECTURE.

Modern Architecture: A Book for Architects and the Public. By H. Heathcote Statham F.R.I.B.A., Editor of "The Builder," Author of "Architecture for General Readers," "Form and Design in Music," "Changes in London Building Law," &c. With numerous Illustrations of Contemporary Buildings. 80. Lond. 1897. Price 10s. 6d. [Messrs. Chapman & Hall, Limited, Henrietta Street, Covent Garden.]

A book on Modern Architecture by the Editor of *The Builder* should excite no surprise. It is a production as natural as a river flowing from a lake. Yet there are some lakes which never either overflow or fructify—dead seas into whose arid basins Jordans pour their baptismal waters in vain. And there have been, and are, editors whose mental sterility has yielded no overflow of confluent streams, no rivers of literary and artistic refreshment, and no fruit more sweet than cynical reviews and sarcastic articles as innutritious as apples of Sodom.

Mr. Statham, by his frequent and valuable contributions to the discussions at the Institute meetings, and by his *Architecture for General Readers* and other published works, has given proof on proof that he realises the truth of the divine adage "It is more blessed to give than to receive;" and this, his most recent book, *Modern Architecture*, is a fresh and notable illustration of his faith in that great fact.

This book is an earnest, sober review of the works of contemporary architects. Utterly free from the carping cantankerousness of much modern criticism, nearly every page betrays a most excellent judgment, as innocent of apparent partiality as of any display of enthusiasm; so that intelligent readers, not slavishly devoted to some fad or fashion, will find it difficult, not to say impossible, to disagree with the views and conclusions which the author supports by such strong common sense as leavens the book from cover to cover.

If the mind of the author had been less well balanced, his book might have been more fascinating. But one John Ruskin per century is, seemingly, sufficient.

There is something in the general get-up of *Modern Architecture* slightly reminding one of *How to Build a House*, that charming book by Viollet-Le-Duc which somehow combines sprightliness with instruction, and seems a happy sort of compromise between the inspired eloquence and glorious nonsense of the greatest of all art writers and the slogging, pithy, dead-earnest unaffectedness of Mr. Statham's last book.

Yet this reference and comparison are hardly fair; for who would complain that Johnson's

Dictionary is less attractive than his *Rasselas*? And though Mr. Statham's book is by no means uninteresting, it is, from the compendious nature of its subject and treatment, a much more comprehensive and ample undertaking than the pretty and clever *jeu de plume* with which the great French architect whiled away his short summer holiday "in the days when we went gipsying, a long time ago."

Indeed, Mr. Statham's is an undertaking the seriousness and size of which are not to be measured by the businesslike method and the boiled-down substance of this very compact volume; for to face so big a task as the title "Modern Architecture" involves would betoken great daring, even in the case of an author not otherwise engaged, and is the more remarkable in the case of one continually weighted with other work so absorbing and responsible as falls to the Editor of *The Builder*, which we may look upon as *The Times* of the architectural world.

But the aids, rather than the hindrances, of his everyday life must have been present to the author's mind when he first took this book in hand, for certainly the illustrations, which enrich his pages and enforce his arguments and views, afford striking evidence of the ready wit by which those helps specially available to the *editor* have been harnessed to the *author's* chariot.

The work is so wide in its range that it is not possible even casually to indicate its multifarious subjects within the compass of this notice. Many notices would be necessary to do such a book full justice. Indeed, its comprehensiveness (in regard to general subjects, though not to particular examples) is so nearly complete as to render the few subjects of importance which have been ignored the more conspicuous by their absence.

In the short list of entirely omitted or inadequately treated subjects may be mentioned (as architectural works specially representative of modern times) Hospitals, Lunatic Asylums, great Exhibition Buildings, and Railway Stations. It is open to Mr. Statham to make a very interesting and valuable supplement to his book, by treating of these, and a few other scarcely less important neglected topics, such as Markets, Abattoirs, Barracks, Horticultural Buildings, and Corn Exchanges, in the form of an *addendum* to a future edition.

The most romantically attractive, and at the same time a somewhat faulty, feature of the volume is its frontispiece, drawn by the author's own hand—a "Sketch for Tower Bridge, showing suspension chains carried by the masonry, the inner girder of high-level bridge shown visibly as the carrier of the tension chain."

It is cruel of Mr. Statham to publish this charming design *now*, for no one who has seen it can afterwards view otherwise than regretfully the Tower Bridge as it stands. If "where ignorance is

bliss 'tis folly to be wise," how shall we excuse our author from inflicting upon previously blissful (?) London permanent discontent with the architecture of its bridge, whose engineering features, by the way, might also even more thoroughly than its architectural treatment be likewise discredited, if some engineering minds now, when too late, were frankly to show, as they certainly could, what would have been the more excellent way?

It is rather funny to find certain musical composers explaining their music, which is better felt than reasoned about. It is likewise funny to find Mr. Statham so philosophically commending his Tower Bridge architecture, because of its constructional characteristics; and, though no one can deny that he is right in his contention that the stone towers should really support the high-level bridge and chains, his other contention—that the attachment of the chains to the high-level girders should be visible as a feature of the design—is no more rational than to argue that, in the unchallenged architecture of the human form divine, the junction of the skull with the vertebral column should be unconcealed by the fleshy tissues of the neck or the falling tresses of a lady's hair.

The fact is, the charm of Mr. Statham's design for the bridge towers is *not* due to the structural considerations which he names (be they proper or mistaken), but is due, as Mr. Statham is well aware, to purely artistic and romantic qualities, which the true architect and artist will understand at a glance, and which can be much better felt than defined.

It is a question whether pedestrians would have tolerated such a constriction of the roadway and footway as Mr. Statham's towers would apparently have occasioned.

The drawing itself is very charming as a sketch in line. It is also very defective in so barely hinting, and in no degree adequately expressing, the main engineering feature—*i.e.*, the hinged cantilevers of the low-level bridge. In the wrongly differing slants of the two broad shadows under the low-level bridge there is also a fault not pleasant in a sketch occupying so prominent a position as this frontispiece. But the sketch is so pleasing in spite of these flaws that one willingly ceases to dwell on them. It is an old and true saying "If we don't love our friends with their faults, we shall never love them at all;" and this holds good of architectural sketches, which are often, like certain of our friends, rendered the more charming by such pardonable faults as serve to accentuate their virtues.

The same mediævalism which characterises so romantically these bridge towers is the prevailing feeling of Mr. Statham's very masculine, well-known competition design for Edinburgh Municipal Buildings, the side elevation of which the

author very aptly introduces into the present work [fig. 52] to illustrate certain principles of design for which he argues strongly and well. The elevation is so original that when it first appeared it gave most people who saw it the notion of something quite unusual, if not decidedly *queer*. But on closer acquaintance this feeling wore off, and the design as a whole began to show many fine qualities. Certainly it would have formed a very striking feature on the steep bank of the Old Edinburgh side of Princes' Gardens; but it would have jostled somewhat strangely its modern classic neighbours to the west; and it is not easy to

continue to "endure" the heavy solemn old-worldism of Street's monastic Law Courts, as we might have welcomed likewise Statham's romantic Tower Bridge and his eerie Edinburgh Municipal Buildings. But to the author was reserved by Fate this disappointment, qualifying him to appreciate fully, as sadly too many competing architects do, the consolation of Burns's sweet assurance that

The best laid schemes o' mice and men
Gang aft agley.

It is difficult from a book so replete with sound arguments, common-sense views, and excellent illustrations of what the author thinks good and what bad in modern architecture, to select or specify passages or pictures adequate to convey a proper impression of the work as a whole, especially as it deals not with British architecture only, but with Continental and American also. Indeed, it is a book which must be carefully read and re-read. It is too strong meat to be all taken at one meal. Yet it is too continuous in its interest and subject to be treated as a mere book of reference. It is purposely adapted to the non-professional reader as well as to the architect, and is so plainly and clearly written that "a wayfaring man, though a fool, cannot err therein."

Young architects, who sometimes have abounding enthusiasm and very little sense, would find in this book plenty of good advice to restrain their idiotic tendencies; and no young or old architect, however sensible and clever, could read it without laying his clients, as well as himself, under lasting obligation to the writer for his excellent counselling and directive views on important subjects which call for judgment and action by all architects in practice.

It is very pleasant, after the many diatribes of great art-critics against the architecture of the Houses of Parliament, to find Mr. Statham subscribing himself as a devoted admirer of Barry's beautiful buildings, of which he justly says:—

"The Houses of Parliament is in an architectural sense the finest national legislative palace in the world, and one of the best and most original architectural conceptions, ancient or modern; it is a building of which the country might well be



FIG. 52.—COMPETITION DESIGN FOR EDINBURGH MUNICIPAL BUILDINGS: SIDE ELEVATION (Mr. H. H. Statham.)

understand how the author, who (it must be confessed, with much reason) regards Street's Law Courts as "a costly and inconvenient anachronism" in the higgledy-piggledy Strand, could, consistently with that view, have planted his own stern, and rather German, mediæval creation amid the classic environments of "Modern Athens."

But, after all, let critics say what they like, too much harmony in the architecture of a city, like an excess of dull virtue, makes us miserable in monotony. Piquancy and romantic individuality in buildings, if not carried to distraction, add to the attractiveness and interest of city architecture, and really make the lives of citizens more worth living. In this view of the case we may gladly

proud, and it is to be regretted that Englishmen in general appear to be so very little aware of its merits."

Mr. Statham shows that Barry's plan has been more or less copied in other legislative palaces, but in none with the full measure of its original success. It is a pity he does not give a view of the river front. This would have made a fitter, though less novel or surprising and less Statham-esque, frontispiece to an English work on Modern Architecture than the author's own unexecuted design of Tower Bridge. It would be only in harmony with his profound admiration and feeling for Barry if, in the next edition of *Modern Architecture*, he would thus confirm what he has so well written in the passage above quoted; and his Tower Bridge design might in that case well remain as a not unworthy companion frontispiece, or it might, without impropriety or loss of its proper dignity, be relegated to that part of the volume where it is referred to in the letterpress.

Probably without for one moment intending it, Mr. Statham has made his book a kind of nineteenth-century architectural Walhalla. He would be startled to find himself regarded as a self-constituted modern St. Peter (!), holding the keys of the Paradise of architects' fame and glory, and would utterly disclaim the intention of excluding those worthy members of the profession (a few of them most justly celebrated) whose names do not appear amongst the 105 which he has inscribed in his Book of Life. Yet the very fact that this recording angel of Modern Architecture has, while apparently free of fear or favour, made his selection of the Immortals probably without realising that Fate had converted his pen into a divining rod separating the architectural sheep and goats—this fact (if it so be) of Mr. Statham's unconsciousness of the doom which his pen was involuntarily decreeing cannot fail to render its decree the less questionable, and therefore the more final; so that those of us who are left out of the count may weep and wail and gnash our teeth in vain!

It is further interesting to observe that in this architectural Walhalla, as well as in that other Heaven of which we have heard from our childhood, there is no dearth of surprises. Thus, while on the one hand certain rich and famous architects, like Dives, have no place, on the other hand there are not a few architects immortalised herein of whose obscure work the world has been all too unaware; and it is both surprising and amusing, as well as instructive, to see how Mr. Statham, with Abrahamian wisdom, and justice not unseasoned by mercy, entertains architects of this Lazarus type in the bosom of his book.

Whether the peopling of Mr. Statham's Walhalla has resulted from deliberate picking and

choosing, or from a happy-go-lucky chance selection merely from those architects whose designs happen to have appeared from time to time in the pages of *The Builder*, it is noteworthy that some of the greatest modern architects who are included in the 105 list appear to have got in only by the skin of their teeth; for though they themselves have been saved from oblivion, their works have neither place nor mention in this book! To specify names in this connection would be invidious; but to any architect who carefully reads the book the application of this remark will be sufficiently obvious.

But the slenderness and insufficiency of the author's references to certain great workers and their works is perhaps due less to inadvertence than to a desire to fill the volume with new matter, and to refrain from repeating of certain eminent modern architects and their buildings observations which have become familiar as household words among us, and may be held to go without saying. So that the author's reticence towards these admitted notables may be regarded as not only unintentional, but as negatively complimentary, rather than positively disdainful.

Mr. Statham's book is happily not tainted with any of that pessimism which poisons so much art-criticism. He is able and willing to recognise real progress in art. Thus, for example, in his chapter on street architecture, he says:—

"When we compare Grosvenor Place and Cromwell Road with some more recent streets not far from them, the difference is indeed immense, and very gratifying."

The force of this observation would have been more fully realised, and the interest and attractiveness of the book enhanced, if just here had appeared a photoprint of some dismal regulation-house-front in Cromwell Road, side by side with another photoprint of, say, one of Ernest George's delightfully dainty South Kensington house porches.

Sometimes the author puts forward illustrations which, while they serve well enough to exhibit the feature or principle of design to which his argument particularly directs itself, yet refer to buildings that, in other respects, are so very ordinary or so objectionable as to make one wish a worthier example had been chosen; and sometimes, to illustrate one and the same point, the author will give two examples, one very *reeherché*, and another very miserable, without adding a word of praise on the one hand or blame on the other, so long as they serve his use. Thus, to illustrate the advisability of keeping the projecting cornices and stringmoulds of street-fronts well within their own boundary, and leaving a strip of flat wall-face on each side to receive the mitred and returned ends of same, Mr. Statham gives as examples figs. 130 and 131.

They both clearly show his point; and it would

be invidious to say which of the two we deem refined, and which unworthy—however good as a *building*—to rank as a specimen of Modern *Architecture*.

It is enough for us general readers to know that a few of the denizens of our author's Walhalla have thus slipped in at the gate, perhaps while St. Statham of the Keys has been enjoying a quiet nap! But it is undesirable to dwell further on such incidents, lest the R.I.B.A. Council should recognise in Mr. Statham's book, and in those who figure therein, an awkward family likeness to the Institute and its present mode of admitting Fellows! It is enough that we recognise in the R.I.B.A. list of Fellows, as also likewise in Mr. Statham's list of 105, amongst the many who have honourably *won* in, just here and there one who has fortunately, if not honourably, *slipped* in. Wheat and tares must grow together until the harvest, which is not yet.

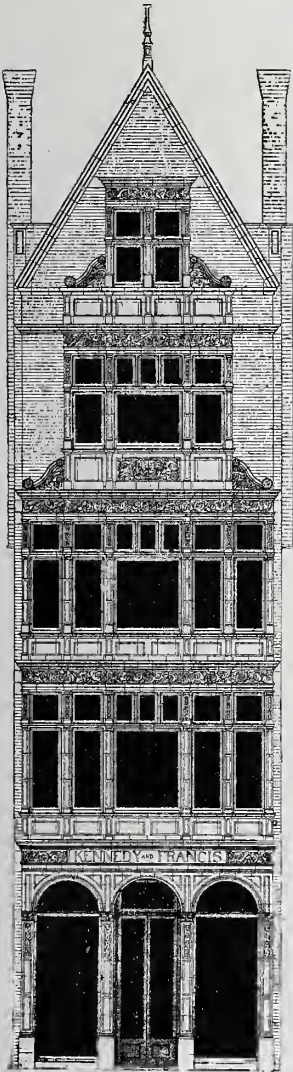


FIG. 130.—SHOP FRONT.
(Messrs. Batterbury & Huxley.)

[fig. 10, p. 162] by the same architect. And yet, in spite of this preference of Mr. Statham, and, as he tells us, also of Mr. Goldie, for fig. 10, the latter gentleman and his building committee ought to have been thankful that circumstances beyond their control happily prevented them from giving effect to this most objectionable treatment of the dome interior, with its four crude pendentives, and four still more crude flat ceilings or dome-planceers,

Well balanced though Mr. Statham's connoisseurship generally is, he is not at all times incapable of error of judgment. Thus, he holds that Mr. Goldie's church as built [fig. 9, p. 162] is like a concert-room, and not so church-like as the alternative (unexecuted) design

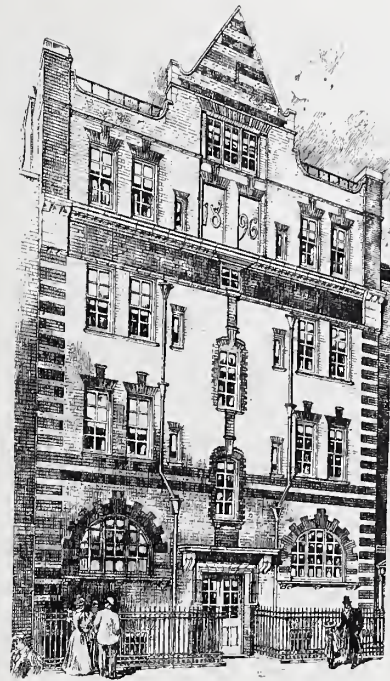


FIG. 131.—STREET FRONT. (Mr. Hargreaves Raffles.)

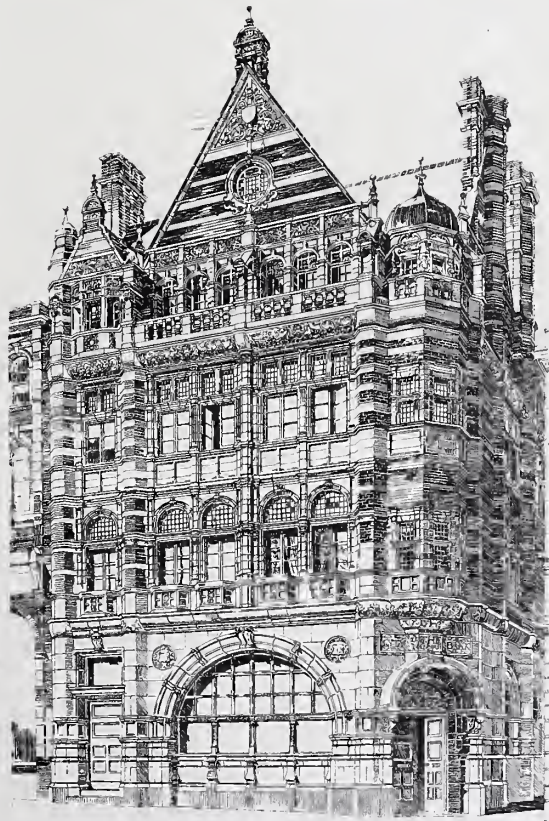


FIG. 134.—CITY BANK, LUDGATE HILL. (Mr. Colcutt.)

which our author passes without challenge, though they are utterly inconsistent with either good construction or good architecture. But that the *plan* of fig. 10 is preferable to the *plan* of fig. 9 may be freely allowed, without committing oneself to approve a domical abortion even more objectionable than those sadly bungled pendentive arches of St. Paul's Cathedral, from which the eye of many a sensitive architect recoils with extreme aversion and pain. The treatment of dome pendentives (like the treatment of the junction of tower and spire) taxes the powers of the best architects, and has often reflected discredit upon them by artistic failure.

While of both dead and living modern architects some of Mr. Collcutt's seniors in fame have

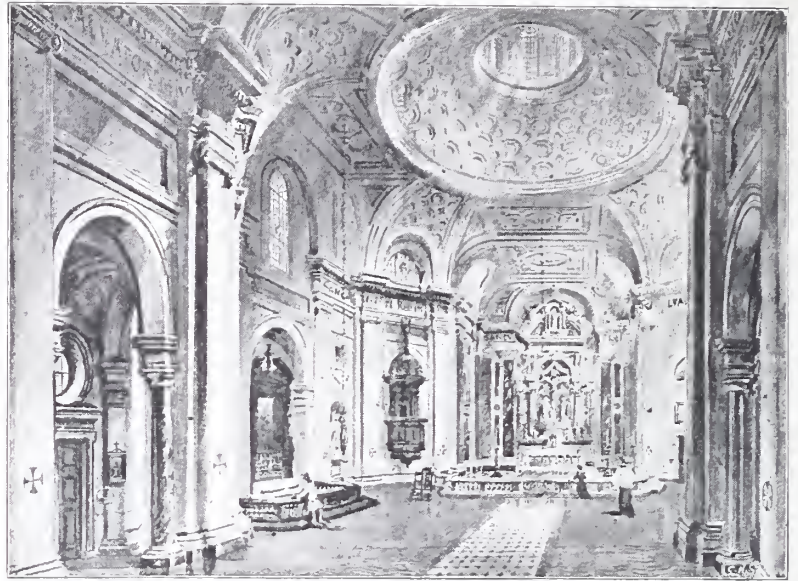


FIG. 10.—THE SAME CHURCH AS ORIGINALLY DESIGNED.

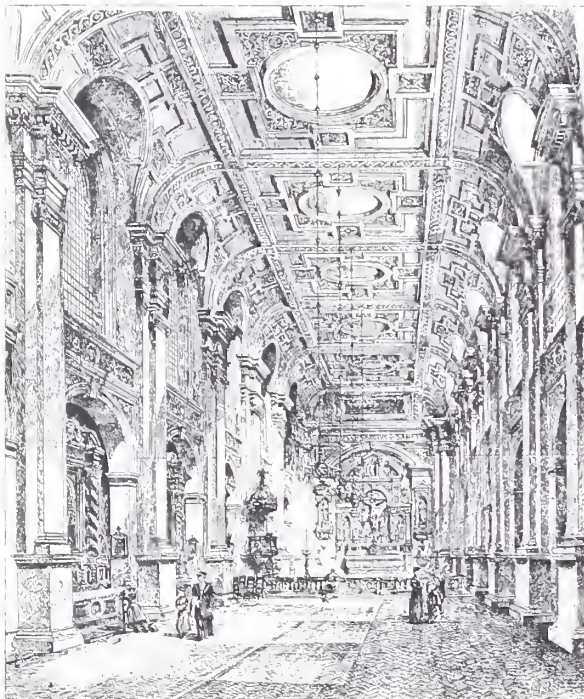


FIG. 9.—CHURCH AS BUILT. (Mr. Goldie.)

received much too scant notice in this book, Mr. Collcutt himself has received both more and less than his proper share. The author would have done Mr. Collcutt a service by omitting his design [fig. 133], which is really one of the least remarkable of that architect's many characteristic productions, and presents no feature worthy of admiring special notice. On the other hand, by omitting from the illustrations the front view of the Imperial Institute, to say nothing of the deservedly famous Shaftesbury Avenue Opera House, the author has prevented Mr. Collcutt from scoring where he would have scored most worthily.

Apparently, Mr. Statham has in this, as in other cases, been a little too anxious to avoid giving to the world in his book that of which the world had already full knowledge. He seems to have thus allowed his fear of staleness to carry him too far into that silence which is not golden. *Modern Architecture* (of London) without Collcutt's front of the Imperial Institute, and without his Opera House, if not exactly "Hamlet," without the Prince of Denmark," is certainly something a little in that line.

However, both Mr. Collcutt and Mr. Statham are to be congratulated on the publication in this book of fig. 134 [p. 161], which is a design so very charac-

teristic, and so entirely perfect and beautiful, that if Mr. Collcutt had no other than this to represent his claim to be counted among the stars of our architectural age, he might herewith rest well content.

It may be felt by some that one or more perspective views of such masterpieces of Modern Architecture as the Manchester Town Hall, the Birmingham Law Courts, and the Albert Memorial in Hyde Park, ought not to have been excluded from the pages of a book which could afford space not only for the never built, though noble, designs for Liverpool Cathedral [figs. 12 and 13], but also for other less noble unrealised designs. And really it must be allowed that Mr. Statham by such omissions is too much like the astronomer who, in giving a popular lecture on the solar system and stars, was careful to avoid all mention of Sun, or Moon, or Charles's Wain, lest people might accuse him of telling them about things familiar enough already!

It is obvious that in the title of his book every writer formulates his claim to be read. If the title were, say, "*The History of England*," and the reader discovered that it was little or nothing more than a *History of London*, he would complain either that the stories of *Winchester*, *Bristol*, *Lincoln*, *York*, and *Carlisle*, &c., had been left out, or else that the title was at fault.

Now the fairest way of putting the case, as it really stands in regard to Mr. Statham's book, is to hold the title at fault. For it cannot be denied, by those who have carefully read it, that the title is too big for this book, if indeed it is not too big for any book; for, after all, how could a modern architect (even if he be also *The Builder's* Editor) describe, or even comprehend, Modern Architecture? It is the element in which the author

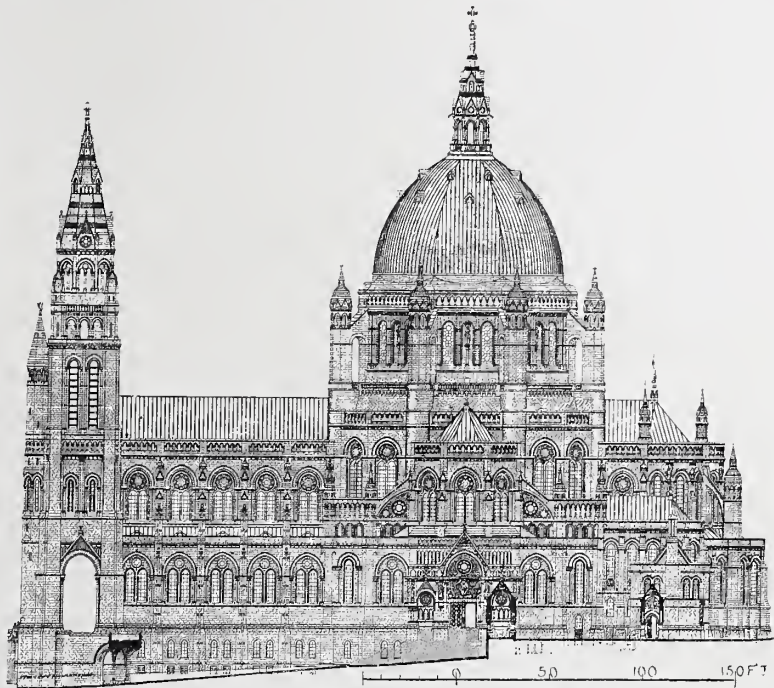


FIG. 12.—MR. EMERSON'S DESIGN FOR LIVERPOOL CATHEDRAL.

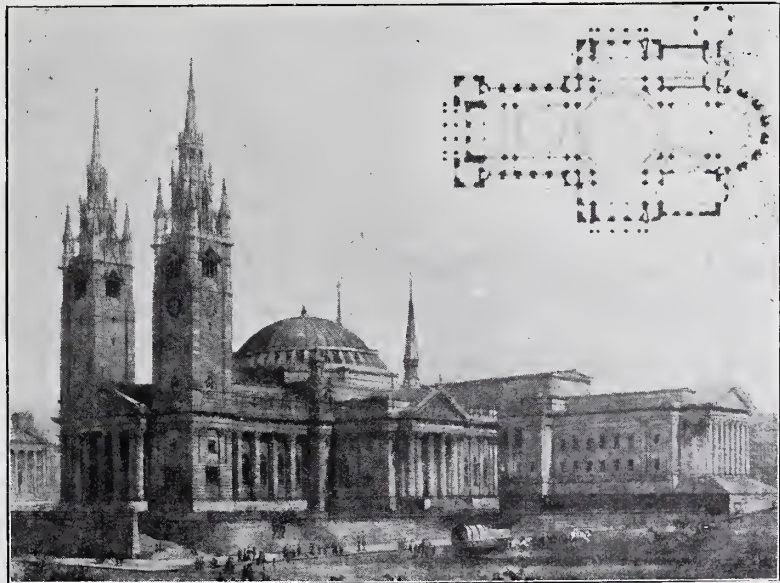
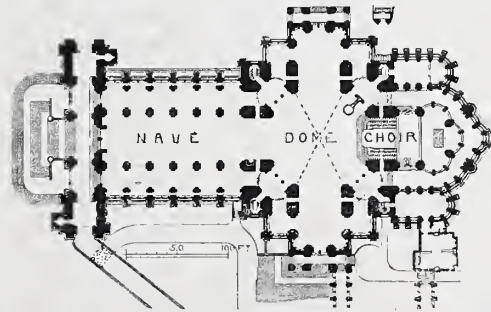


FIG. 13.—MR. HAY'S DESIGN FOR LIVERPOOL CATHEDRAL.

himself lives and moves. As well might a fish attempt to imbibe the ocean and serve it out again in drinks all round to his fellow fishes!

But George Herbert says, "He who aims at the moon shoots higher than he who aims at a tree." We shall not do well, then, to complain that Mr. Statham has aimed at the moon and missed it. On the contrary, we should congratulate him both on the greatness of his aim and the range of his fire. And, while venturing to remind him (of what probably he realises already much more keenly than any of his readers) that his effort falls far short of the prodigious scope expressed in the title "Modern Architecture," yet we should not desire him to alter or limit or lower that title, but rather we should urge and encourage him to increase in each successive edition of his book its actual range and efficiency; and though, in the nature of things, the author's aim in this instance cannot ever be absolutely reached, it can be approximated more and more nearly with each reissue of the book, according to that law of the asymptote, which demands, as a condition essential to progress, a certain decreasing measure of short-coming in each successive step of the endless series of efforts and endeavours to attain that perfection which is unattainable.

Sunderland.

FRANK CAWS.

(180)

ARTISTIC TREATMENT OF HERALDRY.

Decorative Heraldry, a Practical Handbook of its Artistic Treatment. By G. W. Eve. 80. Lond. 1897. Price 10s. 6d. net. [Messrs. George Bell & Sons, York Street, Covent Garden, W.C.]

All who are interested in heraldry will welcome this book, for it contains much practical information, it treats heraldry in the right spirit, and its illustrations are excellent. Mr. Eve is so well known as a heraldic designer, that one wishes there were more of his handiwork reproduced; but his rendering of the various ordinaries and simpler charges which illustrate the chapter entitled "A Primer of Heraldry," show the practised hand of the expert. Heraldry is a vast subject, and accordingly we do not find it exhaustively

treated in this handbook; but enough is said to guide the inquirer in the right way, and to stimulate him to seek fuller information in more monumental works. As the title of the book implies, it is the decorative side of heraldry rather than the scientific which Mr. Eve deals with, but even as to this side he has not said the last word nor drawn the last example. In some respects, indeed, it could be wished that only English heraldry had been dealt with, for then we might have had more English examples to look at, a more complete illustration of the way in which various



EXAMPLE OF BLAZON.

charges were made to look beautiful at different periods of English work. The great attraction of heraldry lies in its decorative qualities; and a number of examples of how the commoner charges, such as lions, dogs, birds, crescents, shells, maunches, and so forth, have been treated in different combinations at different times, would have been most valuable and interesting, and so would examples of the same charges being humoured to fill different kinds of spaces. Then, again, illustrations of the successful treatment of unpromising objects, such as lamps, bellows, trestles, and the like, would have been highly suggestive. But the limits of this book having precluded such things, there is still an opening for a further contribution towards the subject from the same author.

Mr. Eve has dealt with his matter historically—that is to say, after a short introduction and a useful primer of heraldry, he gives five chapters to the five divisions of The Origin of Heraldry, its Development, its Treatment during the Renaissance, its Decadence, and its Revival. Its origin he traces to the East, and he gives illustrations from Chaldean bas-reliefs, Sassanian sculptures, and various coins and gems in support of his views. There is, no doubt, much likelihood of this contention being correct, for it would be no more surprising that the heraldic lions of



PART OF TOMB OF MARGARET BEAUFORT, DUCHESS OF RICHMOND.

Edward the Black Prince in Canterbury Cathedral should derive their lineage from Persia, than that the Cathedral itself should have descended from a remote ancestor on the banks of the Nile. In the development of heraldic forms, as Mr. Eve points out, seals played an important part; not the seal as we are accustomed to think of it—a stone set in a finger-ring—but seals of state, three or four inches in diameter, giving space enough for draughtsmanship. Doubtless, the necessity of proclaiming the identity of the

to be welcomed, as showing how heraldic draughtsmen drew in times past; and it must not at all be taken for granted that they always drew well; their aptitude varied as much as did the carvers' who worked on tombs. But whatever may have been the difference between individual artists, there can be no doubt that the fifteenth century drew and carved heraldry better than the eighteenth or nineteenth; and this decadence is illustrated in our handbook just enough—we do not want to turn to it for bad examples, but good



TERRA-COTTA MEDALLION IN DELLA ROBBIARE WARE. ITALIAN, FIFTEENTH CENTURY.

knight concealed in armour was a prime factor in the introduction of heraldic devices, but comparatively few remains of the shields and helms which bore those devices have come down to us, so we are forced to look elsewhere for information, and nowhere is it so plentiful as on tombs and brasses. In the book that has still to be written on English decorative heraldry, *per se*, these tombs and brasses will figure largely; so will glazing from all kinds of windows, though, probably, in a less degree, owing to the great difficulty of getting accurate reproductions. The illustrations which Mr. Eve gives from MSS. preserved in the College of Arms and elsewhere are

ones. As to the revival of the present day, may success attend it! If it does not, it will not be from the lack of skilful and original designers; nor from the lack of persons eager to be thought armigerous. But are revivals long-lived? And can heraldry be protected from its worst foe, the bogus variety of itself? There is no legal penalty attaching to the use of falsely assumed arms, and what but good sense and good taste is to prevent the pushing upstart from adopting any arms he pleases? And supposing this difficulty removed, can heraldry live in a democratic atmosphere?

Kettering.

J. A. GOTCH.

THE GREAT MOSQUE OF THE OMEIYADES, DAMASCUS.

By R. PHENÈ SPIERS [*F.*], F.S.A.

TWO or three days after I read my Paper on this subject* (delivered a month before the date originally fixed), I received a letter from Dr. Masterman at Damascus making certain corrections in the plan I had forwarded to him. In a note, p. 60 of the *JOURNAL*, Vol. IV., I promised to return to the subject again and supply revised illustrations.

Subsequently my Paper was laid before the Committee of the Palestine Exploration Fund (many of the members of which attended on the evening of its delivery), and they attached so much importance to the subject that they decided to send one of their staff, Mr. Archibald C. Dickie [*A.*], from Jerusalem on to Damascus to make further researches: I supplied him with a copy of my Paper and full notes on the different points I wished to have cleared up. He left Jerusalem in the middle of January, and spent about a month in Damascus. Dr. Masterman was kind enough to guide Mr. Dickie in his researches, and, having already been resident in Damascus for some time, was able to render him material assistance. The results of his discoveries are of considerable value, and they go far beyond what I anticipated. By the kindness of the Committee of the Palestine Exploration Fund, Mr. Dickie's drawings [figs. 1 to 6] have been placed at the disposal of the Institute for publication, and I now redeem my promise made in November last.

My plan of the Mosque and its surroundings was based on the plan published in Fergusson's *History of Architecture*, reproduced from Sir Charles Wilson's drawings made in 1865, which are now lost. As Sir Charles Wilson measured the interior only, I had completed the plan from one published in the Rev. J. Porter's *Five Years in Damascus*, and corrected it from my drawings and photographs. In the plan published herewith [fig. 1], prepared by Mr. Dickie, there are various corrections, partly made from fresh measurements† and partly from a tracing of a plan kindly supplied to Mr. Dickie by Mr. Apéry, the municipal architect of Damascus. Mr. Dickie's plan, however, goes beyond this, in that he has found traces of the great temenos wall which surrounded the Roman temple, and proves to have been of far greater dimensions than the temenos of the Temple of the Sun at Palmyra, published in Dawkins and Wood's work on that subject. He has also discovered a triple doorway, hitherto quite unknown, and other doorways, and

has at last solved the mystery of the great south doorway with its niches, mentioned on page 34 of the *JOURNAL*, Vol. IV.

Probably my best course will be to take up the subject in the same order as that given in my Paper, commencing with the Mosque itself, pointing out the corrections which have to be made, and how far Mr. Dickie's researches bear out the conclusions I had arrived at in the actual date of the Mosque itself.

Of the four ranges of arcades which divided the triple naves on the east and west sides of the great transept, Mr. Dickie's report states:—

The columns and arcade of the west end of the south aisle are still standing in a more or less shaky condition, but the other arcades have been entirely removed. The columns rest on low stone pedestals measuring 3 feet $3\frac{1}{2}$ inches high; the average diameter of the columns is 2 feet 8 inches, and the height, including base and neck, 16 feet 5 inches. The caps measure 3 feet 3 inches high, and the dossierets 2 feet $4\frac{1}{2}$ inches high, and the height from top of dossieret to actual spring of arch 1 foot 6 inches. The inter-columnar spaces vary very considerably, but the average distance is 14 feet. All these measurements I have from M. Apéry.

I carefully examined the columns of the south aisle arcade west of the transept (the only one now standing), and found that they rested on solid stone pedestals with good foundations. Assuming that the Roman gateway in the south wall was used in the Christian church, the church would in all probability have had its floor at the same level as the Roman platform, and the present mosque pavement, 3 feet 3 inches above this platform, would consequently belong to the Mohammedan period. The pedestals of the columns are designed and built to suit their present level, and I think, therefore, that the setting of the columns as they now exist must be Mohammedan work. Moreover, a redistribution must have been rendered necessary after the insertion of the transept which did not exist in the Christian church. This does not, however, materially affect "the form of the church," which, I think, has been retained, as it is quite probable, from the evidences in the south, east, and west walls, where old walls have been used, that the internal arcades are in the same line as those of the Christian church, the old foundations being simply raised and the old columns reset.

On page 30 of the *JOURNAL* I stated that the transept was built first without a dome. Mr. Dickie says:

A study of the dome and transept piers proves Mr. Spiers's theory that the dome was an afterthought. A straight vertical joint in each pier exists between the transept arch piers and the piers carrying the dome, and the horizontal beds are out of line. The three windows in the centre of the east and west transept walls belong to the transept before the insertion of the dome, and the arches carrying the dome necessitated the blocking up; the line of the centre window sill can be seen about 9 inches below the soffit of the apex of the arch. This also proves the existence of a transept with clerestory windows on the east and west sides before the dome was thought of, and also before the high-pitched roofs were introduced.

* *JOURNAL*, Vol. IV. 3rd Series, p. 25.

† In the reduction of Sir Charles Wilson's plan for the purpose of reproduction to Fergusson's scale of 100 feet to the inch, the scale is not quite correct.

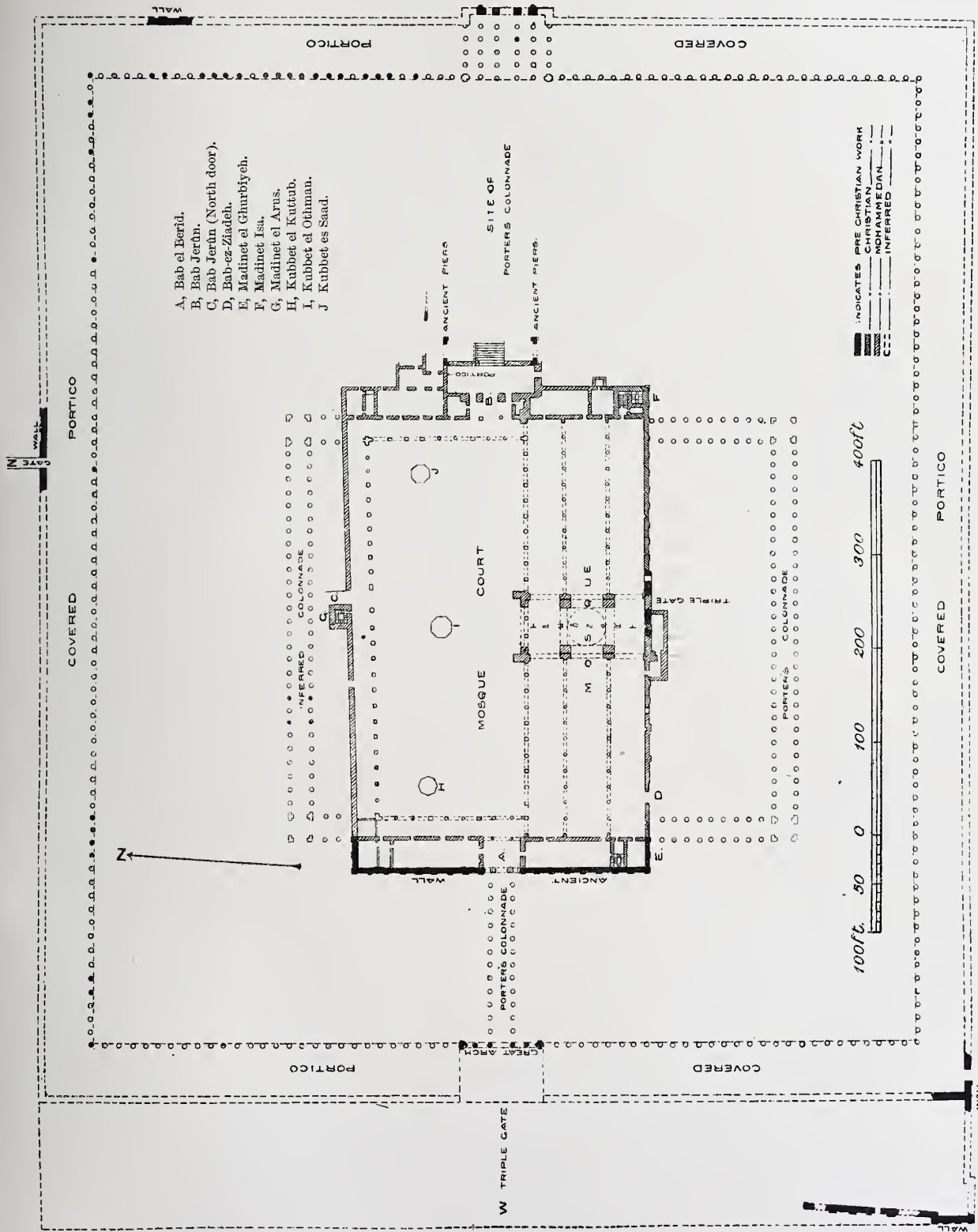
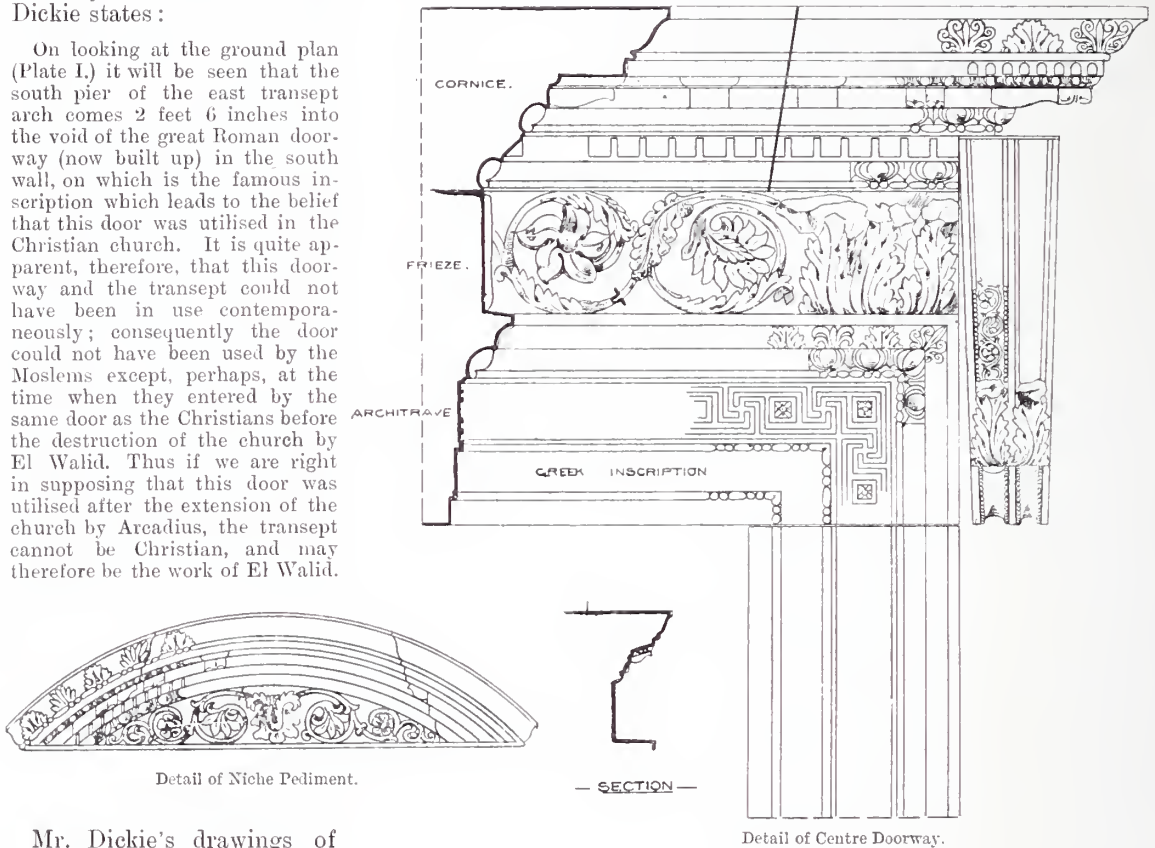


FIG. 1.—THE GREAT MOSQUE AND TEMPLE REMAINS AT DAMASCUS. GROUND PLAN MEASURED AND DRAWN BY ARCHIBALD C. DICKIE F.E.R., 1887.

In the note already referred to, p. 60, I state that the position I had ascribed to the great Roman doorway was incorrect. Mr. Dickie states :

On looking at the ground plan (Plate I.) it will be seen that the south pier of the east transept arch comes 2 feet 6 inches into the void of the great Roman doorway (now built up) in the south wall, on which is the famous inscription which leads to the belief that this door was utilised in the Christian church. It is quite apparent, therefore, that this doorway and the transept could not have been in use contemporaneously; consequently the door could not have been used by the Moslems except, perhaps, at the time when they entered by the same door as the Christians before the destruction of the church by El Walid. Thus if we are right in supposing that this door was utilised after the extension of the church by Arcadius, the transept cannot be Christian, and may therefore be the work of El Walid.

detect turrets of similar design to those inside the transept, representing Mecca, Medineh, and other



Detail of Niche Pediment.

Detail of Centre Doorway.

Mr. Dickie's drawings of that great doorway, with its side doorways and niches over [fig. 2], show how the mistake arose as to the niches, which Porter and other travellers took to be doorways. There are doorways, but underneath the niches. Two other plain niches also come between the central and side doorways. The western doorway happens to come in the centre of the great transept, and its opening has been utilised to sink in it the niche of the principal mihrat of the Mosque.

The black patches, as seen in the illustration fig. 15, p. 57, Vol. IV., I thought were plaster: they turn out to be the remaining fragments of mosaic with which all the walls facing the court were covered. In another photograph in my possession I have been able to

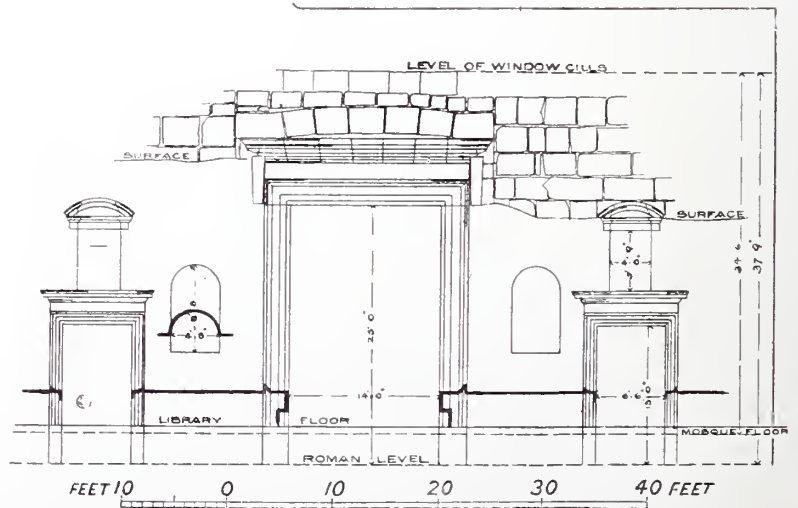


FIG. 2.—TRIPLE DOORWAY IN SOUTH WALL OF MOSQUE.

sacred towns. Other fragments exist on the spandrils of the arches of the west entrance.

the eaves above the stringcourse already mentioned: this forms part of El Walid's work in 705.

Mr. Dickie's drawing of the Roman triple doorway [fig. 2] on the south side of the Mosque does not require any description. The fine character of the carved ornament, as shown, is better than the design. The two angle corbels, intended to suggest a support to the cornice, are here stuck on as an ornament only, and have no structural meaning.

It has occurred to me since, that the roofs over the naves need not necessarily have been horizontal; if they were of low pitch, like the original transept roof, they would still be easy to walk across, and Mr. Dickie tells me that there are traces of the pitch of lower roofs on the east wall. This concludes all I have to say about the Mosque itself, as Mr. Dickie confined his researches more or less to the outer enclosures.

The great archway [fig. 16, p. 59, Vol. IV.], though nearly correct as regards dimensions (I made it 34 feet; it measures actually 33 feet 9 inches), is inaccurate as regards the angle piers. Mr. Dickie's plan [fig. 6] shows the actual arrangement. The responds are $\frac{1}{2}$ columns instead of $\frac{3}{4}$ as shown, and the pilaster which masked the junction of the $\frac{1}{2}$ column with the pier is of less width than I have shown. Mr. Dickie could find no traces of the columns described in Porter's work as existing on the east side of the Mosque, but in his researches after it, however, he made another important discovery, viz. the remains of the triple doorway [fig. 3], which formed the east entrance or Propylæa to the great enclosure. This triple doorway forms the external central feature of the great peribolus wall, and it was possibly preceded by a portico as possessed by the same feature at Palmyra. The entablature shown in Mr. Dickie's drawing does not exist. The $\frac{1}{2}$ columns may be the responds of that portico. This discovery upsets my theory of the *great west archway* being the portico of a palace beyond, as there seems to me to be no doubt now that it was the *inside façade of a similar triple gateway* to that found on the east side.

In my plan, taken from Porter's work, I showed some of the columns forming porticos which I

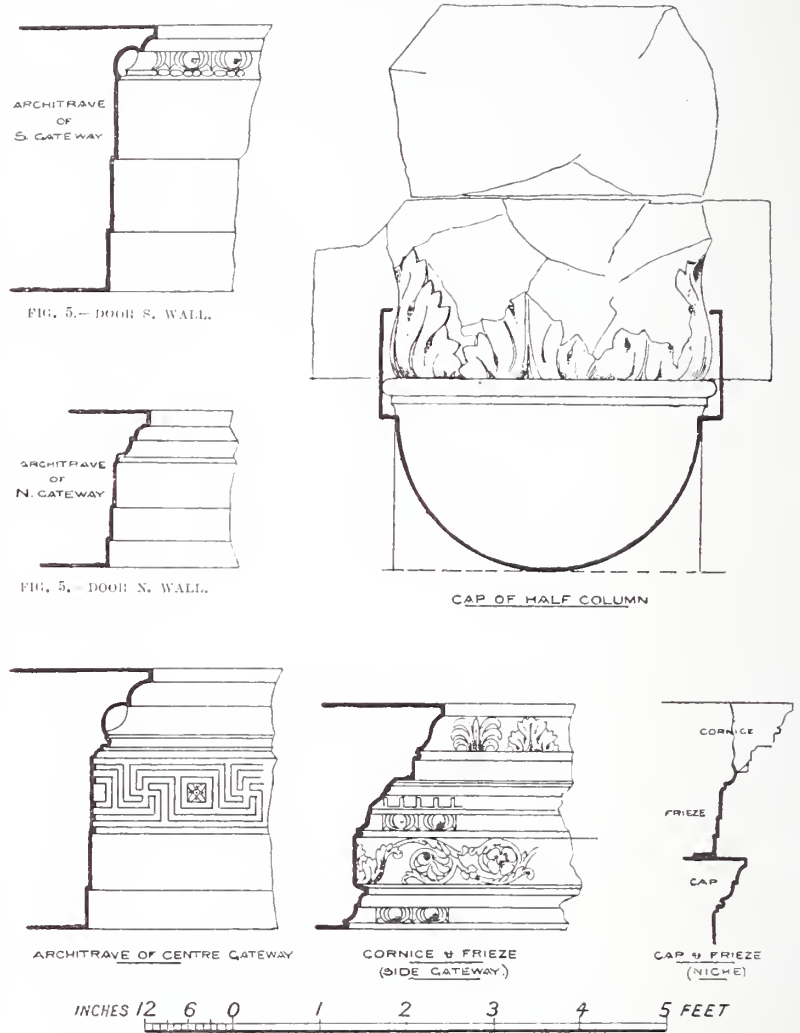


FIG. 4.—DETAILS OF TRIPLE DOORWAY, EAST PROPYLEA.

thought might be the main streets or avenues similar to the *Via recta* on the north side of the town. Mr. Dickie followed up these avenues of columns, and on all four sides of the Mosque

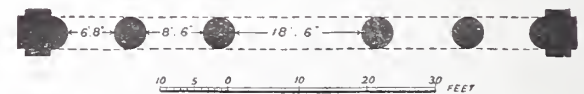


FIG. 6.—PLAN OF GREAT WESTERN ARCHWAY.

found the traces of a great enclosure wall. Without these columns it might have been difficult to trace the connection of the wall with the great enclosure. This great enclosure wall, the discovered portions of which are shown on Mr. Dickie's plan, was decorated with pilasters (or pilaster

breaks they might be called), which measured 8 feet 4 inches wide. On the north side, near the centre, Mr. Dickie found another portion of the wall and a doorway 9 feet 6 inches wide, with simple architrave moulding [see fig. 5] round it; and again on the south wall another fragment with another doorway similar to the last, but 12 feet 6 inches wide [see fig. 5], and a portion of the return west wall. All these remains (as those of the columns still *in situ*, which formed part of the great external portico) are shown on Mr. Dickie's plan. About 130 feet to the west of the return of the western wall are the traces of another wall running north by east, with a square angle tower 47 feet wide, and projecting 6 feet from the wall, one side decorated with four pilasters, similar pilasters being worked on the remainder of the wall about 130 feet long as found. Curiously enough, this wall is not parallel to the western wall, and its destination is not clear. The width of the great portico (shown in fig. 1) between column and wall is about 52 feet, which would be much too wide a bearing for the roof without intermediate supports—of these Mr. Dickie was unable to find any trace, the column lying within the eastern triple gate being the only example found. These columns were all 4 feet 9 inches in diameter, and about 9 feet apart.

Of the small south portico shown in Porter no

trace remains; those columns blacked in on Porter's and on my plan as existing in his time were in the centre of the Shoe bazaar, which was, I believe, burnt down, and this may account for their disappearance. Mr. Dickie found against the south wall the respond of the portico on the east side. To the north of the Mosque Mr. Dickie found other columns (blackened in on his plan), which has suggested to him the existence of a small north portico. The colonnades running from the west entrance of the Mosque to the great archway still exist, as I am informed by Dr. Masterman. Those on the eastern side of the Mosque did not exist in Porter's time; but they are clearly described by the Moslem authors. That which escaped Porter's attention, however, attracted Mr. Dickie's keen observation, viz. two groups of Roman piers with corbels and architraves. Mr. Dickie first saw them from the top of the eastern minaret. They would appear to have formed a portico giving entrance to the inner enclosure of the Roman temple.

The masonry of all these walls discovered by Mr. Dickie is clearly described by him in his report made to the Palestine Exploration Fund Committee, published in their *Quarterly Statement* of October last, to which readers are referred for a more detailed account.

THE STAIR OF THE LONDON DWELLING-HOUSE—A DEATH-TRAP.

By WILLIAM SIMPSON [*H.A.*], R.I.

IT has long been known that Custom is everywhere a tyrant. That which has been done before in old times is often continued in a manner that can only be described as a blind fatalism. We have many forms of "Kismet," which seem to be as unchangeable among us as if we were followers of the prophet of Allah. If the car of "Juggernaut" had been a British institution, we might still have among us some who would seek to be crushed by its wheels. This force of custom, or habit, is not limited to one race or country, it is found in every part of the world.

Here is what we are accustomed to read of in the papers, and unfortunately it appears only too often; it is generally headed as "Fatal Fire"—a conflagration occurs in an ordinary dwelling-house during the night; the family waken up to find that the stair, which ought to be the means of escape, is a mass of smoke and flame, through which a passage is impossible; so they come to the bed-room windows, and if the fire-escape does not arrive in time they soon find themselves with two dreadful alternatives to be encountered—that of being burned alive, or having to jump out of the window and be killed or maimed for life by

the fall on the pavement; or the fall may be varied by some of them coming down on the spikes of the area railings.

So familiar is this heading of "Fatal Fire" in the newspapers, that readers generally turn away from the paragraph to find more attractive matter. If a number of people should lose their lives in the manner just referred to, and the paper heads the paragraph with large type as a "Dreadful Disaster," a few may read it. The coroner's inquest follows; but neither the coroner, the jury, nor the public seem to reach any better conclusion than that it was a mere accident.

When destructive fires occur, accidents may be expected. Often the firemen suffer from various causes, and brave men among them lose their lives. A wall comes crashing down unexpectedly, or the roof tumbles in, and engulfs the men at work; in some instances—nay, too often—a hero rushes in to save life, but is overwhelmed before he can return. Accidents of this kind will take place until fires become impossible from building houses that are altogether fireproof.

Now, I believe that the heartrending incidents in dwelling-houses, such as those mentioned above,

might be very nearly, if not altogether, prevented by means which are simple enough; and it appears to me that, as this is essentially a building question, it is one that the Royal Institute of British Architects might take up for their consideration, and exert their influence to have something done to remedy the evil. The ideas about to be suggested here may not be approved of; if so, then some one may produce a more thorough remedy—so much the better—only let something be done. Common humanity should demand that if it be possible to remedy this evil, the effort ought to be made. I have consulted the Reports of the Metropolitan Fire Brigade, which appear to be very complete; they give the numbers of deaths and bodily injuries that result from fires, but they do not indicate the deaths and injuries which were owing to the want of the means of escape. Below will be found a table formed from the Reports; it may, perhaps, assist in forming an idea of the numbers who suffer.*

To illustrate this subject, I procured, through a friend, a copy of the Report of the Glasgow Fire Brigade, but it is also deficient in the particular details that are required. A friend, however, conveyed my inquiries to Mr. William Paterson, the head of the Glasgow Fire Brigade, and he supplied the following note in reply:—"No lives have been lost for want of egress from dwelling-houses on fire so far as our records extend. But in cases of loss of life at fires in dwelling-houses, these, while not numerous, were attributable to illness, accidental ignition of clothing, or intoxication."

This is a very important statement—no lives have been lost "for want of egress," so far as the records of the Fire Brigade extend. I believe this would be equally true of Edinburgh, or of any town in Scotland. Most probably it would be the same in Paris, Berlin, and other continental towns where the "flat" system is the rule.

The case for Glasgow can be put in another way. Up to 1894 there was only one fire-escape in that city, but in that year they were increased to four. Mr. Paterson, in his answer to my

* Table of Deaths and Persons injured from Fires.

From Reports of the Chief Officer of the Metropolitan Fire Brigade.

Years	Persons seriously endangered	Persons recovered	Total of lives lost	Taken out alive but died afterwards	Suffocated or burned to death
1890	212	151	61	31	30
1891	268	207	61	31	30
1892	169	105	64	40	24
1893	160	78	82	50	32
1894	204	122	82	56	26

The Reports for 1890-91 include slight injuries and burns that are not taken notice of in the later returns, which accounts for the larger number of persons injured or seriously endangered in those two years.—W. S.

enquiries, wrote that "they have never been required for rescue work."†

We have the question now before us as to what makes this great difference between the dwelling-house of London and Glasgow. In Glasgow, it appears, you may go to bed with the perfect certainty of not being roused during the night and finding that you have the dreadful alternative of being burned to death or of taking a jump from your bed-room window, which, if it does not kill you, is certain to produce the most serious injuries. This difference, whatever it may be, is surely worthy of consideration.

I believe that the danger in the one case, and the safety in the other, results from the character of the stairs. In Glasgow almost all the houses are on the flat principle, and, as the stair is common to all living in the building, it has to be a substantial structure. The space, or well, which it occupies is built of stone, and the steps are of the same material; in most cases, I believe, the landing, or a portion of it, is also of stone. There is nothing in it to burn, and when a fire occurs a perfectly safe means of escape exists.

Now, contrast this with the stair of the London dwelling-house. The steps, rail, and landings are all wooden, and dry as tinder. This mass of wood is placed in a manner to allow of a perfect draught to assist combustion when it takes place, reminding one of the method in which a clever housemaid places the wood to allow of ventilation when lighting an ordinary household fire. We have the interesting problem here of guessing how long a fire would take to flame up from the bottom to the top of the stairs of a London dwelling-house. It would almost be worth the cost of an experiment to know the time, for in that short period would be the precious moments allowed to the sleepers in the bed-rooms to waken and discover their position and the chances of escape.

This, for the moment, is only considering the stair as a means of escape, which unfortunately it seldom is in the London dwelling-house. There is still another aspect of the subject, quite as serious in its character. In a Glasgow house, if a fire occurs it is generally limited to the room where it begins. On the ceiling there is the plaster preventing the fire from catching readily above, and should the flame reach the front door the stair is incombustible, and the floors above and below remain safe. A room or two might suffer from a fire, but the engines would be on the spot before the flames could spread, and conse-

† A Glasgow friend some time ago was telling me of these escapes, and that they were never of any use, when another friend corrected him; but the correction only confirmed the main point. It turned out that during a severe gale a chimney-stack fell, and swept away the stair of a house; this cut off the dwellers from the street, and the fire-escape was used till a means of communication had been formed.—W. S.

quently there are never any serious fires in the Glasgow dwelling-houses.* Here the case of warehouses or factories, often stored with inflammable materials, is not included; serious fires in such places are common enough.

The wooden stair of the London dwelling-house is a veritable incendiary. The well in which it is placed reaches from the bottom to the top of the tenement, and when the stair gets well lighted it is a blazing furnace—"the Fiery Cross"—carrying the devastation to every floor. But for this connecting link fires would in most cases be limited to the room, or the floor, in which they began.

I am aware that it would be hoping for a vain thing to expect that all the wooden stairs in London could be altered—the task would be too gigantic; but surely something could be done to stop the custom of making such dangerous structures in dwelling-houses. The custom has gone on for generations, and no one appears to think that there might be another means of construction. Some time ago there was much talk of the necessary means of egress from theatres in cases of fire—a very important matter; but it would be difficult to explain why means of safety should be limited to people attending places of amusement. People sleeping in their beds at night are surely worthy of similar care and protection from danger and death.

The wooden stair has been so long a matter of custom we need not be surprised that it is overlooked in legislative Acts. I have glanced over the *Metropolitan Buildings Act* of 1855, and the only reference to stairs is the following:—

In every Public Building, and in every other Building containing more than One hundred and twenty-five thousand Cubic Feet, and used as a Dwelling House for separate Families, the Floors of the Lobbies, Passages, and Landings, and also the Flights of Stairs, shall be of Stone or other Fire-proof Material, and carried by Supports of a Fire proof Material.†

These particulars imply stairs with landings similar to those in the Glasgow houses; and it

* Since writing this I have seen Mr. Paterson's Report for 1895, in which the following passage occurs, confirming what I have written:—"Defective building construction still bulks largely in our Causes Tables. The benefits of the Buildings Regulations Act, coupled with the practical instructions of the Master of Works as to the repair of buildings injured by fire, will soon become apparent, and the losses correspondingly reduced. A very large proportion of fires resulting from these causes occur in dwelling-houses, and, as the constant presence of the occupants generally insures an early discovery, the losses sustained are in most cases trifling." It is the latter part of the extract that bears on the limited extent of fires in dwelling-houses; but the whole is given, as it shows that improvement in construction is not overlooked.—W. S.

† The *London Building Act*, 1894, Sect. 68, is identical with this, with the important exception that the words "shall be of Stone or other Fire-proof Material" are replaced by "shall be of Fire-resisting Material."—Ed.

may be assumed they are intended for Model Dwellings, and houses on the "flat" system. It is natural to ask why the lives and property of people living in one kind of house should be protected by an Act of Parliament, and in another the dwellers should be allowed to exist under all the worst dangers of fire? The houses that are thus protected are numerous now, but still they are limited in point of number in comparison to the older form of construction with the wooden stair. I should suppose it would be absurd to attempt at once to alter all the stairs in the London houses; and even an Act of Parliament ordering this to be done would fail to do so; but surely something might be attempted to put an end to the custom. The custom still continues. All the houses I see building in the suburbs where I live have the wooden stairs in them. It is the custom, and we know how often custom is a tyrant. One cannot think of this peculiar form of perpetuating a burning death-trap without recalling the old worship of Moloch: and I doubt if that ancient worship had more yearly victims than this nineteenth-century custom has sacrificed to it.

The *Metropolitan Buildings Act*, quoted above, it will be noticed, assumes that stairs and landings in dwelling-houses can be made of fire-proof materials; that is one reason why I have quoted it. Stone is specially mentioned, and it may be supposed that the only other fire-proof material would be iron. Stone would be the best where it could be used, but in smaller houses iron might be more suitable. One or two friends with whom I have talked about this matter have expressed the fear that iron in a fire would expand and bend out of shape. This, it appears to me, is not likely if the whole well of the stair and the landings were of non-combustible material. But supposing this was the case, the stair, if of iron, would not be the means of carrying the conflagration from floor to floor, as we know the wooden stair does; and at the same time it would remain as a means of escape—which is the great point. However, the question of material is one to be judged upon by practical builders, and may be left to them—it is sufficient here to have the knowledge that stairs and landings can be made fire-proof. There are some landings that might not require to be all non-inflammable, but a portion, at least, of each landing should be so. The hall from the front door generally goes right through a house; this should have a floor of stone, or it might be tiles or cement.

These last remarks suggest the question, as to why every means should not be employed to have every part of a dwelling-house fire-proof? It may not be possible yet to construct a whole building in which this result would be realised; cost comes in as a consideration. Still, a good deal might be done, if the effort was made, in this age

of iron and steel, and with, perhaps, an age of aluminium about to dawn upon us. Civilisation implies not only the development of Architecture, but it includes "improved dwellings." This can be traced from the primitive cave-man down to the present day; and we may be sure that the perfect "Model Dwelling-House" has not yet been evolved in the nineteenth century. A house is made for protection—protection from the elements outside—and it ought at the same time to give protection from a more deadly element inside.

In the hope that the use of iron in stairs might be one of the steps in the evolution just mentioned, I consulted a friend in the iron trade, who supplies iron stairs, which are often required in places of business, as to the probable cost. His estimate for one, all iron, including rail, &c., is about ten and sixpence to eleven shillings per step. He adds, if there was a large demand, so that quantities could be manufactured, the price might be reduced. A builder has also supplied me with probable cost of a wooden stair as being about six and sixpence the step. I am aware that these estimates may not be very exact, as no precise dimensions were given, and character and quality were not particularised; but it may be taken that the iron stair would cost about twice as much as the wooden one. As to stone stairs I have no information.

As to the extra cost here indicated, I think most people will agree with me that it would be a very small matter in comparison to the safety of those dwelling in the house. I have not troubled myself with calculations, but the guess might be made, that the extra money spent on the stair would all be saved, and a good deal more, by reduced insurance rates. A further guess might be made that money spent in making houses fire-proof might in most cases be recouped by a saving in the insurance.

Before writing this article I was recommended

to read the Paper by Mr. William Woodward [A.] entitled "London as it is and as it might be."* This gentleman recognises the danger from fire in the London dwelling-house; and under the heading of "Fire Escapes" is the following:—

Every new house erected for the poorer classes should be provided with an iron ladder, always fixed in its place, and leading from the top floor to a door on to the main roof, which door should be fixed so as to open outwards by the easiest possible contrivances. Then, when the lower part of the house is in flames, and escape thence cut off, means are at hand at the top of the house.

This arrangement might be of use at times, but, when the stair is on fire, it would be as impossible to go up to the roof as it would be to go down to the front door.

As a means of saving life on such emergencies, a very simple construction might be suggested. That would be a balcony at each bed-room window, and easily accessible from the window. Where there are two windows to a bed-room the balcony should be continued along the space between them; where there is only one window, it should be continued five or six feet on one side of the window, or on both sides. This would form a harbour of refuge, easily got at by men, women, and children, and in that position they would in most cases be safe from the dreadful alternative of being burned alive, or having to jump down to destruction on the pavement. Even an ordinary balcony at a bed-room window would enable the unfortunate persons to remain a few minutes longer for the arrival of the fire-escape; and such balconies, I need scarcely remind architects, would form a feature in our street architecture, whether in the plainest or the most ornate of houses.

This suggestion is only given here as an extra precaution against danger, but not to take the place of the more radical remedy of a change in the internal structure, of which a non-inflammable stair is the essential idea.

* A Paper read at the R.I.B.A., 16 Nov. 1885, p. 42.

** Considering the important and controversial nature of the points raised by Mr. William Simpson in the foregoing paper, discussion in the pages of the JOURNAL is invited.



HOLYWELL PRIORY, SHOREDITCH.

By E. W. HUDSON [A.].

Part II.—The Buildings and Remains.

(Continued from page 76.)

IF a plan of "The Old King John" is ever forthcoming, it should throw considerable light upon the arrangement of the Priory buildings. The tavern itself is gone, and the ruins with it, and even the name is not retained in the new public-house. Not a vestige is visible, although it is possible that foundations may yet remain below existing structures, and, if owners could only be made sufficiently interested in the subject, traces might yet be found. When the North London Railway extension to Broad Street was in progress it was an opportunity that should have been taken advantage of. Such information relative to relics found, as I could obtain from officials so long after, is already recorded in Part I.

The viaduct traverses the precincts from north to south, cutting through the site of the tavern, and no doubt, also, of the gateway and church.

There was a priests'-house existing in the time of Elizabeth, described as a "messuage and garden," which belonged to the Lovel Chantry, being once occupied by the before-mentioned chantry-priests. The Queen gave this property to John Farnham, one of her pensioners. It seems to have been on the site, although the utmost precautions were originally enjoined by the rules to prevent communication between even officiating priests and the inmates of nunneries. Latterly, however, these rules evidently became a dead-letter.

1859.—The late Rev. Thos. Hugo, F.S.A., a local antiquary, possessed one piece of dressed stone which he believed was a relic of the Priory. In

his *Itinerary of Bishopsgate* he thus describes it:—

During some excavations opposite All Saints' Church, Skinner Street, in 1859, a stone capital was found at a depth of eleven feet, which from its style may have belonged to this (Priory) church, which was not far distant.

This capital is too early in date to have belonged to the next nearest



FIG. 5.

priory, St. Mary Spittle, which was founded about seventy years after Haliwell.

In the sketch [fig. 5] there is no trace of an abacus, and no dimensions. Judging by other examples, the abacus was probably square with a

chamfered edge. The depth, gradual tapering, and absence of square arris next the abacus makes it an unusual type for early twelfth century. At Haddiscoe, Norfolk, and the churches of Ebreuil, Newry, and Cusset in France, there are examples of bases having all the character of capitals and very similar in form to this. The evidence that the relic actually belonged to Haliwell is not at all conclusive, although the plainness and general style show it to have belonged to a contemporary building; but whether part of an arcade or portal, as no diameter is given, it is impossible to decide.

Whether the walling employed in the older portions was rough coursed rubble with freestone dressings, or jointed ashlar of either of the types used at Winchester Cathedral, cannot now be determined. Contemporary walling in chalk districts would be flint alternated with ashlar for the buttresses, quoins, jambs, and heads of the windows, and plastered internally; but this would not apply here. Refectories of the period at St. Martin's Priory, Dover, A.D. 1130, and Minster, Thanet, in chalk districts, are delineated in Turner's *Domestic Architecture in England*, and described as standing in 1851.*

1863.—I find the following description, by Mr. C. Long, of masonry on the site of Haliwell at this date given in the *Archæological Journal*:—

There still exists upon the spot . . . a very old and curious wall, which may with some degree of certainty be regarded as part of the buildings of this establishment; the present length of it is not far short of 100 feet.

It is built of shaped blocks of a vitrified substance, resembling clinker, now very soft and decayed, and in size from twelve to eighteen inches long, by about ten inches deep. This wall running due east and west is probably the remains of the Priory Church.

I did not see this wall, and was unaware of its existence at this period. It appears to have been above ground, and may have been the wall that formed the north side of "Holywell Court" (a to b in the sketch, fig. 4), and was doubtless cleared away for the railway work during the year. The material could hardly have been "Kentish Rag," but perhaps some Sussex stone, which has a blackened appearance from the iron it contains, and yet might be friable and decayed as described.

Outside the precincts, and south of Holywell Lane, some walling was recently uncovered, and is described by Mr. Lovegrove [*JOURNAL*, Vol. IV. 3rd series, p. 47] as being of massive stone, "similar to that used in Yorkshire." It was found near the Standard Theatre, which is south of Holywell Lane, and therefore could scarcely have been part of the Priory itself, although it may possibly have been the foundation of a tithe barn, or other detached building connected therewith.

* Both these establishments were refounded by Archbishop William Carboil, 1122-1136, who succeeded Gundulph, and finished Rochester Castle.

Later reference is also made [JOURNAL, Vol. IV. p. 236] to a wall discovered on the site, which Mr. Lovegrove, in a communication to the present writer, explains he found

at a depth of about 10 to 12 feet below the street level, at the rear of a house on the west side of Anning Street (about 30 to 50 feet north from New Inn Yard, and 120 feet west from High Street). It was of dark grey rubble masonry laid in a straight line with portions of two other brick walls laid on the top of it. Its thickness or depth was not ascertainable.

Unless this was always underground, it indicates a greater rise in level than is easily explained, or evidenced elsewhere.

Most probably ashlar was used internally in the church walls, in courses from six to ten inches high; the whole placed on a foundation of rubble (as may be seen at St. Bartholomew's, now laid bare), groined vaultings of chalk for aisles, and a wooden roof and flat ceiling for the nave.

It was about this period (1107-1139) that Bishop Roger, of Salisbury, initiated the system of close-jointed, well-finished masonry in large edifices, which, William of Malmesbury says, "led the eye to imagine that the whole wall was composed of a single block." Before this, and doubtless also in contemporary instances, as Bishop Roger's work caused such a sensation, wide joints of unsifted sand mortar were the general rule.

The Prior of Lewes' Hostelry in Southwark was somewhat later in date (about forty years), and in this case the lower story was of rubble, the pillars and arches wrought stone (a mixture of firestone and Kentish rag). Caen stone was used for a door and parts of the upper story. The vaulting was of chalk, nine inches thick.

Though there is a paucity of documentary evidence, not a single illustration of the architecture or arrangement of this establishment, though there are no visible remains, and though the Rev. T. Hugo's relic cannot with certainty be referred to Hallwell, I am able to vouch for one discovery on the site. During the construction of the mid-level intercepting sewer* of the main drainage of London, a shaft was sunk in the wider part of King John's Court. At a depth of about twelve to fourteen feet, between parallel walls of chalk rubble, two leaden coffins, one smaller than the other, were uncovered, lying side by side, in the position shewn by letter A on plan, Fig. 3, Vol. IV. page 470. The surface appeared to have been considerably raised in the course of centuries, for the rubble walls were not above two or three feet high. I observed no vestige of flooring or concrete below or above the coffins, and I believe

* This traversed Old Street at a great depth, turned down Willow Walk (now Great Eastern Street), Wood's Billings, and cutting diagonally across the Priory site passed along Bethnal Green Road to Old Ford.

the interment had taken place in the open, not far from the church. My opinion is that although incased in lead they were not the remains of any distinguished laymen laid to rest near the High Altar; so that, in my judgment, the conjecture of their being those of Lovel and his wife, which obtained credit, seems untenable. If they were, it disproves the idea that part of the chapel was under "The Old King John" tavern. The remains of Sir Thomas would, as re-founder, most likely be built up to the main wall, the leaden case enclosed in a marble or stone coffin, whose lid would be level with the floor; or, otherwise, placed under a marble table tomb, all pretty certain to be so accessible as to be destroyed with the church, if they were not removed elsewhere.

A rough sketch of one of them is given in fig. 6. The cover, partly decayed at the edges, was in several pieces and easily removable. The skeleton in both cases was entire, the skull lay in the circular part prepared for it, and a brown earthen deposit covered the bottom; but nothing to indi-



FIG. 6.

cate the status of deceased. The larger skull had perfect rows of teeth, but in the smaller one several were missing. There was no incised or raised ornament whatever in the lead, and no signs of any shell enclosing it. I believe the heads were to the west, but in the absence of the original sketch, at this remote date, I cannot be sure, nor yet as to the certainty of sex of the skeletons. I understand they were removed to the office of the Metropolitan Board of Works, but I can get no information at the L.C.C. offices, they are not known at the British Museum, and the parish sexton has no knowledge of official reinterment.

If these were really the remains of Sir Thomas and Lady Lovel *in situ* under the chapel, it necessitates shifting the position of the church considerably westward of the accepted position, whereby the west front would be only about 150 feet from "Ditch side" (Curtain Road). This certainly adapts itself better to the south gate, for it enables us to locate the Domestic Court so as to let it open therein, and place the Cloisters entirely to the west, affording the desirable privacy.

The find was followed by others during the railway extension and subsequent widening; but

no account was kept by contractor or engineer, as already mentioned.

A very similar discovery is recorded at Waltham Abbey (*Gentleman's Magazine*, vol. lxx. p. 369). The account, as follows, is dated 5th Jan. 1795:—

Remains of some Prelate or powerful person, formerly inhumed under the hallowed walls of Waltham Abbey. Some workmen in digging between two of these strongly cemented foundations (of the pillars of the destroyed cloisters) found in a small stone vault (or rather grave) impervious to the air, a coffin six feet long of thick sheet-lead, tapering from head to the feet, without any inscription hitherto remarked. On the left side stood the head inclosed in a double leaden urn, the outer case six inches deep and four and a half in diameter at the mouth, formed like the bowl of a glass goblet.

The above is an exact description of the interments at Holywell, as to the coffin and grave, except that there was no urn, and the "stone" in that case was only hard chalk. The writer does not state whether there was a circular projecting end to receive the head.

Thus far go the records up to date. To return now to those *temp.* Henry VIII., which have been given in full *ante*.

In endeavouring to ascertain the extent of the buildings, we have, in the first place, the account already quoted (Vgl. IV. p. 435) of the funeral feasting at Lovel's funeral, from which we learn NUNS-HALL and PARLOUR were not wanting. Then from the grant from Henry VIII. to Webbe, we learn yet more of the buildings which went to make up the entirety of this Priory, for in the Schedule relating thereto in Part I. Vol. IV. p. 490, various departments of the nunnery are named, and printed in thicker type, as follow, viz.

LOWER-GATE, COURTYARD, DWELLING-ROOMS, KITCHEN, "THE LODGINGS," FRATRY, CLOISTER, LADY'S-GARDENS, DORMITORY, PRIORRESS' GARDEN, CONVENT ORCHARD, BARNS, HOUSES, BREW-HOUSES, GRANARIES, STABLES, "CARLTON'S LODGING," CHURCH, GALLERY, CHAPTER-HOUSE, CHAPEL BY THE FRATRY, CHAPEL-YARD, GARDENS, WASH-HOUSE, MANSION HOUSE, "DUFF-HOUSE," WORKHOUSE, OAT-BARN, LORD RUTLAND'S LODGING, LOVEL'S CHAPEL, and the WELL in the great-court, used for domestic supply by tenants, whose right thereto is specially reserved.

Thus, from two documents we have some twenty-three parts, besides the church, chapels, gardens, and courtyards—a tolerably complete enumeration.

The "gallery" is rather remarkable relatively to the parts mentioned. If it be not a passage over the cloister (as at old St. Paul's), it must be the triforium. Nothing but the "walls" of the church itself seem to have been standing, for only "stone" is mentioned under that head.

It would seem that Lord Rutland was a permanent resident; for his lady was taken hence for burial in Shoreditch Church in 1559, fourteen years after the above schedule was made, as already stated.

Taking into consideration the deductions which may fairly be drawn from the evidence, and the records and remains which have been quoted from and described, the following epitome will result, viz.:—That the enclosed precincts contained rather less than eight acres, bounded by what are now Bateman's Row, Holywell Lane, High Street, and Curtain Road, on the north, south, east, and west respectively; that the south gateway was in Holywell Lane near the point where the North London Railway now crosses; that the church was set back from Holywell Lane sufficiently to admit of a Cloister or a Domestic courtyard intervening; that the Lovel Chapel was to the south of the choir; that there were certain lodgings or lay quarters to the west, which had access *via* gallery (or triforium) to Lovel's chapel; that most of the buildings we should expect to exist are recorded, and, lastly, that the "Holy Well" was in the north-west corner of the enclosure.

Upon these lines, if nothing should transpire to modify the deduction, I hope to attempt an approximate restoration of plan.

There may have been, and doubtless were, other minor appurtenances, for, speaking generally, an establishment of this kind usually consisted of church, cloisters, refectory or fraternity, chapter-room, dormitory, infirmary, guest-hall, locutory, almonry, library, scriptoria, misericords, common-house, exchequer, kitchen, bakehouse, lavatories, prioresses' lodgings with chapel, oratory, bedroom, buttery, pantry, auditors' chamber, parlour, kitchen and rooms over.* Nor must the columbarium be forgotten.†

* Fosbrooke, *Encycl.* vol. i. p. 121, *et seq.*, for account of the religious services of the order.

† At the time of the suppression a survey was made by the king's auditors under Cromwell, giving in substance the following description of actual arrangement of a neighbouring priory of the same order (St. Helen's). It is dated 21st June, 33rd Henry VIII. (1541):—

"There was a gateway opening into a court surrounded by the more humble buildings of the community, and from thence into an inner court which contained the steward's lodging, counting-house, kitchen, pastry-house, larder and other apartments, an entrance to the hall and parlour with offices below them, and an entrance to the cloister and convent parlour. On the north side of the cloister was the Fraternity, on the east the sub-prioress's lodging, and private garden. Next to this the stairs to dormitory and a small monument-house. On the west side of the cloisters a door led to the nun's church. A door in the east side of cloister led into the fair pleasure garden of the establishment, at the north end of this was the kitchen garden, and a further door into the wood-yard and to the stables and appurtenances."

The church was bought by the parish at the dissolution, and the nuns' screen pulled down.

(To be continued.)

MINUTES. V.

At the Fifth General Meeting (Business and Ordinary) of the Session, held Monday, 17th January 1898, at 8 p.m., Mr. E. A. Gruning, *Vice-President*, in the Chair, the Minutes of the Special and Ordinary General Meetings held 13th December 1897 [*ante*, p. 112], were taken as read, and signed as correct.

The following Associates attending for the first time since their election were formally admitted and signed the Register—*viz.*: Messrs. Percy William Meredith, James Henry Coram, and Ernest William Marshall.

The Chairman announced that Mr. Alfred Christie Smart, *Associate*, had ceased to be a member of the Royal Institute.

The Chairman further announced that Mr. David Rose had been reinstated as Fellow, and Mr. Walter Albert Williams as Associate of the Royal Institute.

A list of Donations to the Library was taken as read, and an expression of the thanks of the Institute to the several donors was ordered, on the motion of the Hon. Secretary, to be entered on the Minutes.

The following candidates for membership were elected by show of hands, under By-law 9—*viz.*:

As Fellow.

ARTHUR ALDERSON FRANCE, F.S.I. (Leeds).

As Hon. Corr. Members.

LEOPOLD EIDLITZ (New York).

VALÈRE DUMORTIER, President of the Société Centrale of Belgium.

Mr. William Woodward [*A.*] having, in accordance with notice, put certain questions to the Chair respecting the disposition of the guests at the Festival Dinner on the 2nd ult., the invitations issued to the press on the occasion, and as to the report in the *JOURNAL* of speeches made at the function; further, as to by whose authority the plan submitted to the Select Committee on the Government Offices (Appropriation of Sites) by certain members of the Institute was described as "The Institute Plan," replies thereto were given by the Chairman, Hon. Secretary, and Secretary respectively [*see Appendix*].

The Chairman having read the Deed of Award of the Prizes and Studentships 1898, made by the Council under the Common Seal [p. 152], the sealed envelopes bearing the respective mottoes or devices of the successful competitors were opened, and their names and addresses found to be as follows:—

THE ROYAL INSTITUTE SILVER MEDAL (DRAWINGS) —

Clare.—Thomas Tyrwhitt [*Student R.I.B.A.*], 36, St. George's Square, S.W. (Silver Medal and Ten Guineas).

A Flower (device).—Cyril Wontner Smith [*Student R.I.B.A.*], 34, Woodberry Grove, Finsbury Park, N. (Medal of Merit).

THE TITE PRIZE—

Andante.—John Stevens Lee [*Student R.I.B.A.*], 78, Comeragh Road, West Kensington, W. (Certificate and, under conditions of travel in Italy, £30).

Heather.—Thomas A. Pole [*A.*], 35, Bernard Street, Russell Square (Medal of Merit and Ten Guineas).

THE GRISSELL MEDAL —

Stavekirke.—Harbottle Reed, 12, Castle Street, Exeter (Medal and Ten Guineas).

By Lamplight.—W. Stanley Bates [*A.*], 59, Clareuce Road, Clapton, N.E. (Medal of Merit).

The proceedings then closed, and the Meeting separated at 9 p.m.

APPENDIX.—MR. WOODWARD'S QUESTIONS.

THE CHAIRMAN (Mr. E. A. Gruning, *Vice-President*) called upon Mr. Woodward to ask the questions put down in his name.

Mr. WILLIAM WOODWARD [*A.*] regretted that the questions sent to the Secretary were not printed in the Supplement to the *JOURNAL* in the same form in which he sent them, because that form was probably more intelligible than the one in which they were printed. The first question was: "Who was responsible for the disposition of the guests at the Institute Festival Dinner of 2nd December 1897?"

THE HON. SECRETARY replied that the disposition of the guests at the Dinners was always left in the hands of a Committee appointed by the Council. The members of the Committee in this case were Mr. Graham, Mr. Gruning, Mr. Florence, Mr. Slater, and the Hon. Secretary.

Mr. WOODWARD said his second question was: "Why was Mr. Christopher Oakley, President of the Surveyors' Institution, placed in the very worst position in the room?" A reference to the plan of the tables would, he thought, convince any ordinary observer that there were only two places in that room from which a good view could not have been obtained of the Chairman, and which should not be occupied by a gentleman in the position of President of the Surveyors' Institution. There was only one table in that room at which the President of the Surveyors' Institution should be placed, and that was the high table. Considering that the President of the Royal Institute of British Architects and the Secretary were annually invited to the Surveyors' Institution dinner, and were placed in excellent positions, and that frequently the President of the Royal Institute of British Architects was named in the toasts of the Societies, he begged to be informed why the return for that should be that Mr. Christopher Oakley was placed in the very worst position in the room. He gave the names of a few guests at the high table, which would probably be explained by the Hon. Secretary as of sufficient importance to take the place of the President of the Surveyors' Institution. The President of the Royal College of Surgeons, the President of the Incorporated Law Society, the President of the Institution of Civil Engineers, were very properly placed at the high table. That intensified the deep regret of the members of the Surveyors' Institution. The Surveyors' Institution was a kindred Institution: it had helped the Institute by its funds in defending building owners from the effect of the Buildings Bill, and it had always been friendly and done its utmost to work in complete harmony with the Institute, and therefore he asked for an explanation of the fact that the President of the Surveyors' Institution was placed in the position which he had described.

THE HON. SECRETARY alluded to the number and scope of Mr. Woodward's questions in the Institute, and expressed himself as rather glad that he should be the one member of the Institute to ask this question, because he doubted whether any other member would have done so. In the first place, he took exception to Mr. Woodward's statement that Mr. Oakley was placed in the worst possible position in the room. He denied that there was a worst possible position in the room. In the next place, Mr. Woodward said that there were only two places in the room where one could not see and hear. In a room where there were nearly two hundred people dining he thought there must be many more than two places where one could not see and hear everything. As a matter of fact, at the Dinner in 1894, the Committee, for fear of giving offence to anybody, took the precaution of placing all the notable guests at the high table; and instead of this one complaint of Mr. Woodward being raised, they had numberless complaints of guests being placed at the high table next to people they did not know, and entirely separated from the members of the Institute, when the main object of the Dinner was to ease the outside public to mix more with the members of the Institute than they were ordinarily in the habit of doing. This year they had altered their plan for that reason, and divided the high table between the guests and notable

members of the Institute: the only places of honour were considered to be on the right hand and left hand of the Chairman and Vice-Chairmen. Mr. Oakley occupied a seat in exactly the same relative position to that occupied by the Vice-Chairman of the County Council, the Chairman of the Thames Tunnel Committee, Mr. Axel Haig, a most distinguished artist and a member of the Royal Academy of Sweden, and Canon Clayton of Peterborough, and the Committee considered that in placing him there they were doing him honour. He could only say that if it were thought by any members of the Surveyors' Institution, apart from Mr. Woodward, that any slight had been cast upon Mr. Oakley, nothing was further from the thoughts of the Committee or of the Council than doing such a thing. Was it likely that they should ask the President of a distinguished institution like the Surveyors' Institution to the Dinner, and then try to throw a slur upon him? In the management of a large dinner it was impossible to arrange the places so as to suit everybody. Certain members of the Institute, Vice-Presidents and so on, who had the right to sit at the high table, had also a right to have their friends next to them. The Committee thought they were doing the greatest honour they could to Mr. Oakley, as they could not find a place for him at the high table, to place him next to the Vice-Chairman, which was always thought to be equal in honour to any other place except on the right and left hand of the Chairman. He did not think he could say more than this, and was quite sure that the Institution of Surveyors would accept what he had now said, if there were anything that could be called a slight, as an ample apology. The probability was that if it had not been for Mr. Haig having been there, who was a personal friend of his own, Mr. Oakley would have been sitting at his right hand.

Mr. WOODWARD took the opportunity to say that the reply of the Hon. Secretary was one of the weakest replies that could have been made to his question. The disposition of such a man as the President of the Surveyors' Institution should have been one to have at once occupied the attention of the Dinner Committee. In anticipation of the reply, he had pointed out that there was ample room at the high table for the President of the Surveyors' Institution to accompany the various Presidents whom he had mentioned, had it not been for certain friends, guests of members of the Institute. The Hon. Secretary had made the observation that he was probably the only member of the Institute who would have ventured to ask the question, and had opined that he, perhaps, was the only member of the Surveyors' Institution who felt the affront. But he begged to state publicly that this question of the position of the President had caused the deepest regret in the minds of a great number of the members of the Surveyors' Institution, and that the friendly relations that had hitherto existed between these two institutions would on this account alone be very materially altered.

THE CHAIRMAN thought Mr. Woodward took this question a little too much to heart. He was himself a member of the Dinner Committee, and had the honour to be a Fellow of the Surveyors' Institution, and was quite sure Mr. Woodward, and anybody who thought that any affront had been offered to the Surveyors' Institution, would take it to be a fact that no such thing was intended; and if it had been felt, it was a matter of the deepest regret both to the Dinner Committee and to the Council.

Mr. WOODWARD expressed his pleasure to hear the remarks of the Chairman, and begged him to convey them to the authorities of the Surveyors' Institution. He was sure they would heal any soreness.

THE CHAIRMAN thought he must leave it to Mr. Woodward to convey them, as it was not a matter on which any official communication had taken place between the Surveyors' Institution and the Royal Institute, and

it would be quite out of place for him to do as Mr. Woodward suggested.

Mr. WOODWARD said that his next question was, "Why was *The Builder* invited to the Dinner, and not *The Building News*, nor any other professional journal?"

THE HON. SECRETARY said that the reply was very simple. At former dinners the Committee had only asked *The Builder*. This year there were seven Press tickets. The Institute's funds were not so large that they could throw away their money; and therefore they asked simply certain representative journals: one for the architectural journals—namely, *The Builder*—and others for the general daily papers, as was done before.

Mr. WOODWARD said that question No. 4 was: "Why is the report in the JOURNAL of this Institute of the speeches delivered at the Dinner so meagre, and why should the Royal Institute of British Architects be 'indebted,' to quote the word used in the JOURNAL, to *The Builder* journal for a report of such speeches?" The Institute had its own admirable reporter, and surely it would have been proper to have had him at the Dinner in order to have had full reports of the very excellent speeches which were delivered. He would instance the eloquent and splendid speech of the Chairman of the London County Council, every word of which should have been reported. He did not call in question the ability of the reporter of *The Builder*, but the report had been edited, and edited to such an extent that the greater part of one of the finest speeches ever delivered at the Institute dinner table had been lost. Were their funds at such a low ebb that the Royal Institute of British Architects were to be "indebted" to a professional journal for the speeches delivered at their Festival Dinner? It was a subject which every member of the Institute would regret, because at this dinner the members present formed a very small proportion indeed of the members of the Institute, and therefore the reports of the excellent speeches should have been full, and the Institute should not have been indebted to the courtesy of a professional journal for the report.

THE CHAIRMAN asked the Secretary to answer the question, as he had the conduct of the JOURNAL.

THE SECRETARY replied that, so far as the report of the speeches was concerned, he could only say that the conduct of the JOURNAL was a matter entirely within his discretion. In editing the JOURNAL various questions were involved—that of space, for instance. A full report of the speeches could not be given, and he had given what in his opinion was an adequate one. As to the question of being indebted to *The Builder*, that was a matter of finance. So few members of the Institute were present, as Mr. Woodward himself had said, that it seemed to be rather hard that too much expense should come upon the general body. In the case of former Dinners, when there had been a deficit, the question had been asked, Why should the general body of the Institute have to pay for the dinner of the comparatively few that attend it? There would be a deficit of a certain amount this year, and in order to lessen this deficit and to save from twelve to fourteen guineas—because the report of these speeches was a long matter—he asked the Editor of *The Builder* if he would kindly allow him to have the script of his reporter when he had finished with it, as the report could not be published in the JOURNAL till a fortnight afterwards. He took the script and edited it, and, as a matter of courtesy to *The Builder*, inserted a note in the little editorial preface to the account of the Dinner acknowledging the source of the report.

Mr. WOODWARD said that he accepted with very much pleasure the reply of the Secretary. Coming to the fifth question and the last, he said it was one of considerable importance to the Institute as a body. It was: "By whose authority, and under what circumstances, was a plan submitted to the Select Committee on

the Government Offices (Appropriation of Sites) by Mr. Macvicar Anderson, described as the Institute plan? *vide* the evidence of Mr. Macvicar Anderson, Mr. Alfred Waterhouse, and Professor George Aitchison in the Minutes of Evidence dated 22nd July 1897." This particular matter was not the foundation of his question, because he had occasion before to complain of and to protest against matters going from the Institute as the work of the Institute which really were the work sometimes of a Standing Committee and sometimes of the Council. In the Report and evidence of the Select Committee on Government Offices (Appropriation of Sites) he found (and this is why he complained very mildly of the Secretary not printing the questions as sent) the Committee referred solely to the plan put in by Mr. Macvicar Anderson as the plan of the Institute; the plans put in by Mr. Statham, by Colonel Edis, and by Mr. Waterhouse were not characterised as Institute plans; it was only the plan of Mr. Macvicar Anderson; and therefore in the question he had specifically named Mr. Macvicar Anderson. Members would agree with him in asserting that the Institute was a corporate body, and therefore when he found in this Report two plans attached to this evidence headed "Plans No. 1 and No. 2 handed in by Mr. Anderson as representing the Royal Institute of British Architects," he submitted that that plan as put in before the Committee was not the plan of the Royal Institute; the Royal Institute had never seen the plan, *i.e.* the great body of the Institute had never seen it; and therefore the statement was altogether misleading. He asked that it should be clearly laid down that any proceedings emanating from the Institute should accurately describe whether those proceedings were proceedings of the Committee, the Council, or the Royal Institute as a corporate body.

THE CHAIRMAN replied that the matter was one of extreme urgency on which it was quite impossible to consult the general body of the Institute. If the Council had taken the course, which he thought would on the whole have been advisable, they would have done nothing, because they could not have called a meeting of the general body of the Institute in time to consider the matter and put in the evidence which was required. Therefore at a meeting of the Council, at the request of the Council and on the advice of the Art Standing Committee, Messrs. Waterhouse and Macvicar Anderson and the President, Prof. Aitchison, were requested to give evidence before the Select Committee. They took with them a plan, prepared by Mr. Macvicar Anderson, and concurred in by the other two members who represented the Council of the Institute, which in the emergency must be taken to be a representation of the Institute itself. This plan was not described by them in giving their evidence as that of the Institute. The description of it as "the Institute plan" must be attributed to the reporter, or whoever it was who drew up the *précis* of the evidence.

MR. H. HEATHCOTE STATHAM [*F.*] said that it appeared to him that the description "the plan of Mr. Anderson as representing the Royal Institute of British Architects" exactly expressed the fact. Mr. Macvicar Anderson was commissioned to represent the Institute, and his plan was so described—it was not described as the plan of the Institute, but as the plan of Mr. Macvicar Anderson as representing the Institute.

THE CHAIRMAN agreed, but said he could not answer that personally, because he had not seen the plan.

MR. WOODWARD protested that his point was, that the plan was not the plan of the Institute at all, but the plan of the Council.

THE CHAIRMAN said he had tried to explain that in this way, that it was impossible to get a plan in the time at the disposal of the Council which should represent the general body of the Institute; it was impossible to call a meeting and get the thing discussed and give evidence in time; it was a matter of urgency, and it had to be done, or the Council must have stood by and done nothing.

MINUTES. VI.

At the Sixth General Meeting (Ordinary) of the Session, held Monday, 24th January 1898, at 8 p.m., Professor Aitchison, R.A., in the Chair, the Minutes of the Meeting held 17th January 1898 were taken as read and signed as correct.

The Secretary announced that Mr. Edward George Stead had been reinstated an Associate of the Royal Institute.

The President delivered an Address to Students [p. 147], and Mr. Ernest George, *Vice-President*, read some "Notes on the Designs and Drawings submitted for the Prizes and Studentships 1898" [p. 148].

The President presented the Prizes, and introduced the Travelling Students for 1898, in accordance with the Deed of Award [p. 152], viz.—

ROYAL INSTITUTE SILVER MEDAL AND TEN GUINEAS (Drawings): to Mr. T. TYRWHITT, for his drawings of Clare College, Cambridge, under motto "Clare."
 Medal of Merit to Mr. CYRIL WONTNER SMITH, for his drawings of Thaxted Parish Church, under device of a Flower.
 PUGIN STUDENTSHIP (Medal and £40): awarded to Mr. CHARLES DE GRUCHY.
 Medal of Merit and Five Guineas to Mr. BENJAMIN BOWER.
 TITE PRIZE (Certificate and £30): awarded to Mr. JOHN STEVENS LEE, for his design for a Villa and Ornamental Garden, under motto "Andante."
 Medal of Merit and Ten Guineas to Mr. THOMAS A. POLE [*A.*], for his design under Motto "Heather."
 GRISSELL MEDAL AND TEN GUINEAS: awarded to Mr. HARBOTTLE REED, for his design for a small Country Church, under motto "Stavekirke."
 Medal of Merit to Mr. W. STANLEY BATES [*A.*], for his design, under motto "By Lamplight."
 ALDWINCKLE STUDENTSHIP (£50): awarded to Mr. JAMES B. FULTON.

The President then made the following further presentations in accordance with the Deed of Award [p. 152], viz.:—

ARTHUR CATES PRIZES for Testimonies of Study submitted for Final Examinations June and November 1897: Books value £10 10s. to Mr. PERCY MORRIS [*A.*]; and Books to the same value to Mr. LAWRENCE HOBSON.

Presentations were also made to Prizemen of 1896 and 1897 as follows:—

PUGIN STUDENT 1896: Medal to Mr. CECIL CLAUDE BREWER.

SOANE MEDALLIST 1897: Cheque for £50, being second moiety of the £100 for travel, to Mr. JOHN ALEXANDER RUSSEL INGLIS [*A.*].

GODWIN BURSAR 1897: Medal, and Cheque for £20, being second moiety of the £40 for travel, to Mr. ROBERT STEPHEN AYLING [*A.*].

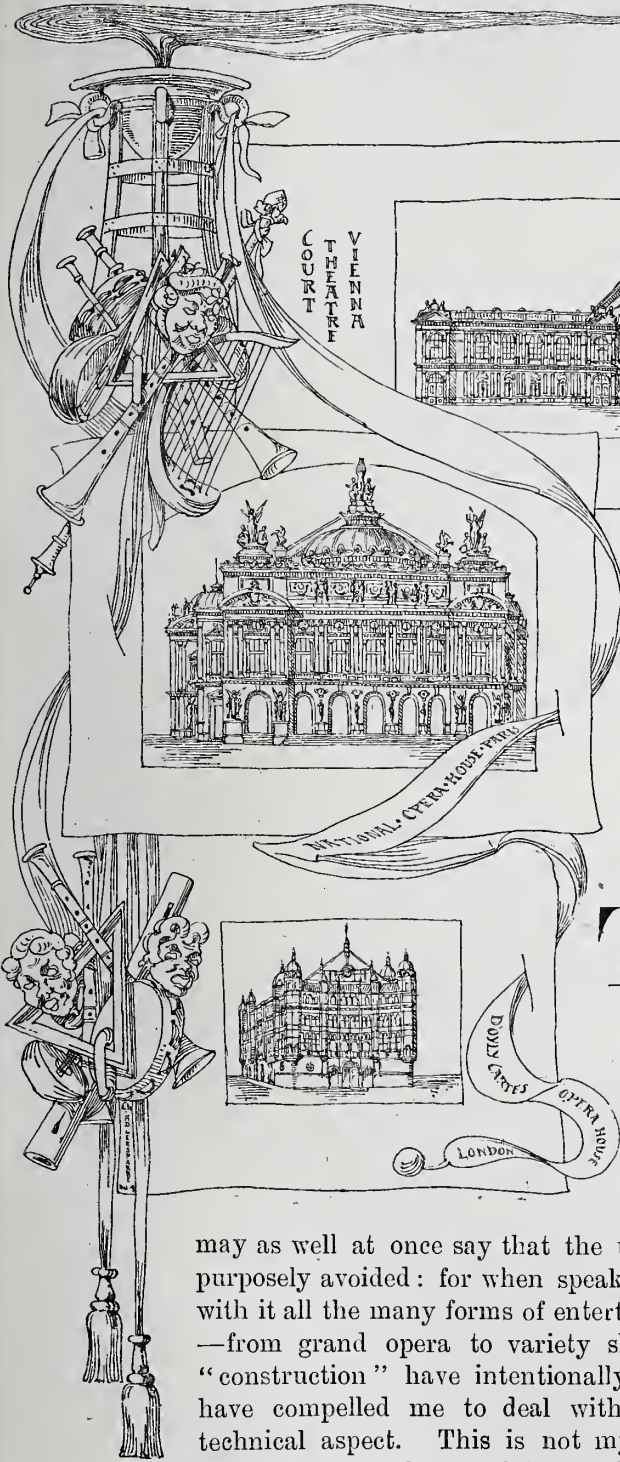
PUGIN STUDENT 1897: Medal, and Cheque for £40, to Mr. WILLIAM HAYWOOD.

OWEN JONES STUDENT 1897: Certificate, and Cheque for £25, being second moiety of the £50 for travel, to Mr. ARTHUR EDWARD HENDERSON.

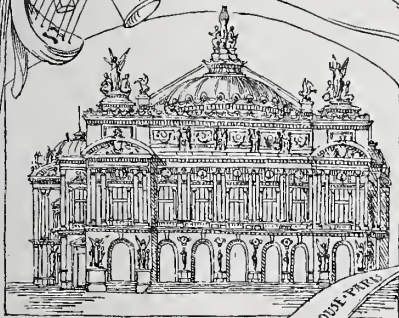
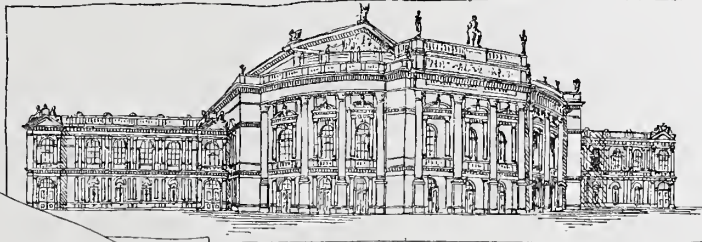
ALDWINCKLE STUDENT 1897: Cheque for £25, being second moiety of the £50 for travel, to Mr. ARTHUR TROYE GRIFFITH.

Professor T. Roger Smith [*F.*] having referred to the President's election to full membership of the Royal Academy, and offered the cordial congratulations of the Institute on his accession to that honour, the President addressed the Meeting in reply [see p. 153].

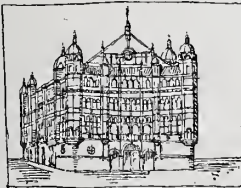
The proceedings then closed, and the Meeting separated at 9.30 p.m.



VIENNA
THEATRE
COURT



INTERNATIONAL CONGRESS OF THEATRE ARCHITECTS



DOMINION THEATRE
LONDON

THE HOUSING OF THE DRAMA.

WITH SPECIAL REFERENCE TO
SUBSCRIPTION AND ENDOWED THEATRES.

By EDWIN O. SACHS, Architect,
Author of *Modern Opera Houses and Theatres*, &c.

Read before the Royal Institute, Monday, 7th Feb. 1898.

INTRODUCTION.

THE subject of the paper I am presenting to-night is "The Housing of the Drama," and I must preface my remarks by saying that, when the courteous invitation of your Council indicated that this evening was set down for a discussion on theatres, I was at considerable pains to select a title which should exactly describe the bearing of my contribution.

It is the housing of the *Drama* of which I wish to speak, neither more nor less, and I may as well at once say that the use of the word "theatre" in the title has been purposely avoided: for when speaking of the theatre we are too ready to associate with it all the many forms of entertainment which require an auditorium and a stage—from grand opera to variety show. Similarly such terms as "planning" and "construction" have intentionally been omitted. To have included either would have compelled me to deal with the playhouse solely from its architectural or technical aspect. This is not my intention, the less so because this room has already witnessed several interesting discussions on the building and equipment of the modern theatre, at home, on the Continent, and in America. In fact, many questions of detail essential to the construction were then so ably dealt with that I should only be traversing

old ground. Hence I have ventured to come before you this evening with a contribution on broader lines. I shall endeavour to treat of some of the aspects under which a playhouse devoted to the production of drama can be constructed, not only as a temple of art, but also as the pride of the nation or community to which it belongs. These aspects demand the attention of the architectural and allied professions, for without the assistance of the architect of to-day and his co-workers the successful issue of any movement towards a better class of building is almost impossible. I say "architect of to-day" advisedly, for it is not many years back that the architect considered it was his only duty to carry out his client's instructions to the best of his ability, without dealing with the purpose or object of the building from ideal points of view—much less trying to influence his client in this respect. At the present time, however, I am glad to say, we have architects (like Mr. Aston Webb) who will go so far as to give such prosy themes as a grain warehouse an architectural treatment of the very highest order. Moreover, we have architects who consider that they have a higher mission than the mere welding together of bricks and mortar. They intend to beautify our cities and give dignity and importance to our public institutions, and even if commissions do not fall their way they do everything in their power to see that we are saved from further eyesores. It is to those that I chiefly address myself to-night when I deal with the "Housing of the Drama" not as a question of construction but as a question of policy.

Now when speaking of the one form of entertainment under consideration to-night—the *Drama*, as distinct from the opera or the lighter forms of amusement—it would be well to bear in mind that this includes comedy and tragedy alike—the chamber play as well as grand drama—in fact, all such presentations of plays which are given with due regard to art and literature, as well as for purposes of education, with the object of dealing with serious problems, or for the recreation of the cultured. I am afraid I must exclude the melodrama, and even the ever-popular modern farce.

I ask then how the drama in its highest sense is housed to-day. How is it housed in the Metropolis, how in the provinces, how abroad? And what principles guide the constitution of the home of the drama? What is the basis on which buildings devoted to the presentation of plays are erected? The answers to these questions are all-important when considering whether a playhouse fulfils the function for which it is provided. They are also essential if we wish to know the lines on which a modern playhouse should be built.

THE PRIVATE THEATRE OF THE METROPOLIS.

To begin with, let us remember that London has no other form of playhouse than what is termed the private theatre. However high a standard may be reached by productions associated with individual examples, these private theatres cannot be considered otherwise than as having their basis in commercial enterprise. This commercial spirit is but rarely shaken off even by a management of the highest order.

The home of the drama in the Metropolis is sometimes a building owned and managed by the same person, who is a manager or actor by profession, or similarly owned and managed by some combination of persons (a syndicate or company) who undertake the direct control of their house through one or more of their number. More often, however, the owner leases his building for terms varying in length from a few nights to a number of years, and the lessee may be an actor, a manager, or again some syndicate or company formed for the presentation of an individual play or a series of productions. In the first case, that in which the theatre owner conducts his theatre directly, his holding principally resembles that of a theatrical business; in the latter case, where he leases his building, the property may be considered an investment which the lessee can use for his own special purposes. The latter

may, if he prefer it, make money by pandering to an inferior scale of public taste ; he may wish to entertain with due regard to Art, to educate his audience, to amuse it, or both. He may conduct the theatre with high ideals, or otherwise. But, with very few exceptions, it is inevitable that the theatre owner and theatre lessee must bear in mind the cost of land, and of bricks-and-mortar ! Some owners or lessees may have been granted voluntary support or subsidies as regards special efforts on their part. But as a rule, whether built for direct management or as an investment, the site, the building, and the equipment of a London playhouse are plain questions of rent-roll and *£ s. d.* pure and simple. What is more—the London playhouse is but seldom erected by the man who can sail an easy course with a large banking account at his back. With few exceptions we find a most complicated financial basis, in which questions of option, of mortgage, and the like, predominate. The same holds good for our provincial centres, with the one exception, that of the Memorial Theatre at Stratford-on-Avon, which had a special building fund voluntarily subscribed, with the view of erecting a monument to Shakespeare. The same state of affairs also exists in our colonies, and, with one or two exceptions, in that other great English-speaking country, the United States.

THE MUNICIPAL, SUBSCRIPTION, AND ENDOWED THEATRES OF THE CONTINENT.

But on the Continent what do we find ? Among Latin countries in the South of Europe we certainly meet with the private theatre to a considerable extent. We also find the private theatre in large capitals of the Teutonic countries in Northern Europe. We further have the private theatre which is subsidised by the State or otherwise, notably in Paris and Northern Italy. The private theatre, however, is not the *typical* home of the drama for the Continent. Principally the municipal, the subscription, or the endowed theatre prevails, and also to a certain extent Court and National theatres, though, as a rule, the Governments or Courts of Europe only possess opera-houses or large playhouses intended for the presentation of both opera and drama.

Now the purposes of a playhouse when not conducted as a money-making concern, as is necessarily the case with the private theatre, can be (1) for the satisfaction of luxury, (2) for educational purposes, or (3) for recreative purposes, or for the realisation of any two of these intentions, or even all three.

Let us commence with the municipal theatre of the Continent. Its object is generally educational and recreative, the low price of admission enabling all classes to witness the performance. Beyond the original outlay on the building the ratepayers may either allow some annual vote towards maintenance, or they may simply guarantee to meet deficit, should there be one. It is merely a question of good stage-management and the judicious pricing of admission ; for, as there are no profits to be made, the plays should practically be presented at cost price. It is not my purpose here to describe on what lines such theatres are managed, but I would impress upon you that the municipal theatre ranks with the highest of the public institutions of any community, and the building, which stands as a local monument, generally embodies all that the community can afford to give in art and excellence of workmanship.

Next, the subscription theatre, which differs only from the municipal theatre as regards origin. It is not the property of the ratepayers, but is presented to the town sometimes by one or more wealthy citizens, at other times by a large section of the community who desire to participate in providing the town with a suitable playhouse, and contribute from a few pence to some thousand pounds, according to their respective circumstances. It is true that such subscription theatres are not infrequently managed by the municipality on the same lines as the municipal theatre, the donors having presented the playhouse to the public authority, and the municipality having undertaken its administration. It is thus that

we get the so-called "City" theatre, which, though for all practical purposes a municipal institution, yet differs from it by the manner in which it was brought into existence. On the other hand we have the *bona fide* subscription theatre, managed by the representatives of the subscribers or by trustees, the municipality, however, having perhaps also contributed to the fund in some form or other, such as by a grant of money towards the building, an annual grant towards its maintenance, or, as is often the case, by the gift of the site. Then, again, we have the institution which is managed by the subscribers themselves, who, however, in some cases hold the actual building in trust, some rich citizen or citizens having built a playhouse and handed it over to a general body of subscribers. They equip it and undertake to manage the establishment, guaranteeing any deficit in the usual way. Lastly comes the endowed theatre, for which land and building are presented, together with a sufficient sum put in trust to cover the maintenance of the block, and any reasonable deficit on the productions. It is the *bona fide* endowed theatre of this description that rightly ranks with some of those generous gifts of endowed picture galleries, public libraries, and artisans' dwellings for which this country is distinguished.

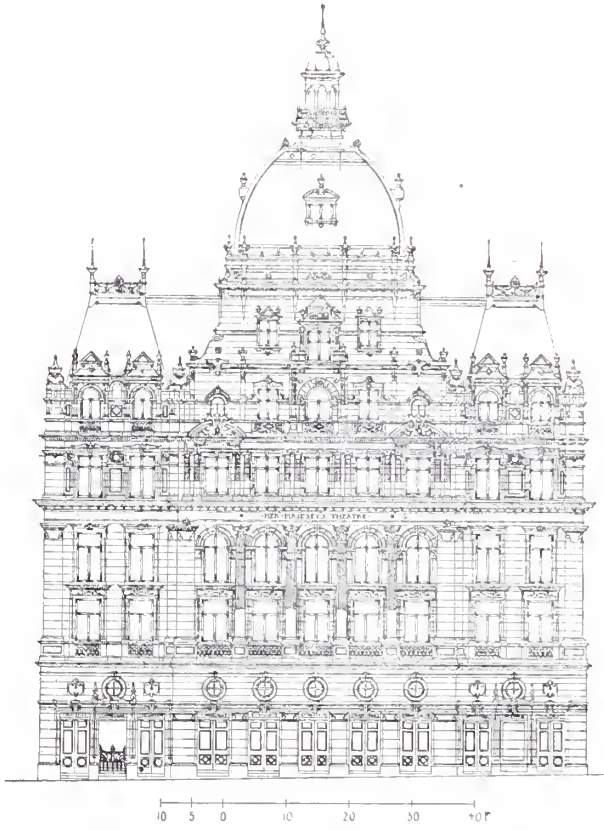


FIG. 1.—PRIVATE THEATRE, HAYMARKET, LONDON.

Now each of these—the municipal theatre, the subscription theatre, and the endowed theatre—is essentially a public institution. The standard of its founders is a high one, and where this is the case it follows that the conception and rendering of both interior and exterior—in other words, the architectural lines—ought to attain an equally high standard. The municipal theatre practically always stands as a monument to the prosperity and culture of a community, and the architecture of the subscription theatre is intended to give a similar impression. A certain spirit of rivalry between different localities also affects the architectural treatment; for the municipal or subscription theatre generally becomes the show place of the locality; it is not infrequently used for purposes of ceremony and hospitality; in many respects it is also the assembly room for all classes. As suitable law courts should emphasise the dignity of justice, and a Government office indicate the centre of authority, so should the playhouse embody the social status, and the culture and prosperity, of the community; and this, I am glad to say, is generally the case on the other side of the Channel.

But let me at once say that not every subscription or endowed theatre, nor every muni-

city theatre, however, in some cases hold the actual building in trust, some rich citizen or citizens having built a playhouse and handed it over to a general body of subscribers. They equip it and undertake to manage the establishment, guaranteeing any deficit in the usual way. Lastly comes the endowed theatre, for which land and building are presented, together with a sufficient sum put in trust to cover the maintenance of the block, and any reasonable deficit on the productions. It is the *bona fide* endowed theatre of this description that rightly ranks with some of those generous gifts of endowed picture galleries, public libraries, and artisans' dwellings for which this country is distinguished.

The most recent form of the subscription theatre, by the bye, is the "People's" playhouse, voluntarily subscribed for by every class of the community, and conducted on co-operative lines; while a particular form of the endowed institution is the playhouse which has been established on philanthropic lines for the entertainment and elevation of the working classes, like many of our free libraries.

incipal theatre, is erected solely for the presentation of the drama, though there are many instances where this is the case. Only recently I have heard that the city of Frankfort, which already has a magnificent subscription opera-house, is about to have a municipal home for the drama as well. Not infrequently are such playhouses also intended for the presentation of opera. A playhouse may be built particularly as the home of the drama, but it may be arranged so that opera also can be represented. The opposite is often also the case: that is to say, a municipality has its opera-house in which drama is presented, and besides the regular opera company there is a regular dramatic company. As, however, we are speaking of the "housing of the drama," it is not a question of immediate importance whether the building is used for other purposes than that for which it was originally intended, or whether drama is temporarily produced in what we might term an opera-house. The only point we have to bear in mind is that frequently the same building is technically unsuited for the two purposes. A building intended for the presentation of the drama, and well balanced in its proportions, becomes "dwarfed" in feeling, if I may say so, when grand opera is presented in it; whilst, *vice versa*, all the beautiful effects in acting a chamber play are lost in a building designed primarily as an opera-house. Now this can be the case, and is sometimes the case, in the municipal, subscription, and endowed theatres, but as a rule we may take it that this unsuitable combination is one of the characteristics of the National and Court playhouses. Of course there are also National and Court playhouses identified solely either with the drama or the opera, for Vienna has its Opera House as well as its Court playhouse. The Czar's Theatre administration has together seven playhouses, three of which are devoted to drama. Berlin has its *Schauspielhaus* as well as its Opera House.

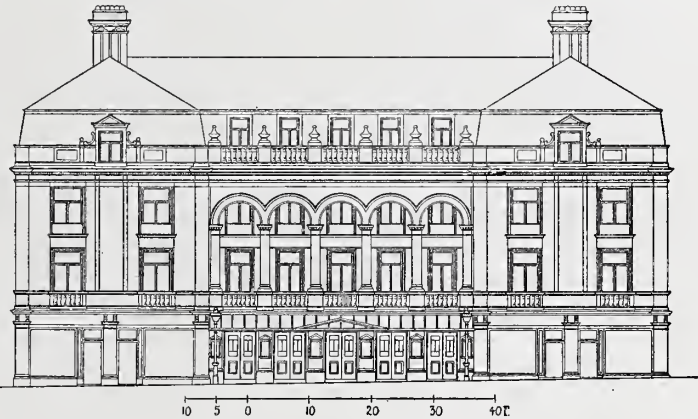


FIG. 2.—PRIVATE THEATRE, WOLVERHAMPTON.

THE COURT AND GOVERNMENT THEATRES OF THE CONTINENT.

But what is a National or a Court theatre? I have said theatres originate either from a commercial object, for the gratification of luxury, for educational purposes, or for recreation. Now the Court theatre is peculiarly the luxury of royalty, established and maintained at the expense of the reigning monarch, though generally open to the admission of the general public on a certain payment, except when reserved entirely for some Court function. The Court playhouse is generally the pride of a Continental monarch: he uses the building for the entertainment of his guests, for public receptions, and the like. Whether the production be an opera, a play, or a ballet is often quite immaterial so long as the production is of a high standard and does credit to the culture of the Court. Being the outcome of luxury, the Court playhouse, however, frequently becomes a veritable palace of luxury, for nowhere is the play more sumptuously housed than in these Court establishments. This lavish style of housing is, however, not so much due to any desire to give the play dignified surroundings, as to give the Court a suitable place of entertainment. Practically the same description holds good for National and Government theatres, with the exception that the institution then becomes the pride of the nation at large and a suite of reception-rooms for the Government. The educational objects put forward by Governments are, I am afraid, merely an excuse

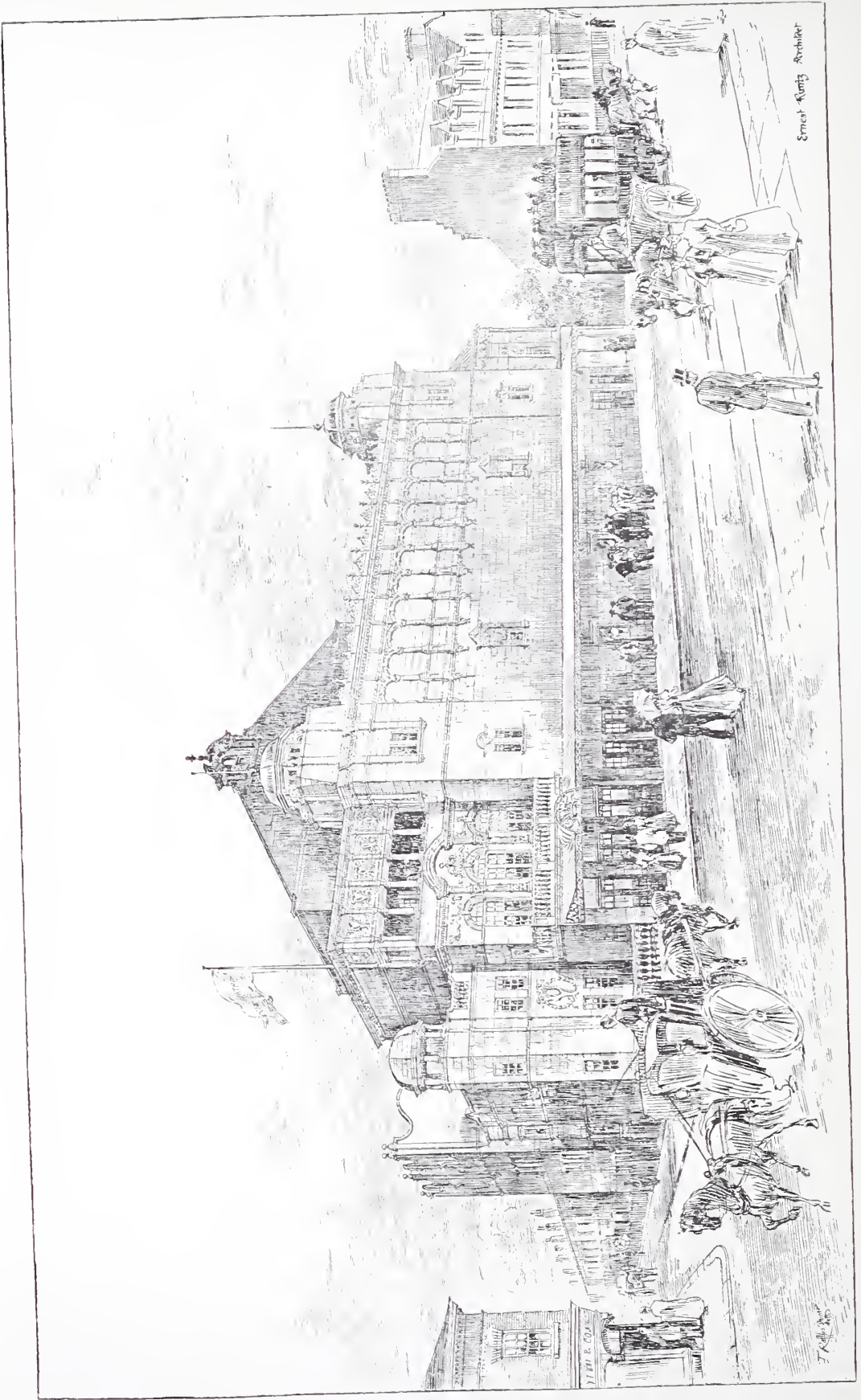


FIG. 3.—PRIVATE SUBURBAN THEATRE, FECKHAM.

in such cases. As the Court playhouse is a symbol of the power, means, and culture of a reigning monarch, so does the Government theatre indicate the resources of the State; the architectural pretensions of the building vary according to national influence and wealth, and are quite independent of any idea of suitably housing dramatic art.

Now, as I have said, the presentation of opera or drama is often combined in the Court or National building, many Courts and Governments having only one playhouse, whilst employing two or even more companies for the presentation of the different forms of enter-



FIG. 4.—SUBSCRIPTION THEATRE, STRATFORD-ON-AVON.

tainment. As I have indicated, however, this system does not tend towards the proper housing of the drama, for no art requires so careful and studied an environment. The greatest attention should be given to questions of proportion, even to the extent of the designer weighing the preferences of an audience in favour of grand drama or chamber drama. The house which may be suitable for the presentation of a great Shakespearean play is by no means desirable for some little character sketch with a cast of only four or five individuals. The administration of the Court Theatre at Vienna has recognised this; and whilst at the present time it controls the most beautiful home for the drama that exists in the world, it has yet deemed it necessary to consider the advisability of erecting another Court theatre, devoted entirely to chamber plays, leaving the grander house for the presentation of great classical plays. It is too ridiculous to find the *Comédie Française* Company playing at Drury Lane, and Grand Opera at Daly's Theatre. Nothing could be more incongruous. I will even go farther; I will say that whilst Her Majesty's Theatre is

by no means too big for the presentation of *Julius Cæsar*, I should much prefer to see *The Liars* given at the Criterion than at the larger house in the Haymarket. Eight hundred with a maximum of one thousand should be the extent of an audience for a chamber play if every individual in that audience is to appreciate the acting. For *Julius Cæsar* there is no



FIG. 5.—SUBSCRIPTION THEATRE, FRANKFURT.

reason why the auditorium should not be capable of holding two thousand people. In the same way I see no reason why the Opera House should not hold an audience of three thousand.

THEATRE DESIGN.

But now, having indicated what spirit prevails for the original conception of municipal and subscription and endowed theatres on the one hand, and Court and Government theatres on the other, let me briefly recapitulate and say that the municipal theatre is intended to provide such suitable housing for the drama as can be offered by the community, the subscription or endowed theatre to the extent of the provision offered by its donors, while Court and Government theatres are erected in a manner commensurate with the larger financial resources of the Government or monarch, irrespective of what is due to dramatic art. With the private theatre I would here remind you that we found the housing of the drama to be simply a question of *£ s. d.* In the private theatre we have only a problem of economy to solve, and the only regard that has to be given to the architectural rendering is whether the individual holder or lessee considers that his audience requires a little more gilt, a little more York stone, Art in its best meaning, a semblance of Art, or the gaudy treatment advertisement. I am glad to say that we have a few actors

and managers who, though risking their money, have thought of the suitable housing of the drama, independently of the absolute restrictions of *£ s. d.* Take Mr. Darbyshire's charming record of his architectural experiences, and we very soon recognise the spirit in which Sir Henry Irving first put the old Lyceum in order in 1878. But Sir Henry Irving has been the exception, and those who followed in his footsteps were often little else than mere imitators, void of the true intelligent feeling which is the characteristic of their master. To narrate an anecdote which illustrates how the true feeling for the suitable housing of the drama can be misinterpreted, a certain actor-manager—so the late Mr. Phipps told me—going to the extreme, wished his vestibule to have a sacred appearance. "We should feel inclined to fall on our knees when we approach this shrine of the drama," said that actor-manager. It is true that he changed his mind afterwards, and wished to have his vestibule majestic—"Plenty of red, gold, and marble," he said; "we should be inspired by the awe of the drama and its majestic power." Well, he changed his mind again; he thought of the drama in its homeliest spirit, as the friend of the tired mortal, and that vestibule was to entice the wanderer into homely surroundings. So you see how that actor-manager successively misinterpreted the requirements of a theatre, though well-intentioned, and as architects you will, I am sure, pity the *confièrè* who was instructed to solve the three problems in turn, and then a combination of all three. I may as well say that the architect did not solve the problem. And if you wish to enjoy the beautiful plays which are presented at the theatre I am referring to, mind you go in by the patent pit door,

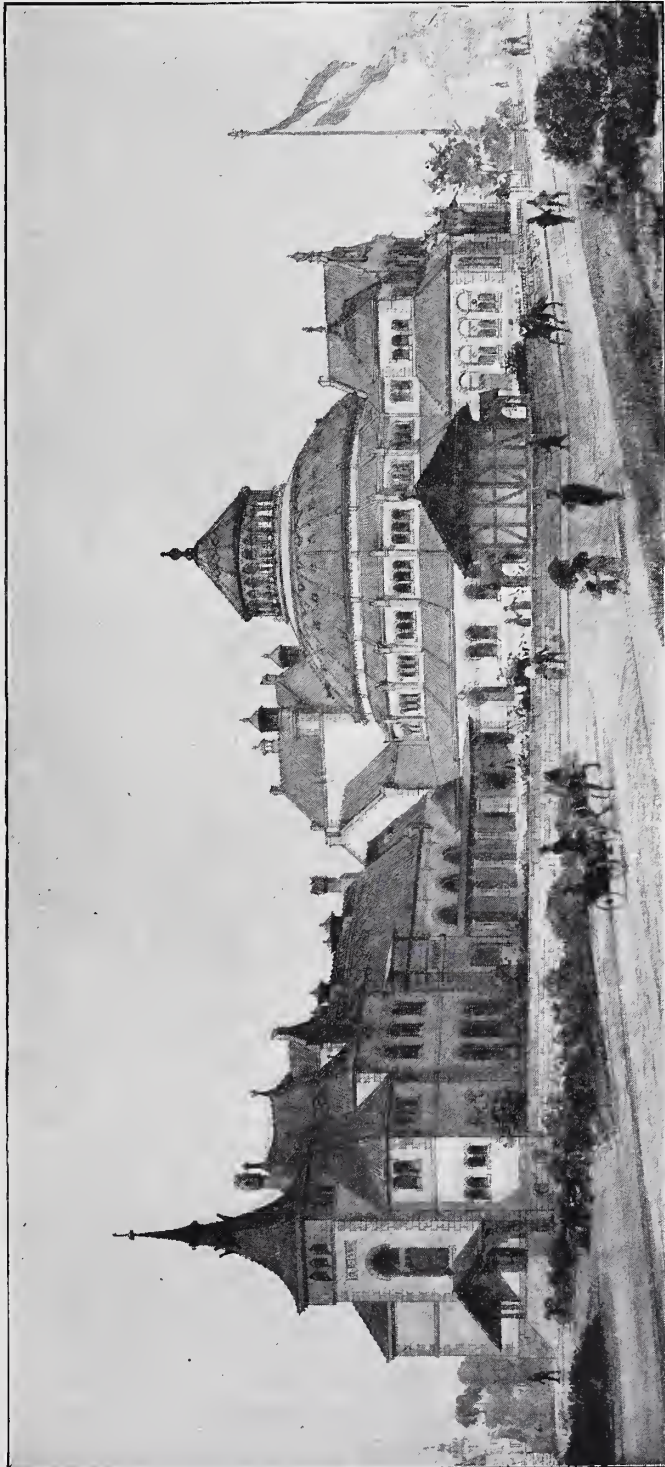


FIG. 6.—PEOPLE'S SUBSCRIPTION THEATRE, WORMS. (From *Modern Opera Houses and Theatres.*)

or the stage door, or a window if no door is available; but do not venture through that sacred, majestic, and homely vestibule, for it will spoil your evening! But it is not often that we have such an employer as Sir Henry Irving, nor even the

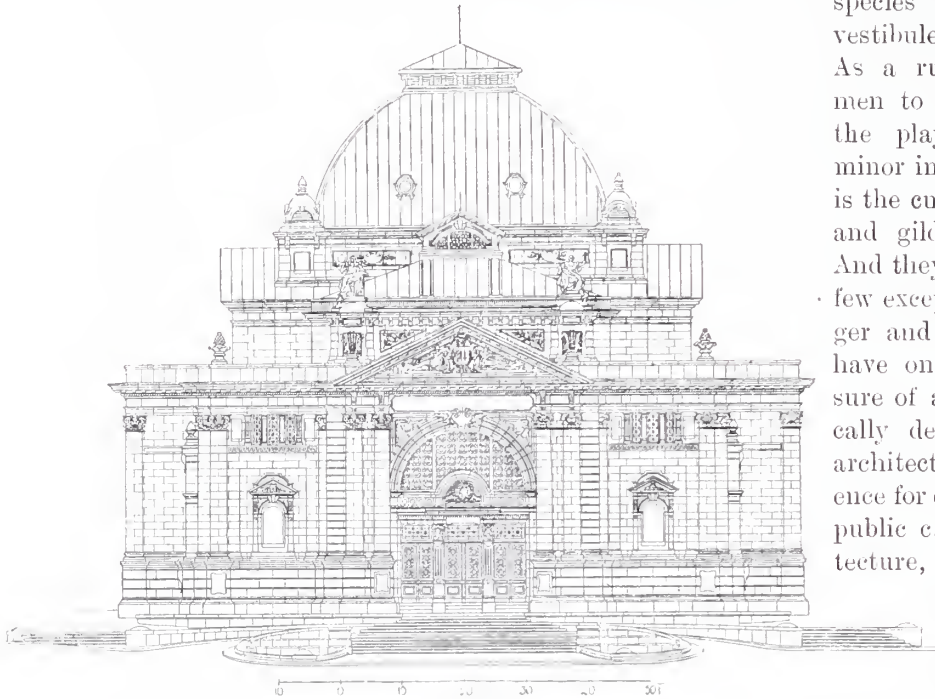


FIG. 7.—MUNICIPAL THEATRE, ESSEN.

species of actor-manager whose vestibule I have just referred to. As a rule we have to deal with men to whom the appearance of the playhouse is a matter of minor importance so long as there is the customary display of velvet and gilding in the auditorium. And they are quite right, for with few exceptions the London manager and his provincial colleague have only to cater for the pleasure of a sensation-seeker practically devoid of any feeling for architecture, and with little reverence for dramatic art. The British public cares very little for architecture, and the drama is merely classed as an entertainment. It is otherwise outside our isles. With a genuine reverence for dramatic art

there is also a genuine interest in architectural work, with the result that the play finds a worthy home amid appropriate and dignified surroundings.

THE THEATRE ARCHITECT.

Now I have frequently said that the London playhouse is generally placed in the hands of architects who are merely good planners, good constructors and business men, with a qualification of being able to provide for a maximum audience at a minimum outlay. With but few exceptions, it is of little importance that the so-called architect lacks the true feeling of art, if only he can secure the latest trick of the plaster manufacturer to catch popular taste. What counts more than any repute for architectural design is that the architect should have the talents and facilities of a financial agent, and be able to find money for the enterprise. I have heard the late Mr. Phipps remark (and I had a great admiration for Mr. Phipps's powers of designing) that half his clients would have been frightened away if he had spoken of architecture with a big A. They would have thought him expensive, a faddist, or anything but what they wanted. He purposely avoided trying even to make his façades or decorations presentable, for fear of being thought an art architect and losing his theatrical *clientèle*. Of the many private playhouses that he designed—and I think I know them all—Her Majesty's Theatre is the only one where there has been any serious attempt made at architecture, and this is mainly due to Mr. Tree having indicated that he wished to have something above the commonplace. Of private theatres by other so-called "theatrical architects" I regret that I do not know any that can boast of architectural pretensions. At present the only theatre that deserves serious attention on account of its rendering is quite a small one at Cambridge, which, in

spite of most unsuitable surroundings, has a charming interior. This is the work of Mr. Rüntz, who does not figure as a distinguished theatrical architect, but as an architect in the best sense, who, among other important commissions, holds several for playhouses. His new playhouse at Peckham, the perspective of which is given on p. 186, promises, however, to show an architectural rendering of a higher order. He is bold enough to risk losing his theatrical client by giving us a building of some importance. Mr. Darbyshire, by the bye, has conceived

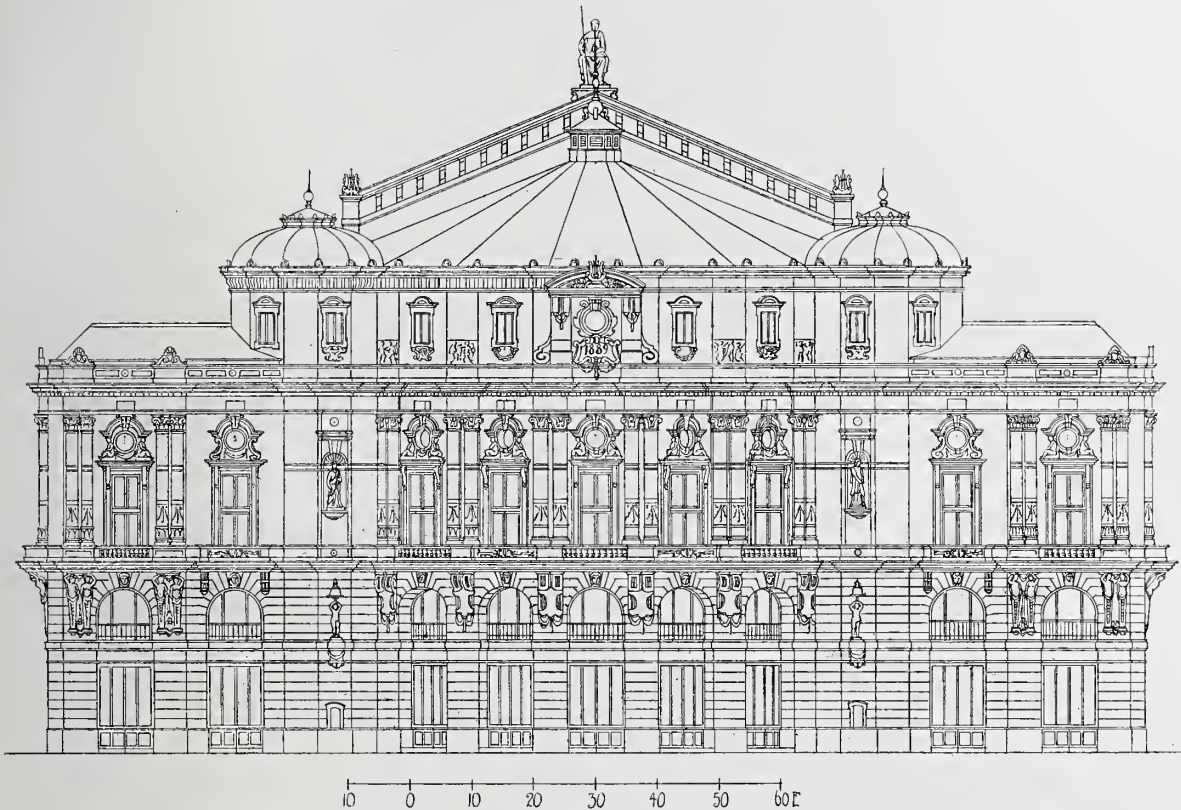


FIG. 8.—MUNICIPAL THEATRE, BILBAO.

some excellent plans on true art lines in connection with the variety theatre, which we must not, however, refer to when speaking of the drama. Messrs. Colcutt, D'Oyly Carte, and Holloway similarly did excellent work at what is now the Palace Theatre of Varieties. But so far as the drama is concerned, the architectural rendering as a rule is quite nondescript.

Now, abroad, the architect of a playhouse has to be an architect in the very highest sense of the term—and very rightly so too. Where a municipal monument, the gift of a subscriber, or a Court or Government theatre has to be dealt with on the lines indicated, it is only natural that every effort should be made to obtain a good building; and even in the private theatre, as will be seen from the New Theatre at Berlin, the necessity for catering for people who take interest in architecture and respect the drama compels the architect to be something more than a mere constructor. For the building of a suitable home for the drama is one of the most difficult tasks that an architect can undertake, and calls for a man endowed with a pure and true spirit of the architectural vocation. His work demands the largest share of real beauty, and the most careful blending of architecture, sculpture, and painting, whilst the complicated practical requirements are at the same time hostile to all

his efforts at perfection in design. There is, in fact, no class of architectural work which puts forward more numerous, complex, and essentially technical demands, and requires at the same time that the rendering shall not fall below the highest standard of taste, than that of the theatre.

EXAMPLES OF PRIVATE THEATRES.

But now let us look at examples of playhouses erected under the different circumstances I have indicated. We will commence with the private theatre. But let us simply pass over the eyesores which have been erected in such numbers, and only take the very pick of what we have in private theatres in the Metropolis. Now there is no doubt that in the West

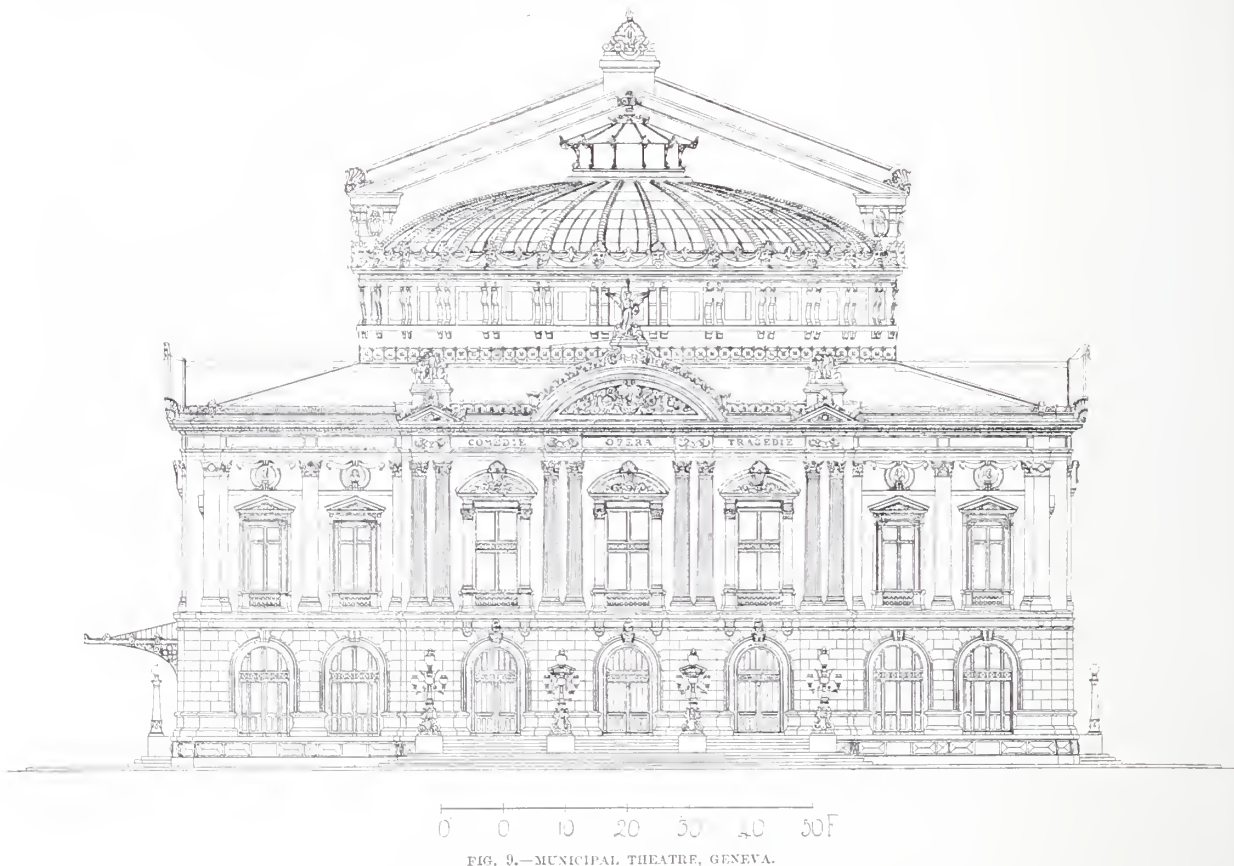


FIG. 9.—MUNICIPAL THEATRE, GENEVA.

End the most recent playhouse, Her Majesty's, in the Haymarket, just referred to, is in a way immeasurably the best example of recent theatre architecture, both in plan and architectural rendering, and this is due, as I have said, to a great extent to the liberal spirit of the lessee, and also to the peculiar facilities of the site. In Her Majesty's Theatre the late Mr. Plupps surpassed all his former efforts, and furnished London with a playhouse so admirable in the arrangement that it will long be considered a model of its kind. And yet no one who does not recognise the posters and the lighting would point out this building as the home of the drama. Its exterior, excepting for its many doors, would be just as suitable for a suite of modern flats or an hotel. And in the interior, though we find many individual and pleasing features, but few are characteristic of a playhouse, nor does the decoration show breadth of design. All that the practical planner could have done has been done in this

building to fulfil the requirements of the management, with due regard to economy; but that is the greatest praise we can give it, and in that respect alone is it a model. To

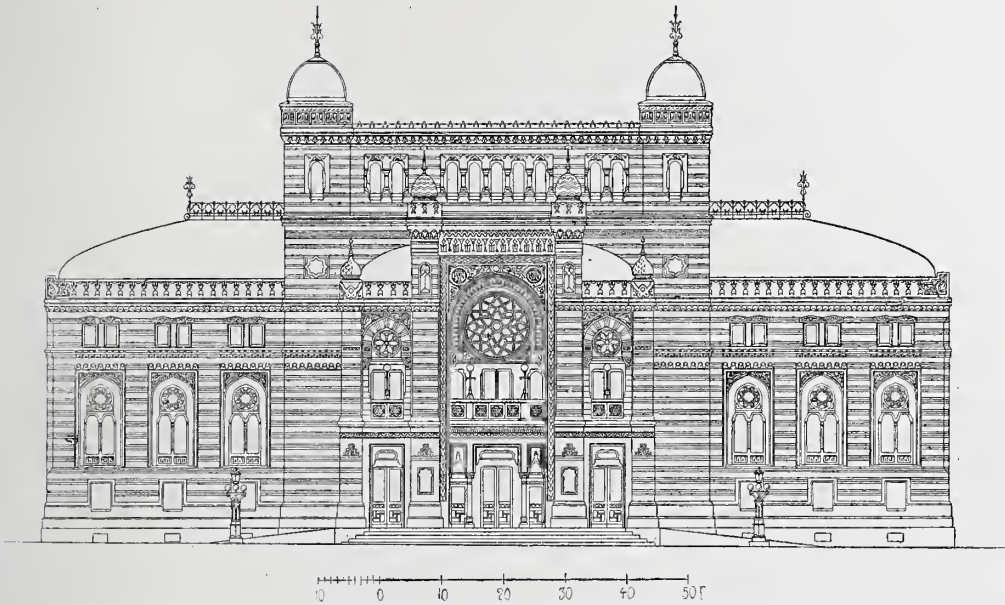


FIG. 10.—MUNICIPAL THEATRE, TIFLIS.

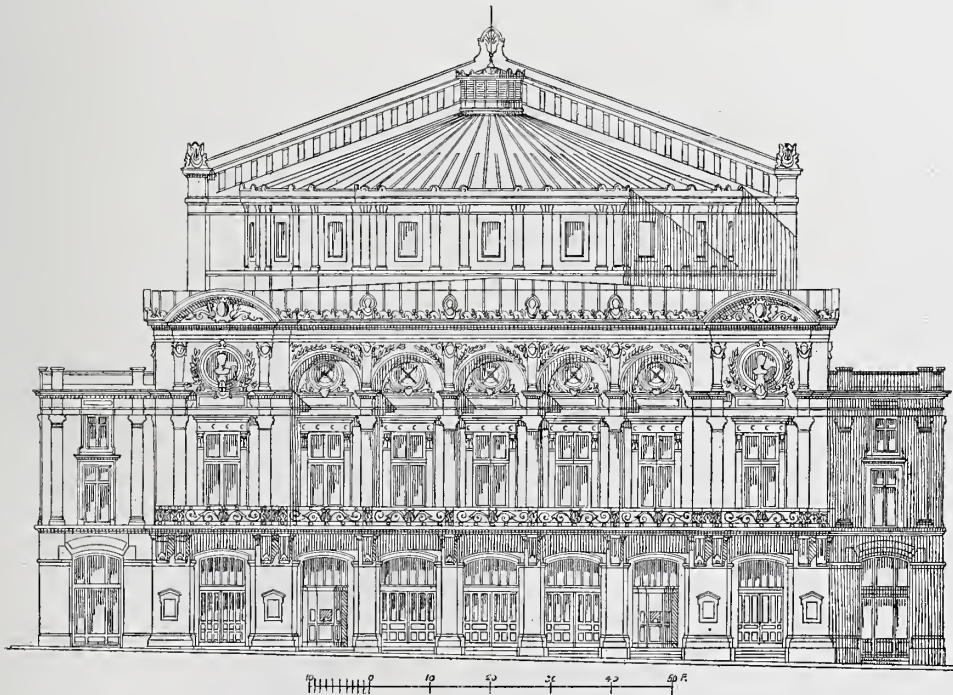


FIG. 11.—MUNICIPAL THEATRE, RHEIMS.

a certain extent you could almost say the same of Daly's Theatre, in Cranbourne Street, which has many advantages of plan, construction, and equipment; but, again, it can surely not be considered as a suitable home for a revered art. Her Majesty's Theatre stands

head and shoulders above the other West End playhouses; Daly's comes next, then follow a certain number of playhouses which are somewhat above the average, like the Duke of York's Theatre, and the Shaftesbury, and the Lyric: but surely, none of these can in any way be confused with what we would term a suitable home for the drama. If we glance round the suburban theatres we find a similar state of affairs. No doubt we have many theatres practically planned, but one building alone is likely to stand out among its contemporaries, and that one which, as I have already indicated, is yet in course of construction.

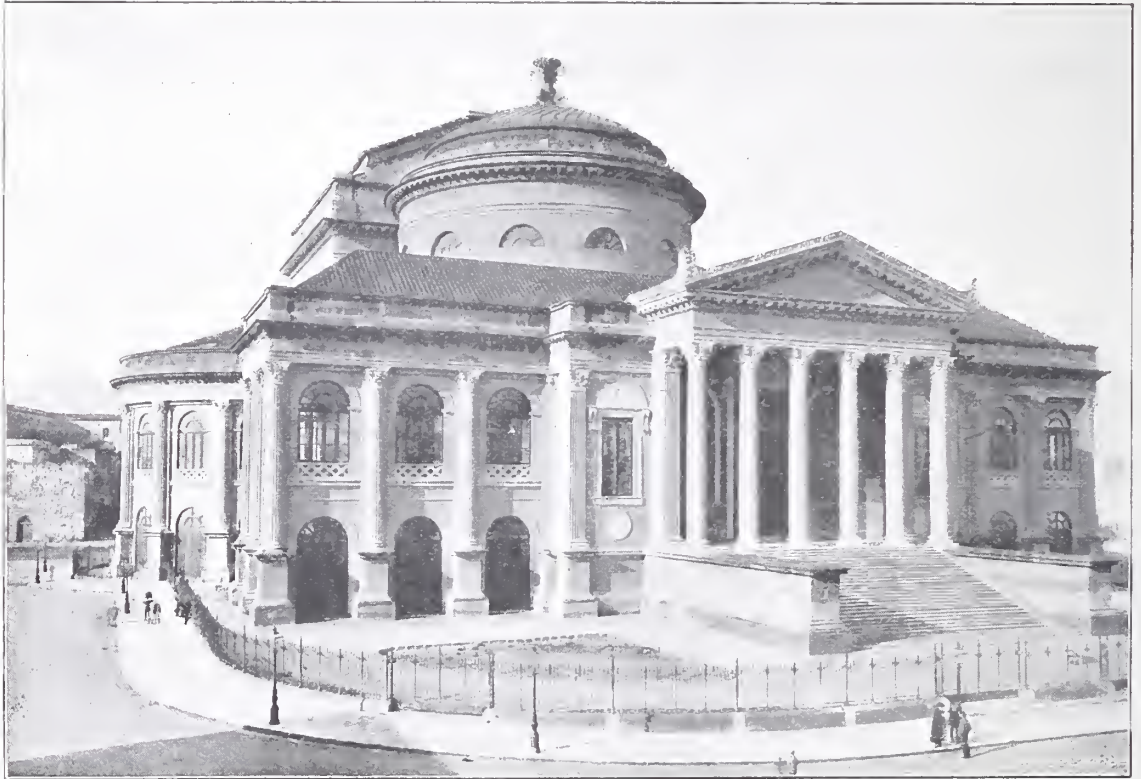


FIG. 12.—MUNICIPAL THEATRE, PALERMO.

I refer to the new Peckham Theatre [p. 186], designed by Mr. Rüntz, the architect of the New Theatre at Cambridge, which, as I have pointed out, stands far above the average provincial playhouse. The Wolverhampton Theatre of the late Mr. Phipps comes next, and though of broad conception in plan, I am afraid its architectural rendering makes it a bad second [p. 185].

After these examples of our private theatres, let us turn to the Continental playhouses, which are built under almost identical conditions, *i.e.* those of a financial enterprise, with the one exception, that the general public demand that the play should be suitably housed, and some attention paid to architecture. No doubt financial reasons also here compel the architect to limit his expenditure in the architectural rendering. But, in conception, in outline, and in planning, some of these buildings take a very high position, and even in their architectural treatment merit considerable attention. The New Theatre at Berlin, which only seats an audience of 800, is a good instance of a playhouse which has been placed on an awkward site, and yet in every way accords with the requirements of the drama. The Lessing Theatre, in the same city, is another instance; and so is the New Theatre at Munich.

Other instances can be cited ; but as I have only selected the best examples of Metropolitan and provincial theatres in England, so do I limit myself to naming a few examples of the

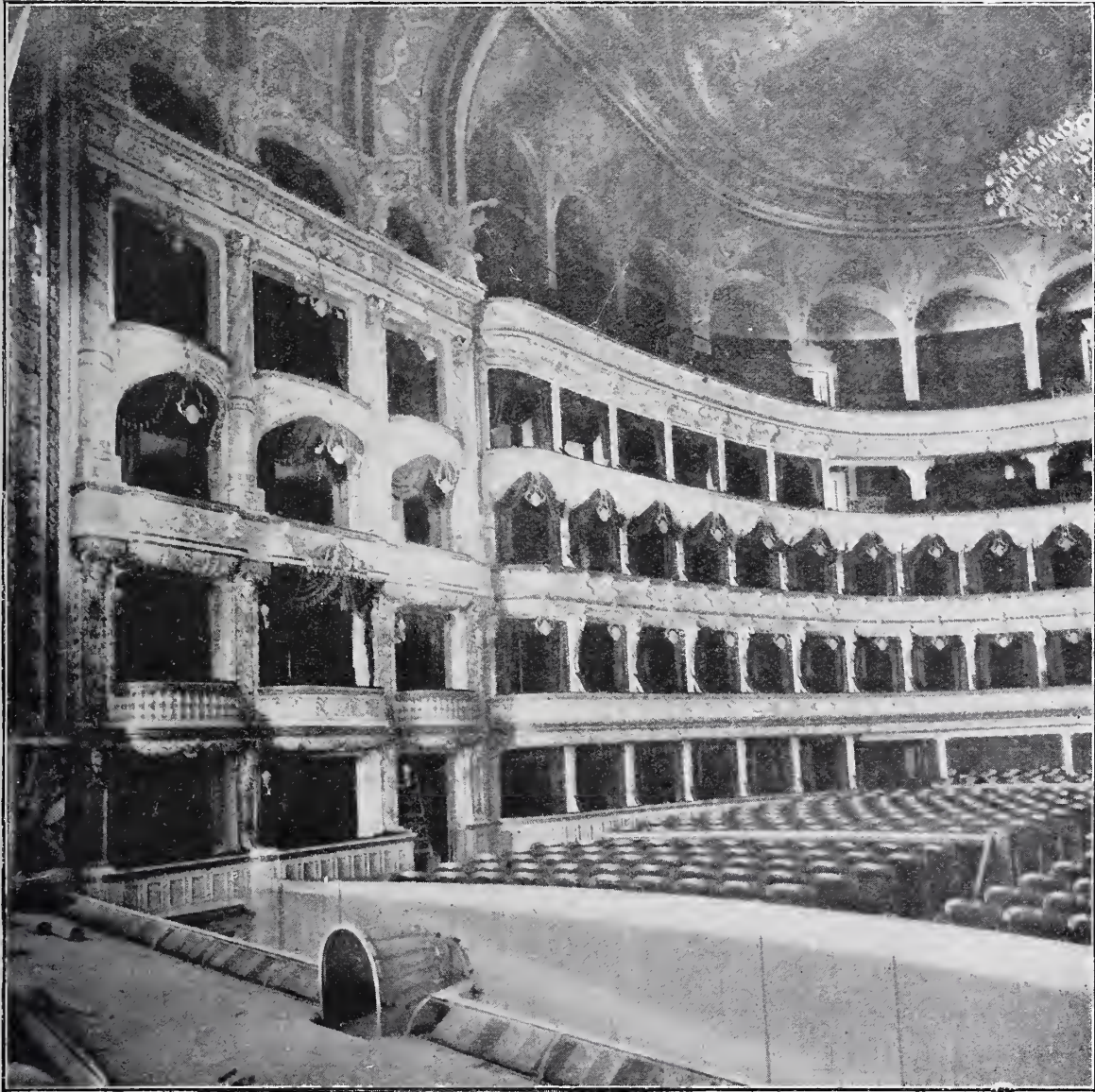


FIG. 13.—AUDITORIUM, MUNICIPAL THEATRE, ODESSA. (From *Modern Opera Houses and Theatres*.)

first order from the Continent. Everywhere, however, both in England, where we have no demand for good architecture, and no reverence for the drama, and on the Continent, where both demand and reverence exist, it is evident, in the case of the private institution, that the architect is cramped, and this even where the excellence of his intention is obvious. In the rendering of a private theatre it seems impossible to give the building the full dignity it deserves with the limited funds of private enterprise.

EXAMPLES OF MUNICIPAL, SUBSCRIPTION, AND ENDOWED THEATRES.

Let us now turn to examples of Municipal, Subscription, and Endowed Theatres, irrespective of their actual origin by gift, the subscription of ratepayers, or otherwise, and independent also of the fact that the theatre may or may not be used sometimes for the presentation of



FIG. 14.—NATIONAL THEATRE, CHRISTIANIA.

opera and other forms of entertainment. To begin with, we have at Stratford-on-Avon what I shall term a "subscription" theatre, which in every way accords with the special requirements of being a monument to a great poet, and a home for the drama with which he was associated. It is true that even here the funds were not lavish, but there were none of the cares of a private enterprise, and none of the usual difficulties of site. The 20,000*l.* spent on this memorial may seem a small figure, but it amply sufficed to cover the requirements and give ac-

commodation to the small audience for which it is intended. A visit to this theatre is most pleasant, both for the admirer of the drama and for the architect, and for once we find that every possible care has been taken to invest a building with due dignity, and with due regard for its association. Now on the same basis we find many interesting playhouses abroad. There has been no question of solely giving the maximum number of seats for the minimum amount of money, no question of cramping the site, and the design, to suit the exigences of commercial enterprise. The endeavour has been to provide a locality with a suitable home for the drama, and at the same time to erect a monument which shall become the pride of the community to which it belongs. Take Heinrich Seeling's three municipal theatres at Halle, Bromberg, and Rostock—towns with populations of 82,000, 36,200, and 39,300 respectively. Consider the sites and the general conception. Then look at the small municipal theatres of Salzburg, in Austria, erected by Messrs. Fellner and Helmer; or their municipal theatre in Zürich, or any other of the municipal, subscription, or endowed

theatres which are illustrated on these walls. Remember, too, the beautiful monuments, such as the Amsterdam Subscription Theatre, with regard to which, however, I should emphasise the fact that it is devoted alike to opera and drama; and the Prague Theatre, and among others, going as far south as Palermo, in Sicily, or as far east as Nishni-Novgorod and Tiflis, in Russia, or stepping over the boundary and going to that "barbarous" country of Siberia, we find that even Irkutsk has also its beautiful municipal establishment which in

every way accords with the dignity of the drama. Further, I have referred to the People's Theatre, which is entirely the result of small subscriptions or donations. There is the People's Theatre at Worms, which was erected when that town had 30,000 inhabitants. Is not that building in every way suited to the presentation of plays? Or take the subscription theatres which are primarily due to the efforts of donors intent on

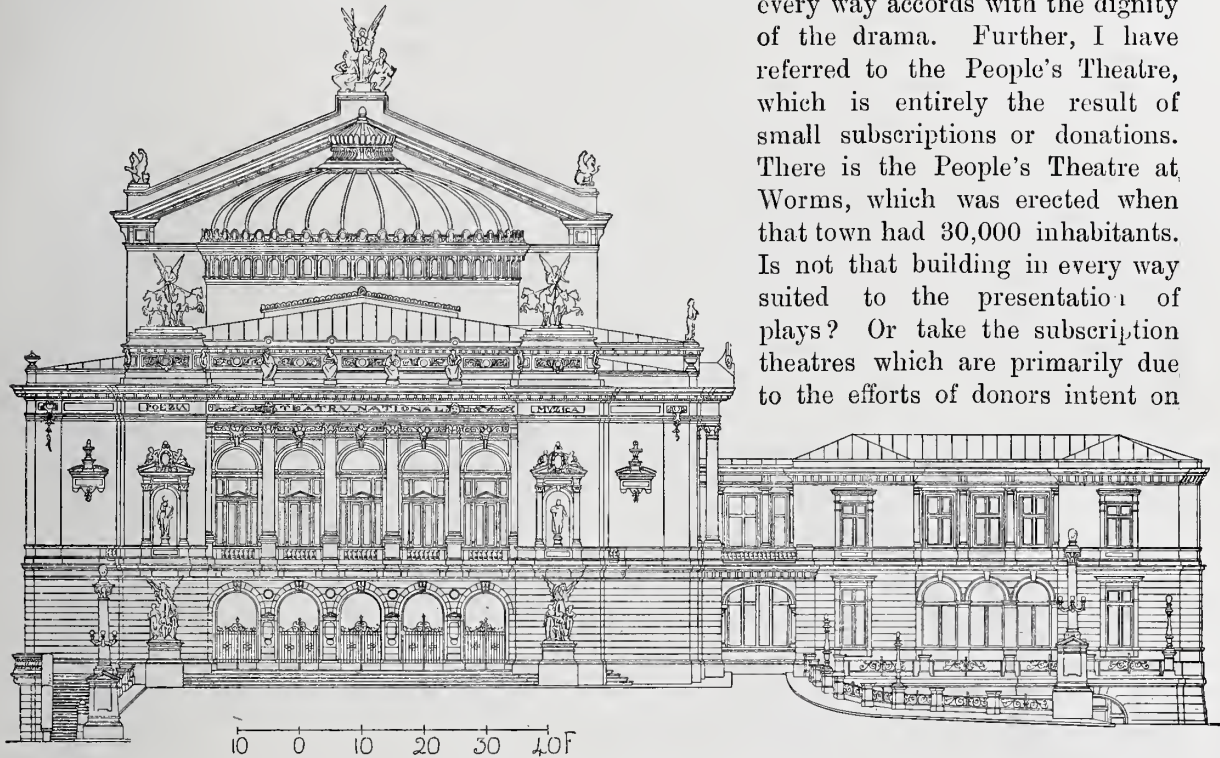


FIG. 15.—NATIONAL THEATRE, BUCHAREST.

furthering some special cause, like the various national movements. There is the German Theatre at Prague, and the German Theatre at Vienna. Everywhere we have the same story, that freedom from monetary anxieties, reverence for the drama, and the demand on the part of the general public for the suitable housing of that art, as well as for good architecture, result in playhouses which fulfil both ideal and practical requirements in every way. I cannot attempt any description of the examples that I have here mentioned, and in reality the drawings on the walls and the many photographs seem to me to explain everything. As I have said before, it is not my ambition to go into detail as regards the individual merits of buildings, their construction, or their equipment, and, with one or two exceptions, I wish only to draw attention to the circumstances under which the drama is housed. I will, however, again point out that of course where theatres have to fulfil the double purposes of an opera house and a dramatic house, the results, as far as drama is concerned, can never be so satisfactory as where the building is specially erected for a single purpose alone. This remark applies more particularly to such magnificent buildings as the New Theatre at Dresden, which is primarily an opera house, though grand drama is also presented within its walls. It refers also to playhouses like that of Odessa. But, in spite of the disadvantages of proportions and dimensions, the Municipal, Subscription, or

Endowed Theatre which fulfils the double purpose of opera and drama is certainly a more fitting home for dramatic art than the private theatre I first referred to.

EXAMPLES OF COURT AND GOVERNMENT THEATRES.

Having dealt with examples of the Private, the Municipal, the Subscription, and Endowed Theatres, I cannot but refer to instances of the Court and National institutions, the more so as it is among the latter theatres that we have the most magnificent home for the drama extant. This example, the Vienna Court Theatre, better known as the "Hofburg," takes the leading place among all dramatic houses. It is the greatest monument of the kind that has ever been erected; it is a Court playhouse in the fullest sense of the term: it is the property of an Emperor. It is the recognised centre of the drama of the Teutonic

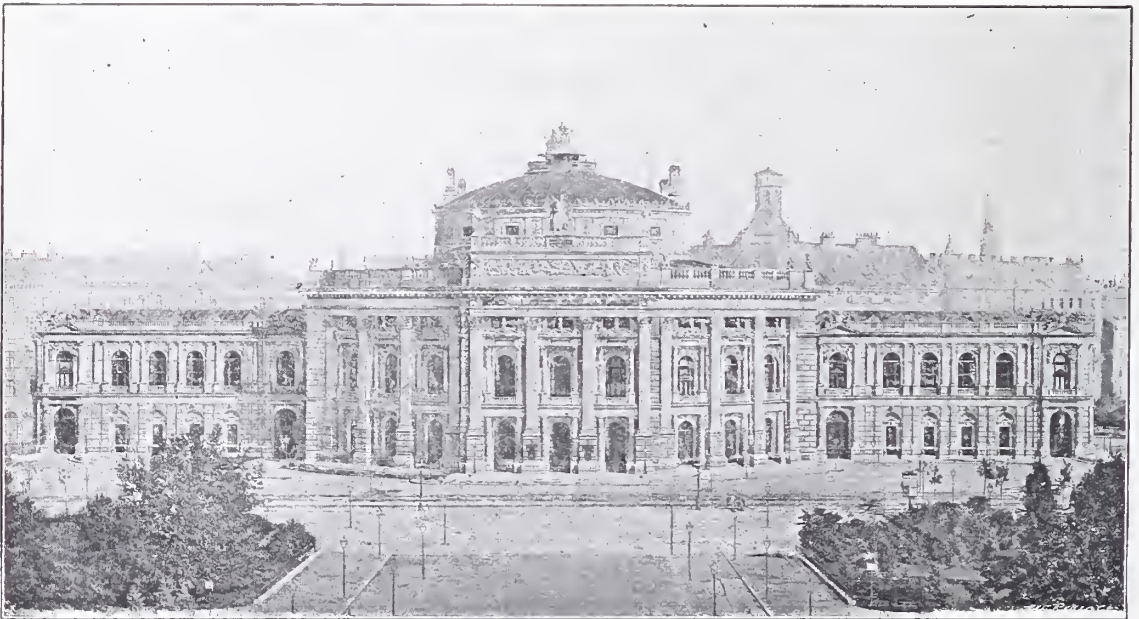


FIG. 16.—VIEW OF COURT THEATRE, VIENNA.

tongue. It can be entered for the low price of sixpence. It is the great monument of the Austrian nation, and there is no modern building to which any community points with greater pride than this Court Theatre. Nor have they erred in their judgment, for, as an example of technical skill brought to high perfection, it is the foremost home for the drama that has yet been created, both from the artist's, the architect's, and the actor's point of view. As this building embodies everything that is suitable to a home for the grand drama (and I use the words "grand drama" advisedly, for the auditorium is on too large a scale for the chamber play) I have been at pains to put before you a very complete set of drawings illustrating the structure.

These drawings, again, tell their own tale; but, owing to the remarkable position occupied by this playhouse, I may be excused for calling attention to some of the principal features of the design, and reminding you that the structure is the outcome of the combined efforts of Gottfried Semper and Baron Hasenauer. The plan and the general lines of the design embody the results of Semper's long study of the question of so-called radial planning, whilst the decoration and equipment give expression to that wonderful delight in characteristic detail and ornament in which Baron Hasenauer excelled. Semper's experience on the

Dresden theatres formed the stepping-stone for the general conception, and Baron Hasenauer's experience in the decoration of the great Vienna Court museums also stood him in good stead.

Now, apart from the ideal surroundings of this structure, which is situated on one of the most beautiful boulevards of the Austrian capital, it is the segmental treatment of the façade and its two wings which at once strike the eye and give this playhouse its individuality. The wings, it is true, are due to the special requirements of the site and the desire to add to the importance of the block; but the segmental treatment is solely the outcome of the system of radial planning referred to. Then it will be noticed that the general grouping is remarkable

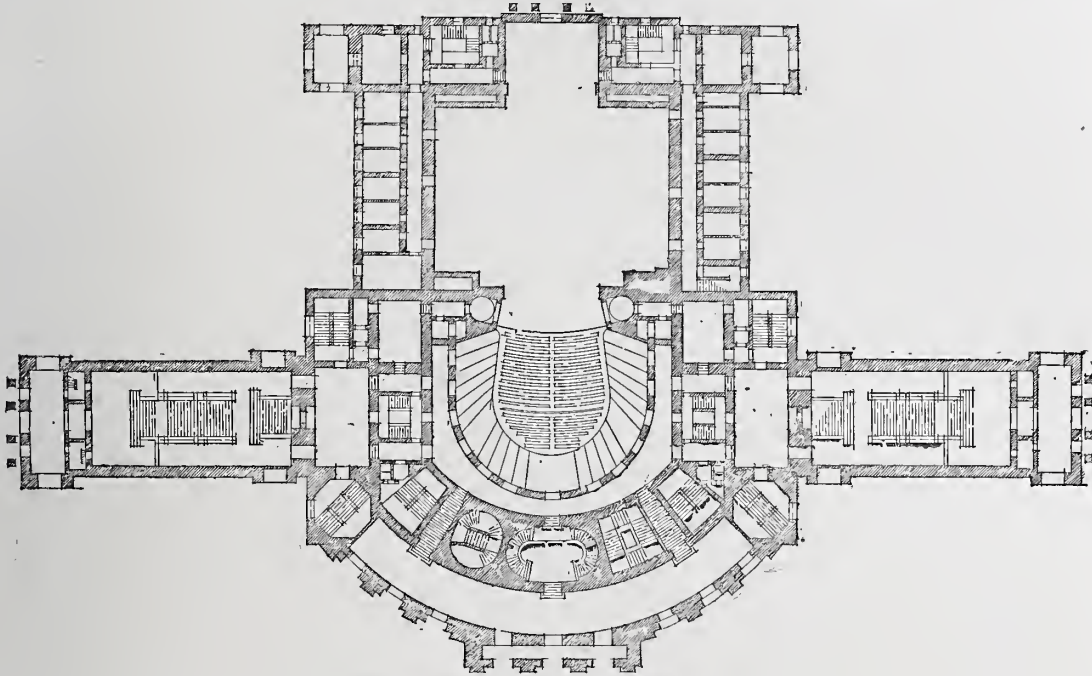


FIG. 17.—SKETCH PLAN, COURT THEATRE, VIENNA.

for the rational manner in which the exterior expresses every part of the interior arrangements. This characteristic is likewise very evident in the rendering of the principal façade.

In the interior, the segmental *foyer* is certainly the chief feature, and it is to be observed that the same formation is given to the grand vestibule and also to the minor lounge which is attached to the third and fourth tiers. As regards the conception of the grand *foyer*, with its simple grouping of tiers of pilasters, its exquisite colour-study and decoration, it is impossible for me to say more than that, with the aid of brilliant workmanship, perfection has been very nearly achieved. Another notable feature is the manner in which the two grand staircases rise from the street level to the first tier in one broad flight.

In the auditorium, again, I would call attention to the prominence given to the royal boxes in the proscenium, and the central state box. The careful and varied decoration of the box divisions is remarkable, and in the ceiling there is a skilful blending of semi relief work, with painted surfaces, which has a note of originality.

In its construction the building is remarkable for the extensive use of iron and steel in the containing walls of the auditorium, which are practically composed entirely of metal plates, fitted together in such a manner that the intermediate spaces are used as ducts for ventilation and warming. One of the characteristics of the Hofburg Theatre is the thorough way in which these and other technical appliances, both for the stage and auditorium, have been

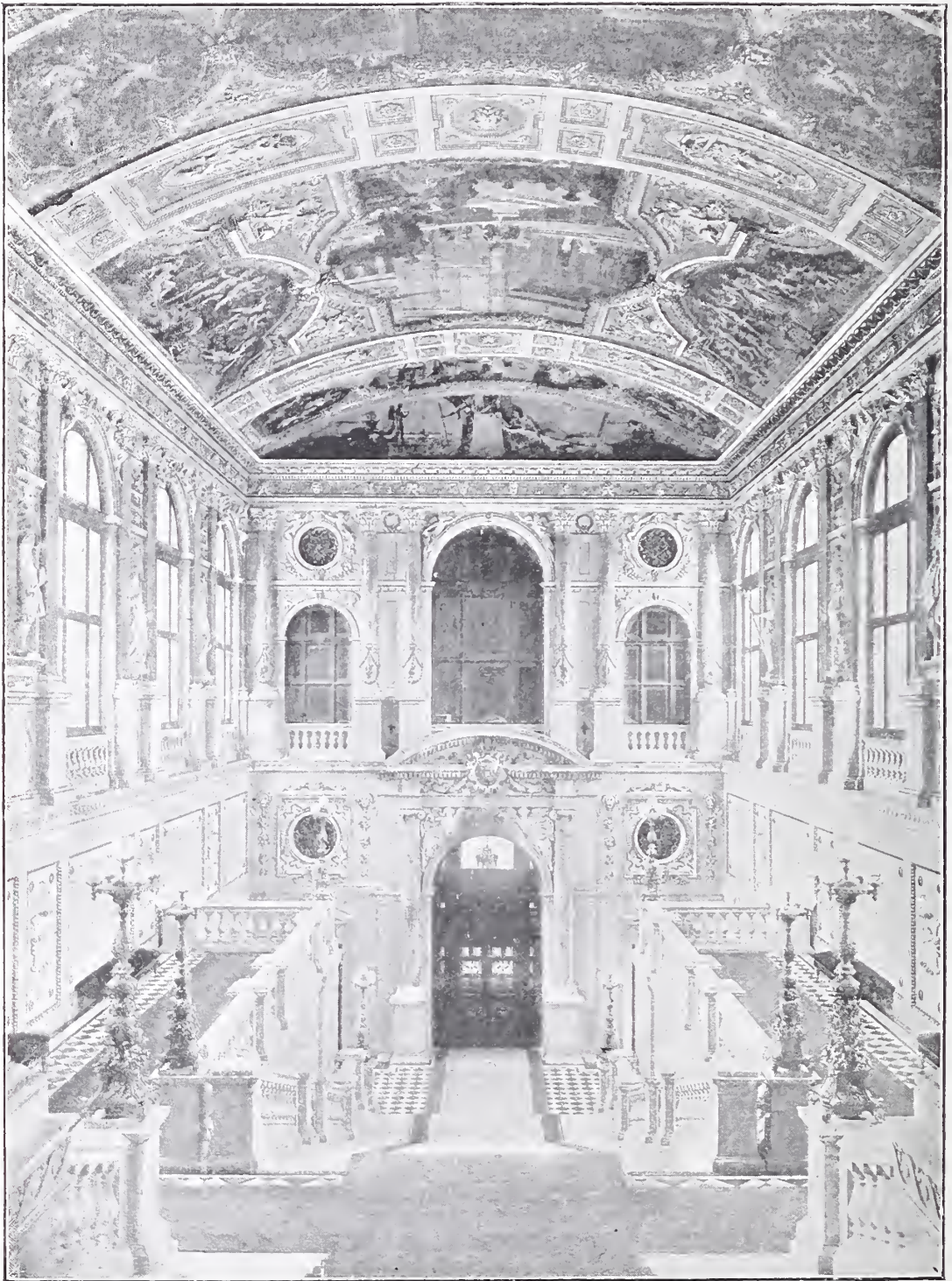


FIG. 18.—A GRAND STAIRCASE, COURT THEATRE, VIENNA. (From *Modern Opera Houses and Theatres*.)

elaborated. Everything that modern ingenuity has been able to discover is utilised in the block with more or less success, and in no part has the engineer's work been hindered, as is frequently observed in other theatres where architects have disregarded the requirements of the allied professions.

In conclusion, let me repeat that the Vienna Court Theatre, erected at a cost of nearly 550,000*l.*, and planned to hold an audience of 1,475 persons, is indeed a most elaborate and wonderful structure. Taken as a whole, the architectural rendering is of the highest order of art, and more nearly approaches perfection than in any other such building erected during the present century. This theatre offers a striking instance of that high standard of construction which I consider suitable for the housing of the drama.

CONCLUSION.

Now this is the only example of a true home for the drama of which I have attempted to indicate some of the main features of the design, for the simple reason that it embodies the highest standard of a dramatic home that the world possesses. As I have said, it is a Court theatre owned by a monarch. I have spoken of the Municipal theatre, the Subscription theatre, and the Endowed theatre, and I have called attention to illustrations of different examples of these individual classes. It is all-apparent that we cannot expect from the Private theatre what the other classes of structure give us; on the other hand, our institutions are such as to make it highly improbable that we shall, within reasonable time, have either a Court theatre or a State theatre, and, with a few exceptions in our most go-ahead cities in the north, it appears most unlikely that we shall soon see the Municipal theatre. May I, then, ask if it is not time to consider the question of Subscription and Endowed theatres seriously? If we subscribe to the erection of picture galleries, and the homes of other arts, why can we not subscribe for the theatre? If we endow museums and libraries, which are to aid in our education and afford us beneficial recreation, why can we not similarly endow the theatre? If we wish to erect monuments to mark the culture and prosperity of our times, why should they not take the form of playhouses? And if it is the universal desire that facilities for education should be given, why limit our gifts to the collection and distribution of books, or the collection and presentation of art treasures, when words on the stage properly spoken, in suitable surroundings, produce a far greater impression on the mind than any amount of book-reading or the study of collections? As I have said, the spirit which pervades our Government at the present time, and will pervade it for some time to come, banishes all hope of a State theatre, and I do not think there is any likelihood of our Court contemplating the erection of a playhouse. As there is but slight chance of having a Municipal playhouse, why not, as with so many other institutions by which England has become great, let the citizens take the initiative themselves, and, either by subscription or through endowment by the wealthier members of the community, give us that high standard of playhouses which we should rightly long have had? Surely the architect who writhes as he sees the many theatres from which every vestige of the feeling of Art is absent, should help to his very utmost in any movement towards providing us with better homes for the drama, structures which should at the same time become some of the most decorative features of our cities. Failing Government or municipal action, surely the Subscription or the Endowed theatre will lead soonest to this end. And hence may I conclude by urging that the architect with his great influence among all manner of men should advocate the Subscription and Endowed theatre—the only practical road at the present time towards the drama being suitably housed with due dignity and with full regard to the possibilities of architectural design.

I should like to add that in advocating the Subscription and Endowed theatres I am not merely idealising. The matter will soon be brought to a practical issue. Manchester, so long associated with the best forms of dramatic productions—Manchester, the pioneer in many respects regarding the suitable housing of public institutions, is leading the way. Manchester, in all probability, will be the first large centre to have a Subscription theatre in England. A strong executive Committee has now taken the matter up, under Judge Parry; Mr. Hughes and Mr. Alfred Darbyshire being among the moving spirits. The first serious move will be made on Wednesday week at a meeting, with the Lord Mayor of Manchester presiding. There seems to be no lack of enthusiasm. I am sure you will be very pleased to hear of this. It brings us so much nearer the true solution of the question of suitably housing the drama.

DISCUSSION OF MR. SACHS' PAPER.

Mr. G. BERNARD SHAW said that he was rather taken aback at being asked to open the debate, because he was not an architect, and, as a dramatic critic, was not in the habit of going to places where there was much architecture. Having been formerly a musical critic, there was one criticism he would like to make upon Mr. Sachs' paper. Mr. Sachs spoke of opera as being something that always required a very large theatre. That was really not more true of opera than of drama. Some of the greatest operas required a small theatre, just as much as certain plays required a small theatre. The works of Spontini, Meyerbeer, and Wagner might require large stages and audiences 3,000 strong; but to perform the operas of Mozart, admittedly the greatest of all operas strictly so called, in a large theatre simply murdered them. Leaving that question, he would consider for a moment the difficulties in the way of getting an endowed or a public theatre in this country. There was a condition of public feeling in England which did not exist in Continental countries. A majority of the ratepayers of England believed, not that the theatre was a Temple of Art and a centre of good, but that the door of the theatre was the Gate of Hell. That put a tremendous difficulty in the way of a proposal to endow a theatre from the rates. To give a practical illustration, he himself was a member of a local governing body in London, occasionally receiving deputations from the public on various subjects. The other day a deputation came up on the subject of the theatre, and that deputation, as usual, consisted of one person. He explained that he proposed to erect a theatre in the parish, and that the local clergyman had appealed to the Ecclesiastical Commissioners, who owned the land on which the theatre was to be built, not to sanction the erection of a theatre on that ground, especially as it would act as a counter-attraction to the Mission Hall. This gentleman was perfectly well aware that the parson's appeal would weigh heavily against him with the Commissioners. He (the speaker) wanted to point out, that while nobody

thought there was anything unbecoming in the Ecclesiastical Commissioners being landlords of a great many public-houses built on their leaseholds, yet it was considered quite natural to appeal to them not to allow the erection of a theatre. A very strong stand should be made against such a feeling, because, though the people who get all their culture and all their moral ideas from the theatre may be very few in comparison with those who get their moral ideas from the churches, it must not be forgotten that modern populations are so enormous that even their minorities are very important. There was another obstacle, *i.e.* that the Englishman believes very largely in private enterprise; and there is a very great deal to lead him to suppose that private enterprise is after all taking good care of the theatre. The recent multiplication of suburban theatres promised to raise the character of the central theatres considerably, because, owing to the excellence and cheapness of the former, the latter would be more and more forced to undertake a more highly skilled and better class of work. The general spread of culture was bringing about a state of opinion in which, for instance, Shakespeare was becoming extremely popular, and was one of the surest draws for a West End manager, not in the old mutilated acting versions, but given as fully and faithfully as time permitted. In fact, the only plays for which an endowed theatre seemed needed were, unfortunately, the very plays with regard to the merits of which there was a considerable division of opinion among the friends of the theatre themselves. Commercial enterprise was taking fair care of Shakespeare and the old school of plays; but when one came to the plays of Ibsen—to the plays of the really modern school—it would be found that the people who wanted to see those plays could not find their theatre. There was wanted for these plays the small theatres which accommodated 800 or 1,000 people. But if any one went to the vestry or to the London County Council and asked them to undertake a theatre to supply that particular want, such a proposal would stand those bodies on

their heads. Accordingly one was thrown back on such small private enterprises as the Independent Theatre, and the New Century Theatre, whose financial possibilities he would not discuss. In conclusion, he would say that, often being revolted at the baseness of the entertainment offered by the private theatre, he would be heartily glad if Mr. Sachs could stimulate the subscription theatre in Manchester, or anywhere else. He only wanted to show one or two of the difficulties he had met with in this particular line of propaganda.

MR. WILLIAM ARCHER said that he was in sympathy with everything Mr. Sachs had said. But he was in sympathy also with the manager who wished that the vestibule of his theatre should inspire awe and reverence. The fact of so many of our theatres being disguised as gin palaces, or sandwiched between gin palaces, was one of the causes that made it impossible to get people to consider the drama seriously. The effect of an architectural rendering which could give people the sense of going to an entertainment that was not entirely and merely a pastime, would raise the instinctive idea that people formed of the drama. Like Mr. Shaw, he would like to point out some of the difficulties in the way of a subscription or an endowed theatre. A State or a municipal theatre was outside practical politics. As regards endowing libraries, picture galleries, and museums, and not being able to find theatrical endowment, the reason was very plain. The picture gallery and the museum, once established, did not require management: they did their work in simply existing; whereas a theatre had to be carried on, and had to be managed. The theatre was a weapon which might be applied to any possible end. People naturally wanted a certain guarantee as to the end to which this particular weapon would be applied, and it was very difficult to give them that guarantee. Given an endowed theatre, he did not know where he could go for his manager and actors; they would have to be created. The proper kind of plays would have to be guaranteed. Of course there were the old plays—Shakespeare, Sheridan, and Goldsmith; but no theatre could subsist entirely upon these. It was the weak point of the Manchester scheme that the projectors went too much on Shakespeare. If a theatre were not supplied with worthy new plays—the outcome of the life of the day—and did not represent living literature, that theatre was a monument, as Mr. Sachs had said, but not a living institution, and not very well worthy of support. The opponents of these views came and said, "If you do not run the theatre on Shakespeare, where are your plays?" The answer was, that if the theatre were there the plays would be there. Under existing conditions the leading dramatists did not give anything like what was in them, because they knew that if they did not write a play that could run from one hundred to two hundred nights at a West End theatre, the demand

for their plays would die away. If they had a theatre which would treat a play simply as a work of art, and not as an article of luxury, a great stimulus would be given to dramatic creation. Having touched on this matter, he wanted very strongly to protest against a point put by Mr. Bernard Shaw, *i.e.* that it was when one came to exotic writers like Ibsen that one wanted an endowed or a subscription theatre. Now, any National theatre, any endowed theatre, that made Ibsen a plank in its platform would be simply giving away its case entirely. He was not likely to underestimate the value of Ibsen; but it was not in the least with reference to Ibsen that he wanted and hoped for an endowed theatre in England. He thought that, not only in Manchester but throughout England, the idea that Mr. Sachs had mooted was really in the air. The lecturer had shown that the theatre could be, and ought to be, a beautiful and worthy building. The mere realisation of what could be done in the way of theatre construction must bring home to them more and more the absolute meanness, the absolute pettiness and despicableness of London theatrical architecture as it at present existed, and it must kindle the ambition of any one who had any patriotism to see a worthy theatre in the centre of the artistic life of the English-speaking world. The great difficulty in London was, that they had no local patriotism. London was too big to have any local patriotism, and that was the reason why they should probably have some such theatre in one of the provincial centres before they had it in London. But if there was not local patriotism in London, there was imperial patriotism, and a worthy theatre in London would be a political instrument of no small importance. It would be the rallying point for the English-speaking world, to a degree at present, perhaps, unrealised. Perhaps one of those millionaires who seemed to find such difficulty in disposing of their millions might realise that he had here a unique opportunity for founding for himself a mighty monument in building such a theatre. He would be met by difficulties, but they could be overcome by patience and tact. The men existed, the manager existed, the actors existed and could be trained, and the plays would be written. In conclusion, he would say that the endowed theatre was looming ahead. It would probably be the result of either the subscription of a very few people or the donation of one man, and he believed more in the one man than in a number of subscriptions, because it would make such a magnificent monument for whoever seized the opportunity.

The Chairman, in calling upon Mr. Darbyshire [F.], mentioned that he had come from Manchester expressly to be present at the meeting.

MR. ALFRED DARBYSHIRE [F.], F.S.A., said that he had listened with great interest to the Paper, and was heartily in accord with Mr.

Sachs in all he had said with regard to the housing of the drama. But, unfortunately, he had come to two or three conclusions, and had some unpleasant truths forced upon him while listening. He was conscious that in the matter of theatrical architecture the English people were far behind those of the Continent. We could not produce in England a single architectural triumph in theatrical architecture. He had also arrived at another conclusion—namely, that under private enterprise, or private speculation, we should never reach to the height of the lovely things to be seen abroad. If any one who had not seen those magnificent erections abroad wished to know what true theatre architecture was, and if he would stroll through Trafalgar Square, for instance, and look at the Waterloo site, and think for a moment what could be done there; or, better still, perhaps, if he would stroll up Park Lane until he came face to face with Dorchester House, then he would see what a magnificent result could be produced on two such sites; but he would turn away from both sites, as an architect, with a sigh, because he would know that private enterprise and private speculation never could raise money enough to achieve a result on those two sites. Therefore he was quite in accord with Mr. Sachs as to private speculation. When an architect had to design a theatrical façade, hemmed in by other buildings—when he had no perspective returns, no open space, and was simply cabined, cribbed, and confined, he could do nothing. Therefore, as long as present conditions obtained, theatrical architects would never have the chance of producing anything like what could be seen abroad. What could be done to obviate this, or to get rid of this sad condition? Mr. Sachs had advanced two or three excellent theories. He had talked about what Monarchs, Courts, Governments, and Municipalities had done abroad. It was a simple thing to form a conclusion as to what could be done in England on any of these lines. As to the monarch or the Court, it was quite out of the question. A king like the old King of Provence would be completely out of place. The Government could not do it, because, if it erected a National Theatre in the Metropolis, the rest of the country would rebel at having to pay towards that institution. It would have to extend its theatre work to the principal cities of the empire, and the result would be something enormous in the expenditure of public money. They were therefore driven to the different great municipalities of the country. He was fond of his own native smoke-begrimed city of Manchester, but if it were proposed to levy a tax of a penny in the pound to produce a municipal theatre in Manchester, he was afraid to think what the result would be. They could not even raise money enough to house their works of art, some of which were very beautiful. Mr. Sachs had alluded, curiously enough, to the city of

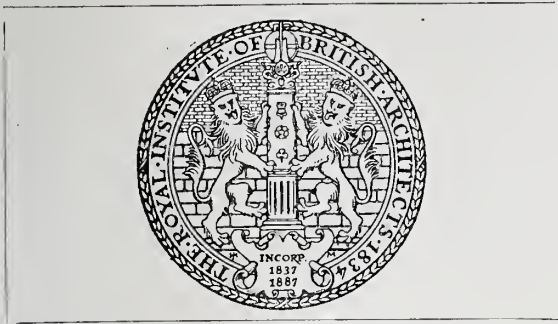
Manchester, and he (the speaker) had by accident a circular in his hand containing half a dozen sentences. It had been addressed by a number of idiotic enthusiasts, important citizens of Manchester, of whom he was one. The Lord Mayor had been approached, and had kindly arranged to take the chair at the forthcoming meeting. The circular ran:

It has been proposed that a Committee should be formed in Manchester for the encouragement of the representation of Shakespeare's plays, and the support of dramatic art worthy of a great city. You are therefore invited to attend a meeting in the Lord Mayor's parlour in the Town Hall, on such-and-such a date. Mr. F. R. Benson has accepted an invitation to deliver an address on "The Relation of the Drama to Civic Life."

That was a very straightforward and simple little circular; but behind it lurked a fearful thing: they intended gradually to spring the great mine of Municipal endowed theatres, and if the Lord Mayor and principal citizens agreed with them they would take a vote of the ratepayers of the City on the proposal. Referring to Mr. Sachs' mention of the late Mr. Phipps, he would like to pay a little tribute of respect to his memory. Mr. Phipps, under the unfortunate conditions which obtained with regard to theatre architecture in England, that is, being entirely under private speculation and private enterprise, had produced in Her Majesty's Theatre the best thing that could be done under the conditions, and in that theatre, under those circumstances, had left a monumental work.

MR. CECIL RALEIGH said that his own views as to the lecture were little more than what might be obtained from a magic lantern. He was a working author, and believed most of those present were working architects. He obtained his very humble living by getting a small percentage on the gross receipts drawn at the theatres where his plays were produced. What were his feelings when Mr. Sachs pointed to the Hofburg, Vienna, and told him the ideal playhouse of the world was a place where the audience only numbered 1,500, and the price of admission to the gallery was sixpence! He put it to the Meeting very mildly that he, as an author, knew less about this architectural question than they, as architects, knew about the housing of the Drama. It was purely a question of £ s. d. What did it matter what the theatre was like outside? Any one taking a walk through Trafalgar Square might by-and-by see a perfect dream of a building outside, and it might be said, "Is not that lovely?" but the rejoinder might well be, "Have you seen the play inside it?" A theatre was a building in which plays were to be produced to the best possible advantage, and if the outside consisted simply of four square brick walls it did not matter.

Mr. E. A. Gruning [*F.*] proposed, and Mr. Thomas Blashill [*F.*] seconded, a vote of thanks to Mr. Sachs, who briefly replied.



9, CONDUIT STREET, LONDON, W., 12th February 1898.

CHRONICLE.

The Seventh General Meeting.

The gratifying announcement at last Monday's meeting that the Architectural Union Company had voted the sum of £30 for the purchase of books for the Institute Library was greeted with warm applause by the company assembled, and the cordial thanks of the Institute for this generous donation have been entered on the Minutes of the Meeting, and have since been conveyed to the Company by letter. A further demonstration of approval was evoked by the reading of a resolution passed by the Glasgow Institute congratulating the President on his recent election to full Academy honours.

Among the visitors present at the meeting were many whose names are notably associated with the Drama and the Stage, and the well-filled benches testified to the general interest taken in the subject of Mr. Sachs' paper, despite the frank avowal of a dramatic author present, that to his mind, so long as the play was satisfactorily produced, it mattered not a cent that the outside of the building in which it was represented consisted merely of four bare brick walls.

The collection of designs, plans, and photographs brought together by Mr. Sachs had been drawn from every available source, and left scarcely an inch of wall-space uncovered. The display included numerous original drawings of prominent modern theatres, including working drawings by distinguished past or present Honorary Corresponding Members of the Institute, viz.:—M. Charles Garnier (Paris); Baron Hasenauer (Vienna); Herr Ferdinand Fellner (Vienna); Professor Victor Schröter (St. Petersburg); Professor G. Basile (Palermo); Professor Gottfried Semper (Dresden); and Herr von Ybl (Budapest). The collection from which these were taken comprises the materials used in the preparation of Mr. Sachs' work on *Modern Houses and Theatres*, some of the illustrations from which have been reproduced to a smaller scale in the foregoing pages, with the publisher Mr. Batsford's permis-

sion, together with some of the identical blocks used in the work.

The Royal Gold Medal 1898.

At the same Meeting the Chairman, Mr. H. L. Florence, *Vice-President*, in announcing the name of the candidate the Council proposed to submit to Her Majesty the Queen as a fit recipient of the Royal Gold Medal for the current year, observed that the usual course was to make the announcement to the Meeting as a simple statement of fact; but he felt, under the peculiar circumstances of this case, a mere bald announcement was scarcely sufficient. The Council proposed to recommend, as the recipient of the Royal Gold Medal this year, the name of the President, Professor Aitchison, R.A., not only on the ground that he was so well known to the architects of Great Britain, of the Continent, and of the Colonies, but also because he was the representative of that literary art and that liberal culture and knowledge in which, perhaps, the architects of the present day were not the equals of those of some years back. As a further proof of the Council's judicious choice, Professor Aitchison's name had been selected and chosen before the announcement of the latest honour conferred upon him by the Royal Academy. That must be a great gratification to members, and form an additional claim to his many qualifications. As a great deal more as to his qualifications would be heard at the time when the Award was made, it would be unnecessary to detain the Meeting by a long list of his works. Fortunately all were familiar with him, and with his works in architecture and in decoration. Many had been students at the Royal Academy, and would long to see all his lectures collected and printed, and issued in book form, that they might not be the mere passing lectures of an hour, but might remain through the future as a guide—historical, literary, and learned—for the benefit of students, which all were from the day they took up the study of architecture to the last day they practised it. He, therefore, on behalf of the Council, begged to inform the Meeting that they proposed to submit, for the approval of Her Majesty, the name of Professor Aitchison as the recipient of this year's Royal Gold Medal.

The Chairman's announcement was received with hearty applause by the Meeting.

Mr. Wm. Woodward [A.] said that he rose with considerable reluctance to make a few observations upon the announcement—a reluctance increased by the hearty approval with which the name of the President had been received—a hearty approval in which he, personally, thoroughly concurred. He wished it to be understood that his observations were in no way directed at the gentleman who now so worthily occupied the Presidential chair of the Institute. He yielded to

none in admiration of his conduct of the affairs of the Institute. His courtesy, genial good nature, and perfect fairness had endeared him to all, whilst the charm of his Addresses, clothed as they were in beautiful imagery, clearly elevated the dignity of the Presidential chair. But unless the award of the Medal was accompanied by the concurrence of the general body of the Institute, the Medal itself became a mere worthless bauble. The Charter of the Institute showed that the electorate should be the corporate body; but what was the position in which they were placed when their own President was the nominee for the Royal Gold Medal? It would be almost impossible for those who desired to nominate a substitute to do so with any degree of grace or with any degree of respect to their President. He therefore begged leave to say that the Council had practically usurped the privileges which were intended for the corporate body, and had created a precedent which, in the case of a gentleman less popular than Professor Aitchison, might lead to very unfortunate results. He therefore entered his protest against the proceedings of the Council, and asked that adequate steps should be taken to prevent the creation of a precedent which might be distinctly unfortunate.

The Chairman, in reply, said that, in the first place, this was not an unprecedented occasion. A former President had been proposed for the honour while he occupied the Chair, and had duly received the Gold Medal, as he trusted would happen in this case. In the second place, he would remark that it seemed to the Council that the year of the Jubilee, in which architecture was not specially recognised, was a most fitting occasion on which the head of the representative architectural body should be honoured. He felt convinced that the name which had been proposed was one which, on consideration, would be received with approbation, and that the Institute would feel that the Council under these circumstances had done well.

The Prize Drawings at Allied Centres.

The selection made from the Prize Drawings for the annual exhibition at the various Allied Centres comprises the drawings indicated below, to the number of nineteen strainers. These are accompanied by eleven sheets of Testimonies of Study submitted for the past year's Examinations, including those awarded the Arthur Cates Prize at the June and November Final Examination.

The Royal Institute Silver Medal (Measured Drawings).—Clare College Cambridge (2 strainers), by Mr. Thomas Tyrwhitt (under motto "Clare"), awarded the Medal and Ten Guineas.—Thaxted Parish Church (2 strainers), by Mr. Cyril Wontner Smith (under device of a Flower), awarded a Medal of Merit.

The Pugin Studentship.—Measured Drawings and Sketches (3 strainers), by Mr. Charles de Gruchy, awarded Medal and £40.—Drawings and Sketches (1 strainer), by Mr. Benjamin Bower, awarded Medal of Merit and Five Guineas.

The Tite Prize (Subject: Design for a Villa and Ornamental Garden).—(3 strainers), by Mr. John Stevens Lee (under motto "Andante"), awarded the Tite Prize.—3 strainers by Mr. Thomas A. Pole (under motto "Heather"), awarded a Medal of Merit and Ten Guineas.

The Grissell Medal (Subject: Design for a small Country Church).—1 strainer by Mr. Harbottle Reed (under motto "Stavekirke"), awarded the Medal and Ten Guineas.—2 strainers by Mr. W. Stanley Bates (under motto "By Lamplight"), awarded a Medal of Merit.

The Aldwinckle Studentship.—Measured Drawings and Sketches (2 strainers), by Mr. James B. Fulton, awarded Studentship and £50.

Final Examination: Testimonies of Study.—5 sheets by Mr. Percy Morris [*Cates Prizeman* June 1897], and 2 sheets by Mr. Laurence Hobson [*Cates Prizeman* November 1897].

Intermediate Examination: Testimonies of Study.—4 sheets by Mr. F. W. Newman, and 4 sheets by Mr. J. E. Franck.

The drawings are at present on view at Birmingham, under the charge of the Allied Society of the district, where they remain until the 19th inst. Thence they will go to Newcastle, and then to Nottingham, Sheffield, York, Leicester, and the other Societies, remaining about a week with each.

Lectures at Carpenters' Hall.

During February and March the annual course of lectures on matters connected with building will be given at Carpenters' Hall. On the 21st February, Professor Silvanus Thompson, F.R.S., will lecture on "Electric Motive Power"; on 28th February, Professor T. Roger Smith [*F.*], on "Some Notable Buildings in France"; on 7th March, Mr. Lewis F. Day, on "Wood-carving: Its Design and Practice"; on 14th March, Professor Banister Fletcher [*F.*], on "Architecture *versus* Building"; on 21st March, Dr. Longstaff on "Municipal Control of Buildings." The lectures commence at 8 p.m. A certain number of cards of admission have been placed by the Court of the Worshipful Company of Carpenters at the disposal of the Secretary of the Royal Institute.

Art Metal Exhibition.

An Exhibition of work in iron and other metals will be held during the month of June at the Royal Aquarium. In connection with it competitions in design and handicraft are announced, and gold, silver, and bronze medals are to be awarded. A large number of influential members of the Institute are on the Council of the Exhibi-

tion, which promises to be one of great interest. Mr. Edgar S. Shrubsole, Royal Aquarium, Westminster, will furnish all requisite information as to the competition.

"Modern Architecture."

In reference to the review under the above heading in the last issue, Mr. Statham writes:—

Mr. Caws is perfectly right in saying that the above title is too large for the extent and scope of my book. I wished it to be called "Lectures on Modern Architecture," which would have ex-

pressed exactly what it is; but I have found that publishers have a great dislike to the words "Lectures" or "Essays" in the title of a book, regarding them (rightly or wrongly) as expressions unattractive to the purchasing public. After trying for some days to formulate a title which should precisely express the scope of the book while avoiding the obnoxious word "Lectures," I could think of nothing which was not too lengthy and involved, and therefore had to fall back on the simple title adopted, as the only one available.

The New Presidential Badge of the Northern Architectural Association, recently presented by Mr. William Glover, Vice-President of the Association.



REVIEWS. LXVI.

(181)

CHIPPENDALE FURNITURE.

The Chippendale Period in English Furniture. By K. Warren Clouston. With illustrations by the author. 4o. Lond. and New York, 1897. Price 21s. [Messrs. Debenham & Freebody, Wigmore Street, W.; Edward Arnold, 37, Bedford Street, Strand, W.C., and 70, Fifth Avenue, New York, U.S.A.]

This is a very welcome addition to the somewhat scanty literature of this time; for though much has been written in a fragmentary way about the styles of various makers, yet Mr. Clouston is perhaps the first to collect the scattered threads and to deal sympathetically and consecutively with this most interesting epoch. The book is written with the knowledge

of an expert and the enthusiasm of a collector, and to all who are interested in the very fascinating study of eighteenth-century furniture it will be of the greatest value and assistance.

Mr. Clouston places Chippendale in the forefront of furniture makers and designers, and though his work at the time was little thought of and hardly recognised, yet now it holds almost a unique position. Dealing with it seriatim, from his book *The Gentlemen's and Cabinet Makers' Director*, published in 1754, illustrations are given of nearly every article described in detail; and in reading it we cannot help admiring the wonderful power Chippendale possessed in combining the seeming incongruities of the French, Gothic, and Chinese styles which he so greatly favoured, in making out of them harmonious and pleasing pieces of furniture, and imparting to them a sym-

metry and dignity entirely their own. We see how he obtained his effect from outline and carving only; for though inlay and painting had long been in use, he discarded them altogether and worked in the solid mahogany.

One almost gathers that he originated a style peculiar to himself, and perhaps hardly enough stress is laid upon the fact that he merely carried on existing traditions and clothed them in fresh detail of his own, or borrowed from other countries. In his chairs, for which he will always be noted, the so-called cabriole leg, and the broad seat and back, which were always his strongest features, had been in use in England for more than half a century; and for years chairs, almost identical in outline with his, had been made by unknown men all over the country, though their detail was derived from a different source. His Chinese chairs, based upon the fashion introduced by Sir William Chambers, with square underframing and rails, are similar in construction to those of the earlier Jacobean period, and much existing work that now passes for Chippendale, and bears the impress of his time and the stamp of his detail, shows how loth the makers were to lose hold upon the traditions of the past.

Mr. Clouston calls Chippendale the master craftsman of the century, and the pioneer in furniture-making of his time; but it is difficult to get over the fact that many of the pieces designed in his book were never executed, and that it is almost impossible to identify any of the other designs with existing furniture. That he was a most able craftsman, a superb carver, and a clever and ingenious draughtsman every one will admit; but it is open to question whether it is right to attribute to him the originating of a style that now bears his name.

At this time the country was full of excellent cabinet-makers, and the taste for everything of the new or French fashion was in the air, and by publishing a book upon work with which doubtless many of his contemporaries were fully conversant, Chippendale has gained a reputation and notoriety which perhaps is hardly deserved; for though he crystallised the floating ideas of the day and published them as designs, yet he certainly cannot lay claim to their entire originality.

The chapter on Chippendale's contemporaries, with the copious explanations and illustrations taken from the various "Companions," "Directors," and "Guides" published by them, is extremely interesting, and shows how much they were influenced by Chippendale's work; but, with the exception of a few men, Mr. Clouston does not allow them much merit, though it is more than probable that the bulk of the beautiful examples remaining at the present day were executed by them.

One of the special branches of Chippendale's family was the carving of mirror frames and girandoles, then in very great repute. They were gene-

rally made in pine, and heavily gilt and burnished in parts, and, though his father before him had made a name in this connection, they were perhaps the earliest kind of work to which he devoted his attention. His were almost entirely French in character, and, though wonderful as masterpieces of execution, and sometimes very beautiful, cannot claim much originality.

His contemporaries and successors, Darley, Lock, the Adam Brothers, and Heppelwhite, have given us mirror frames, which Mr. Clouston illustrates, far exceeding these in simplicity of design and refinement of decoration, and certain to maintain their reputation in any age.

Full justice is done to the wonderful ability of the Brothers Adam, and to Robert especially, who was perhaps as great a designer of furniture as any one in the century. The strict formality in his designs can be traced to his classical training, and researches with his brother in Spalatro; for, though a strong classic influence ran through the century, to the Brothers Adam must be attributed the credit of having introduced the elegant refinement that marks the furniture of their time.

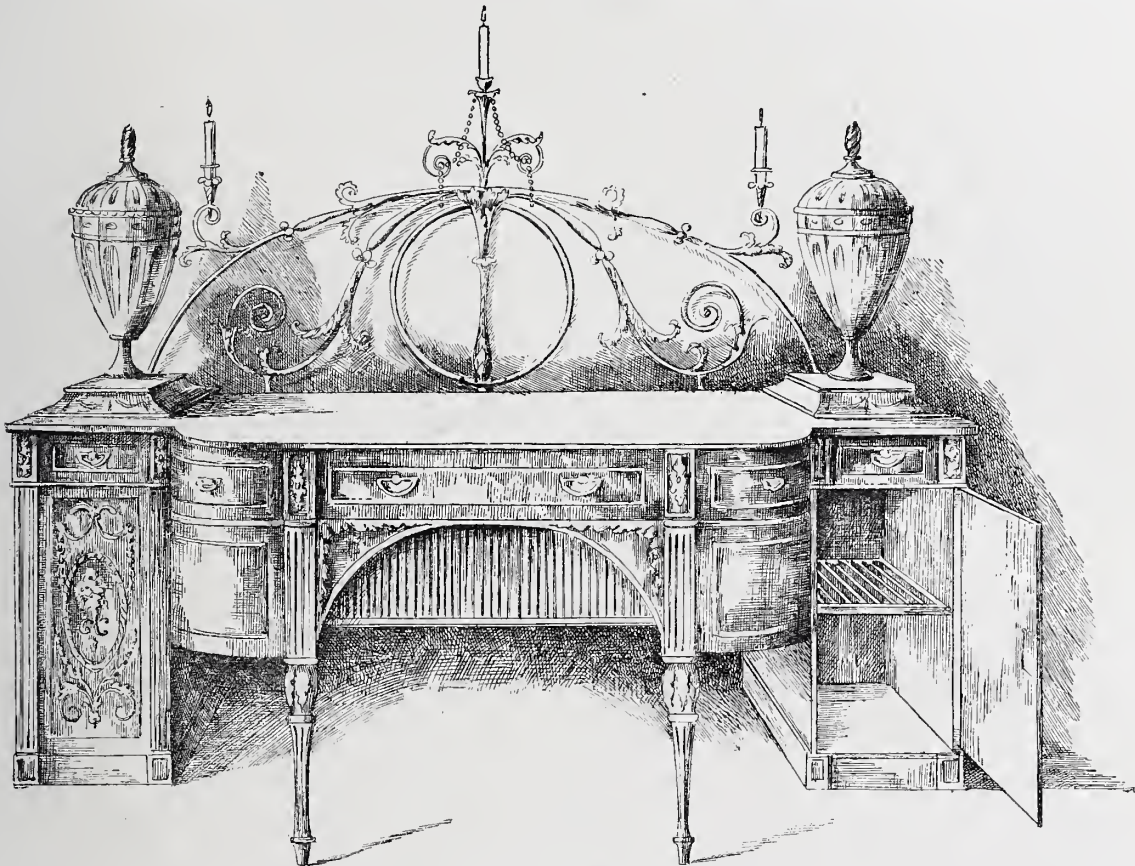
As Mr. Clouston says, their name was so far-reaching that hardly a house of any pretension was built or decorated without their co-operation. They not only designed the furniture, but the metalwork, silver plate, cups, vases, and candlesticks, and even the knives and forks—articles which bear evidence of their scholarly refinement of design and execution. They worked a great deal in connection with Pergalesi, Cipriani, and Angelica Kaufmann, the first-named of whom rendered Robert Adam great assistance both in making many of the beautiful designs in his books and in carrying them into execution. Many architects published works of their designs for decorative fittings and furniture; amongst them N. Wallace in 1771, W. Thomas in 1783, and George Richardson, the one who most nearly approached Adam; all of whom rendered the greatest assistance in educating and forming the public taste of the time.

A most interesting chapter is devoted to Thomas Shearer and the work of the Society of London Cabinet Makers, who published a book of prices in 1788, giving the working cost of the various articles of furniture then in vogue. Many illustrations and particulars are given of the furniture they made, and amongst others of the wine tables and carriages, which then formed no unimportant adjunct to a gentleman's establishment. Their form was invariably semi-circular or horseshoe; around the outer side the guests were seated, and the wine carriages, balanced by a weight, travelled round the inner edge; the mahogany bottle cases were provided with high metal or wooden shields, to keep the heat of the fire from the wine, for the ends of these tables folded up to allow of their being

pushed close against the sides of the mantel-piece, and a running curtain was hung on a rail across the back, should the heat of the fire become too great.

Shearer was amongst the first to recognise the value of satinwood, which he used either solid or veneered, and also that of many other rare woods for inlay and marquetry, though never to the extent that Sheraton did, and only in a more

Heppelwhite may perhaps be entitled to be called the originator of a style, as there is a distinctiveness and character about his work, and a pre-eminently English feeling that makes it stand out from that of the many cabinet-makers who were his contemporaries. His work is altogether lighter and less cumbrous than that of Chippendale, and though perhaps lacking the power of invention and dignity of appearance so



SIDEBOARD WITH VASE KNIFE-CASES. (Sheraton.)

or less tentative and experimental way. He revelled in the most delicate and intricate mechanism in his furniture, and economised his space in the most extraordinary manner, the outsides of some of his pieces giving no clue whatever to the multiplicity of their contents. Shearer, perhaps, was the one man who was not carried away by the prevailing taste for the French style, and, as Mr. Clouston says, "he kept to his aim of providing good solid furniture for everyday people, which though never rising to the highest beauty of which the style is capable, is yet singularly devoid of the least attempt at show or ostentation." His furniture is practical, sensible, and ingenious, and always worthy of admiration.

associated with the work of the latter, yet, without doubt, his is the one style that had more to do with influencing the taste of the day than any other. He published, like his predecessors, a *Cabinet Maker's Guide*, which, being a sort of trade catalogue and more or less like theirs, was distributed all over the country, and much beautiful furniture was made from his designs; hence it is that one finds so frequently instances of tables, cabinets, and chairs owing their outline and conception to one common source, but varying greatly in execution and detail. His name will always be associated with the shield- and heart-shaped back chairs with the straight tapering legs, for though he still occasionally adhered to the traditional cabriole leg, yet his

preference lay for simpler and more direct forms.

He also greatly favoured the employment of painted and japanned work to harmonise with the coloured decoration of rooms, and his chairs especially were sometimes done in this way, giving, as he himself says, "a rich and splendid appearance to the minuter ornaments which are generally thrown in by the painter." Perhaps when new they might have had this effect, but the examples one sees occasionally in old country houses retain but little of their original grandeur, though certainly pleasing in their faded old-world colouring.

The delicately carved husks, or wheat-ears, flowers, and ribands are highly characteristic of his style, and are found in some form or other in nearly all his pieces of furniture. Sofas, tables, sideboards, indeed every conceivable article received his attention, all well designed and artistically executed; and his dressing-tables, corner washstands, wardrobes or "tall boys" are well known, as well as the characteristic little heart- or oval-shaped toilet glasses on the serpentine-fronted stands.

Heppelwhite's furniture is marked by a freedom of line and greater use of curved surfaces, and differs somewhat from the rigid severity of the Adam school, and in its use of inlaid and painted decoration forms a transitional period to that of Sheraton, who followed him.

Sheraton's work is treated in the concluding chapter, and Mr. Clouston has much that is interesting to tell of this master of his craft, for with him furniture perhaps reached its acme of beauty and finish, and sank to nearly its lowest ebb; and it is matter for much reflection that a man who could design and make such masterpieces as Sheraton should at the close of his career deteriorate to positive ugliness and pander to the debased taste of the day. He worked a great deal in mahogany and satinwood, carved and inlaid, and as the fashion gradually changed he resorted to gilded and painted furniture; "cameo panels in grisaille, or the most gorgeously coloured wreaths, flowers, cornucopia, and musical instruments were painted on the chairs and tables, in fact whatever would add to their beauty or enrichment." For all this, in his earlier work simplicity of outline was one of his greatest characteristics, and however elaborate the decoration it always formed and looked a part of the furniture, and did not give the impression of being applied merely for the sake of ornament.

Though the decadent spirit of the age was apparent in Sheraton's later work, it is with the name of Gillow that we associate the close of the fast-dying traditions of the eighteenth century, until it absolutely ceased to exist as an art. As Mr. Clouston tersely points out:

One reason for this lay in the fact that all guidance as regards the interior fittings or furniture of a house was taken out of the architects' hands. The fine wood panelling and architectural mouldings had died, and even mantel-pieces, the joy of old architects, were made wholesale by men who had not the faintest suspicion of artistic taste. Wall-papers, furniture, and all inside decoration were left entirely to the unaided judgment of the householder.

Throughout the entire book great stress is laid upon the influence of architecture on interior decoration, and we see how, during the progress of the century, the architect became the chief director in all matters of style, proportion, and arrangement, until eventually a great deal of the actual furniture was designed by him; indeed, it is not too much to say that the classic spirit so predominant throughout the furniture of the eighteenth century is mainly attributable to the influence of architects.

In those days almost every architect of note or position in his profession not only published a book of designs for various fittings and decorations, but was thoroughly conversant with the planning and arrangement of furniture, and was consulted as a matter of course by his clients, who did not venture to decide such important matters without his aid—a great contrast to the feeling with which architects are regarded at the present day!

The illustrations are perhaps the weakest part of the book, and hardly do justice to the dignity of the subject. Though cleverly drawn in pen-and-ink, many are out of perspective, and do not convey the character of the different articles of furniture which they portray. The full-page illustrations showing rooms treated in the different styles are positively painful, and remind one of nothing so much as the advertisements of furniture dealers in the weekly papers. It would have added much to the interest of the volume if photographs had been given of existing examples, such as were found in the valuable loan collection last year at Bethnal Green Museum, or from well-known private collections. Instead of this, most of the illustrations appear to be made-up perspectives from the geometric drawings published in the old eighteenth-century furniture books previously referred to.

E. GUY DAWBER.

(182)

HOUSE SANITATION.

The Dwelling House. By George Vivian Poore, M.D., F.R.C.P. With 36 illustrations. 8s. Lond. 1897. Price 3s. 6d. [Messrs. Longmans, Green, & Co., Paternoster Row.]

After a few preliminary excursions into questions of planning, ventilation, heating, which will be read with interest by the architect, and from which he will very probably gather some useful suggestions, the author passes in the second chapter to the more important part of his work. This chapter, entitled "The Sanitation of the Isolated Dwelling," contains the results of Dr.

Poore's researches on the question of dry methods of sanitation. These are of a thoroughness refreshing amid the too frequent pseudo-scientific attempts that bear on their face evidences of slipshod and incompetent work.

There have been numerous treatises on the advantages of dry methods over our present system of water removal, but none that go to the root of the matter with the biological accuracy possessed by that of Dr. Poore.

The natural processes governing the suggested arrangements are so fully and thoroughly explained as to secure one's confidence in the practicability of the latter, at least from the sanitary point of view; as to their likelihood of securing popular support, we may be permitted to share Dr. Poore's doubts.

A few quotations will give a brief synopsis of this second chapter:

The change which is produced in excrement when mixed with earth, whereby the excrement is humified, i.e. changed to something which is indistinguishable by our senses from ordinary garden mould, or humus, is due to the action of fungoid organisms. . . .

In order that humification may take place, two things are necessary:—

1. The matter must be tolerably dry—absolute dryness checks the process, so does excess of moisture. It is stated that about 33 per cent. of moisture is the amount with which the humifying change is most rapid.

2. The access of air is necessary, because the organisms which produce humification are aerobic, and, as much of the change consists of oxidation, it is evident that the free access of air is essential.

Where pail closets are used

the contents of the pails are removed every morning, and are *superficially* buried in a furrow such as a gardener makes when turning up the ground with a spade. One must insist that the covering of the excreta cannot be too light, as it is essential for the due humification of the organic refuse that the air have access to the pores of the soil.

But the author considers that

the best method of treating excreta is to allow them to be deposited in the "dry catch," suggested by Mr. Richardson, of Clifton. In this arrangement the seat is raised on two or three steps, and the excreta are caught on a slightly sloping concrete floor; the excreta are freely exposed to the air, and the urine flows away down the slight slope and is caught by an absorbent material, of which the best is garden humus.

With this arrangement no putrefaction takes place. It is not a matter of much practical moment whether or not earth be thrown into the dry catch after the excreta, because the arrangement ensures that offensiveness is reduced to a minimum.

If earth be used, this humification will go on in the catch itself, and the longer such a catch is used the better it will act, always provided that moderate dryness and free access of air are ensured. . . .

If there be cultivable land at hand, and the nearer such land is to the houses the better, I believe the best course to pursue is to bury the excreta daily in superficial furrows.

If there be no cultivable land at hand, then the excreta would have to be taken to a rough shed (sufficient to keep off the rain) and mixed with earth. The process of humifica-

tion would be completed in three months, and the humus thus formed might be used over and over again *ad infinitum*. The great advantage which follows from the scientific use of "dry methods" is the continuity of the process. Nature turns all the excrement to humus, and humus is acknowledged to be the very best purifier of offensive nitrogenous matter which the world affords. The dark humus which is found everywhere, and which provides for all our needs, is nothing but excrement which has suffered a natural transformation brought about by a process which is purely biological. The oftener such humus is used the better it acts, and, further, it slowly increases in bulk. There can be no doubt as to its horticultural value, and if the authority cannot use it, the neighbouring farmers and gardeners will gladly do so. One of the difficulties connected with the dry-earth system is the procuring of earth, but from what I have said it is evident that an initial store of earth sufficient for six months' use, if judiciously, carefully, and scientifically used, would for ever take away the necessity of providing a fresh store.

The best arrangements for indoor earth closets and the dry treatment of urine, by absorption in peat or sawdust, and resultant purification, are also dealt with, followed by some valuable notes on the housing of animals. Dr. Poore supports his views on the sanitary value of surface humification of excrement by evidences of the purity of a surface well in the garden used for this purpose.

The third chapter deals with the disposal of slopwater, and shows that it is quite as easily treated and as valuable as the excrement. The system of filtration gutters adopted would be difficult to make clear without the diagrams provided. The advantages of the naturally intermittent supply are thoroughly explained.

Chapter IV., while containing some interesting statistics, is of less value to the architect, who will doubtless speedily detect fallacies in several of the assumptions and deductions; but in Chapter V. Dr. Poore gets back to his own ground, and goes into the circulation of organic matter with the same knowledge and skill exhibited in the earlier portions of the book, throughout the whole of which it will be found that the problems dealt with are handled with a good grasp and in a refreshing and original manner.

H. V. LANCHESTER.

(183)

BEVERLEY BAR.

The Building of Beverley Bar, by Arthur F. Leach, M.A., F.S.A. The North Bar, Beverley, by John Bilson, F.S.A. Reprinted from the Transactions of the East Riding Antiquarian Society, Vol. IV., 1896.

In the first of these two papers we have what the author describes as "probably a unique specimen of the complete accounts of the erection of a mediæval building still standing." The building in question is the old gate of Beverley, situated not far from St. Mary's Church, and it is described architecturally in the second paper, that contains also a commentary on the information presented in the accounts. The Bar was erected in the year 1409-10 by the Corpora-

tion, which itself superintended the work "without the intervention of any middle-man or contractor," and procured and paid for the materials and the labour as the task required.

From the detailed accounts thus preserved we derive information as to the cost of carriage and labour, and the price of various materials in this part of England at the beginning of the fifteenth century. The actual cost in money of the time seems to have been about £95, and Mr. Bilson has estimated that it would have cost in the present day some £800 or £900. As money at that time may be reckoned at a good deal more than ten times its present value, the comparison would seem to imply that the cost of building is relatively less now than it was in the fifteenth century.

The chief point of interest about the structure in question is, that the material is brick, and the writers emphasize this fact as a new piece of evidence that brick buildings existed in this country earlier than is commonly supposed. Mr. Bilson's paper ends with some valuable sentences on this subject, and he points out that the word *tegula*, which in old lists of prices, such as those published by Professor Thorold Rogers, has been translated "tiles," in reality means almost as often "bricks." There is plenty of evidence that *tegulae* were made and used in England at an early period, and such *tegulae* would be used for walling as well as roofing. It is to be noted that "wall-tiles," equivalent to our "bricks," appear in the price lists as costing only about half as much as "thack-tiles" for roofing, and this difference in price may enable the two kinds of *tegulae* to be distinguished in mediæval records.

Brick-making, at any rate, seems to have been a recognized industry at Beverley at this epoch, for the Corporation make their purchases "from as many as twenty different persons." Some of the bricks used for the jambs of openings are chamfered, and these appear in the accounts published by Mr. Leach as "squynchon"—a word still known in the architectural terminology of Scotland. Only two purveyors furnish these moulded bricks, the preparation of which implied, no doubt, a certain advance in the brickmaker's art.

These two papers are examples of the thorough scientific work that is being carried on under the auspices of local antiquarian societies in so many parts of the country. The material that is being in this way accumulated about mediæval archæology is both extensive and of the highest value to students of the period. The combination of the study of records with the practical investigation of existing monuments represents the only sound method by which our knowledge can be advanced, and this combination is happily illustrated in the papers here noticed.

Edinburgh.

G. BALDWIN BROWN.

MINUTES. VII.

At the Seventh General Meeting (Ordinary) of the Session, held Monday, 7th February 1898, at 8 p.m., Mr. H. L. Florence, *Vice-President*, in the Chair, the Minutes of the Meeting held 24th January 1898 [p. 180 *ante*] were taken as read and signed as correct.

The following members attending for the first time since their election were formally admitted and signed the respective registers—viz.: Charles Busted Fowler [*F.*], President of the Cardiff, South Wales, and Monmouthshire Society (Cardiff); and Nicholas Fitzsimons [*A.*] (Belfast).

A letter having been read from the Secretary of the Architectural Union Company announcing that the Company had voted a donation of £30 to the Institute Library Fund, for the purchase of books, a vote of thanks to the Company was carried by acclamation.

A letter was read from the Secretary of the Glasgow Institute of Architects announcing that the Glasgow Institute had passed a resolution congratulating the President of the Royal Institute of British Architects on his recent election as a Royal Academician.

The following candidates for membership, found to be eligible and qualified according to the Charter and By-laws, and admitted by the Council to candidature, were recommended for election, viz.:—As FELLOWS, George Lethbridge [*A.*] and Edward Thomas Boardman (Norwich); As ASSOCIATES, Laurence Hobson [*Probationer* 1893, *Student* 1896, *Qualified* 1897, *Arthur Cates Prizeman Nov.* 1897] (Liverpool), William Charles Hulbert [*Qualified* 1897], John Ormrod [*Probationer* 1891, *Student* 1895, *Qualified* 1897] (Bolton), Dullely Christopher Maynard [*Probationer* 1893, *Student* 1895, *Qualified* 1897], Timothy Honnor [*Probationer* 1889, *Student* 1891, *Qualified* 1897], Harry John Pearson, F.S.I. [*Probationer* 1895, *Student* 1897, *Qualified* 1897], Ralph Henry Morton [*Probationer* 1890, *Student* 1894, *Qualified* 1897], Herbert Shepherd [*Probationer* 1892, *Student* 1894, *Qualified* 1897], William McCulloch [*Qualified* 1897] (St. Andrews, Fife), John Frederick Duthoit [*Probationer* 1892, *Student* 1895, *Qualified* 1897] (Dover), Henry Albert Collins [*Qualified* 1886].

In the matter of the award of the Royal Gold Medal for the current year, the Chairman having announced that the Council proposed to submit to Her Majesty the Queen the name of the President, Professor Aitchison, R.A., as a fit recipient thereof, and Mr. William Woodward [*A.*] having protested against the Council's nominating for the distinction the actual occupant of the Presidential Chair, and urged that steps be taken to prevent such action being made a precedent, the Chairman explained that precedent already existed for the Council's action, and that the Jubilee year was a fitting occasion to honour the head of the representative architectural body.

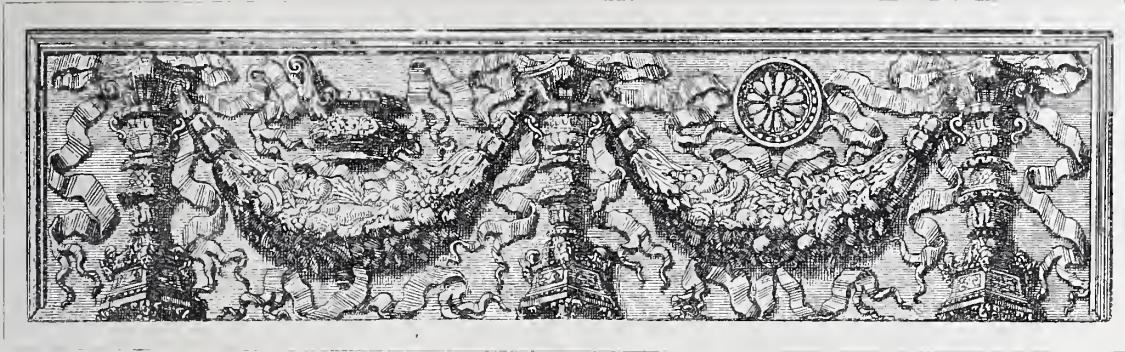
A Paper, by Mr. Edwin O. Sachs, entitled *THE HOUSING OF THE DRAMA*, having been read by the author, and discussed, a vote of thanks was passed to him by acclamation.

The proceedings then closed, and the Meeting separated at 10 p.m.

Books received for Review.

The Cathedral Church of Exeter: a Description of its Fabric and a Brief History of the Episcopal See. By Percy Addleshaw, B.A. So. Lond. 1898. Price 1s. 6d. [Messrs. George Bell & Sons, York Street, Covent Garden.]

Examples of Greek and Pompeian Decorative Work. Measured and drawn by James Cromar Watt. Fo. Lond. 1897. Mr. B. T. Batsford, 94, High Holborn.



THE MEDIÆVAL CAMPANILI OF ROME.

By J. TAVENOR PERRY [F.].

Read before the Royal Institute of British Architects on Monday, 21st February 1898.

IN bringing before the Institute a Paper on such a well-known subject as the Mediæval Campanili of Rome, some apology may appear to be necessary, for there are scarcely any buildings of the city with which we are so familiar, and there is no architect or painter who has failed to appreciate their beauty and picturesqueness, and no archæologist who has not speculated on their origin and history. And yet, unfortunately, although so many of these towers have found their way into the sketch-books or note-books of travellers, no one has, in any serious way, propounded any theory to account for their origin, or published, if he has discovered it, any historical evidence which would enable us to fix their dates and name their builders. It is for such reasons as these that I have attempted in this Paper to put together such information as I have found scattered among published notices of these buildings, together with my own notes and sketches made during several visits to Rome, which may form the nucleus of a history, to be amended or enlarged by the knowledge or experience of those who are better acquainted with the subject, but, as yet, have not contributed their views to the public on this most interesting branch of architectural archæology.

Beyond having the inviting question of their history to determine, it is important that some detailed and definite account of these buildings should at once be put on record. Earthquakes, sieges, and civil troubles have done their share of damage all through mediæval times; but it is to the neglect and destruction of more recent years that the melancholy condition of these monuments is largely due, and from such circumstances we have to fear for them a yet worse fate; so that a future generation may have nothing but our printed records to tell them what they have lost. The beautiful tower of the Annunziata, standing in the ruins of Mars Ultor, and that of SS. Cosma e Damiano in the Forum* were, it is true, destroyed many years ago; but it is to the period which has followed the change of government in Rome, and to many circumstances attending it, that the greatest damage is to be attributed. Many of the campanili belonged to conventual establishments, which have been either suppressed or disendowed, and no funds are now available for the simplest necessary repairs. One of the finest of them, S. Silvestro in Capite, is occupied by the telegraph service, and others in the Trastevere, such as S. Giacomo Lungara, seem doomed to destruction to make space for the roads along the new embankments of the Tiber. For

* The tower of SS. Cosma e Damiano is shown on page 215 of Lanciani's *Ruins and Excavations of Ancient Rome*. This was destroyed in 1612.

these among other reasons I think I need not apologise for bringing forward a subject which, at first sight, might appear to be so familiar.

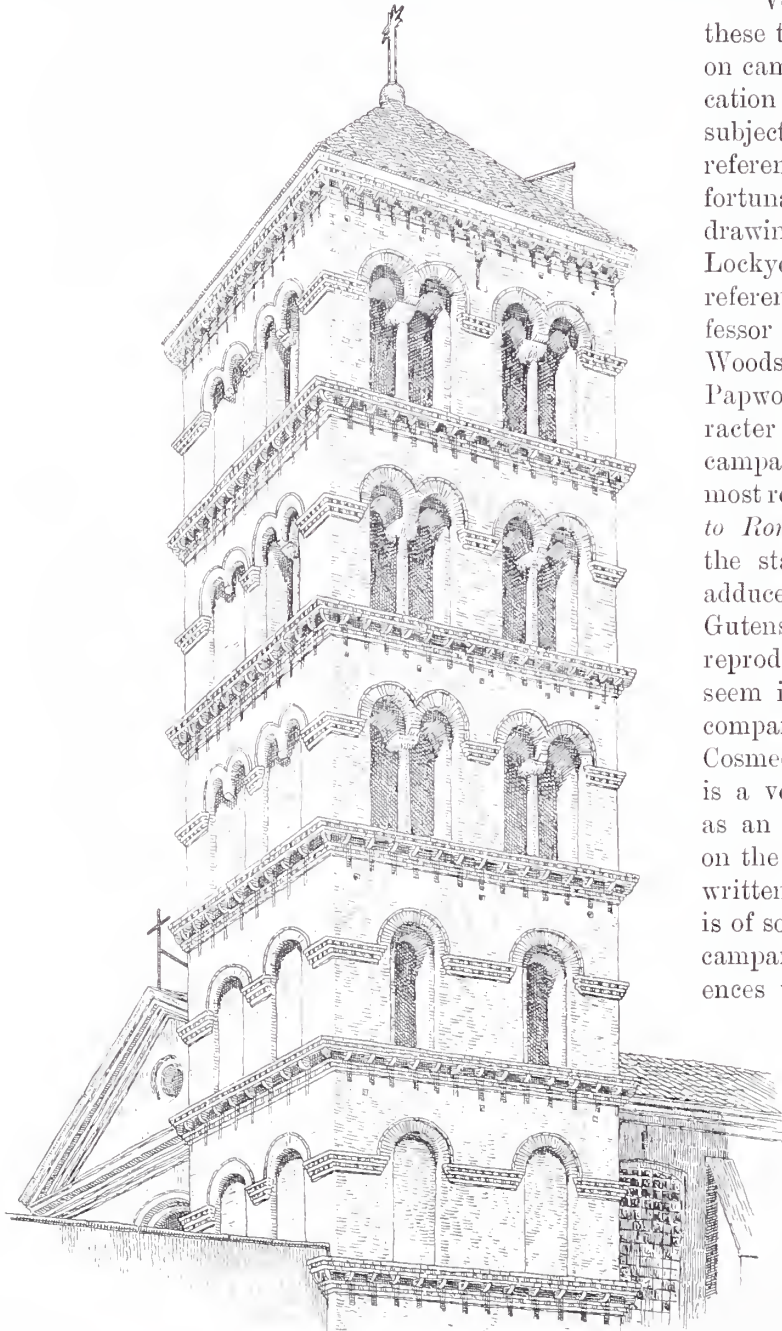


FIG. 1.—S. ALESSIO.

Very little has been published on these towers in particular. The articles on campanili in the Architectural Publication Society's Dictionary deal with the subject as a whole, with only slight references to those of Rome; but they fortunately contain a carefully measured drawing, by the late James Morant Lockyer, of S. Maria in Cosmedin. The references made to the subject by Professor Willis,* in his *Remarks*; by Mr. Woods,† in his *Letters*; and by John W. Papworth,‡ are of a very general character; and in the chapter devoted to campanili in the introduction to the most recent edition of Murray's *Handbook to Rome*, no authorities are given for the statements made or for the dates adduced. The drawings published by Gutensohn and Knapp, one of which is reproduced in Fergusson's *Handbook*,§ seem inaccurate, as can be tested by comparing their drawing of S. Maria in Cosmedin with that by Lockyer. There is a very interesting account, published as an appendix, in Cancellieri's work || on the bells of the tower of the Capitol, written by Friar Jacques Ponyard. It is of some value, as he gives lists of the campanili existing in his time and references to authorities not now available;

but as he wrote some time before 1806, a period unfavourable to architectural criticism, many of his deductions are open to doubt. These are the principal writers to whom we have to turn for any information on our subject; but as they differ so widely in their opinions, and rarely give any

authority for their statements, I propose, for the present, to ignore them altogether, and deal

* *Remarks, &c.*, by R. Willis.

† *Letters of an Architect*, by J. Woods.

‡ *On the Transitions in Various Styles of Art, from the Original Type of Campanili, in Italy, to the usual Bell-towers of the Present Time*, by John W. Papworth.

§ *History of Architecture*. Fergusson & Spiers. 3rd edition, p. 578, fig. 459.

|| *Le due nuove campane di Campidoglio*, by Francesco Cancellieri. Roma, 1806.

with the problem in a different manner. We have statements and legends innumerable to the effect that such-and-such a church was built or restored by such-and-such a Pope; but in no case, except S. Peter's itself, is any mention made apart of the campanile. I shall therefore endeavour, from an independent study of the buildings themselves, their details and their ornamentation, by a comparison of them with dated examples in neighbouring places, and by the aid of the mediæval history of the city as related by the most recent of its historians, Gregorovius,* to show that we are almost forced to the conclusion that these edifices were built during the limited period which elapsed between the erection of the campanile of S. Peter's by Pope Leo the Third, and the devastations wrought by Robert Guiscard and his Normans after their capture of the city; that is to say, between the beginning of the ninth and the end of the eleventh century.

In describing the normal type of the mediæval Roman campanile, I cannot do better than quote the exact words of Professor Willis †:—

The brick towers of Rome are square, the basement storey is carried up without apertures to a height about equal to that of the roof of the building to which it belongs; above this the tower is divided by brick cornices into storeys, the number of which varies in different examples. At S. Maria in Cosmedin there are seven, exclusive of the basement; the two lower ones have on each face two round-headed windows, and the third three; the remaining four storeys have on each face a window of three lights.

Of the towers which answer to this description there are some thirty-six still remaining, and they are, S. Alessio, S. Bartolomeo all' Isola, S. Benedetto in Piscinula, S. Cecilia, S. Cosimato, S. Crisogono, S. Croce in Gerusalemme, S. Eusebio, S. Eustachio in Platana, S. Francesca Romana (S. Maria Nuova), S. Giacomo alla Lungara, S. Giorgio in Velabro, S. Giovanni in Laterano, S. Giovanni a Porta Latina, SS. Giovanni e Paolo, S. Lorenzo fuori le Mura, S. Lorenzo in Lucina, S. Lorenzo in Panisperna, S. Lucia ad Arcum Obscurum, Madonna del Divino Amore, S. Marco, S. Maria in Capella, S. Maria in Campomarzio, S. Maria in Cosmedin, S. Maria in Monticelli, S. Maria in Trastevere, S. Michele in Borgo, S. Prassede, S. Pudenziana, SS. Quattro Coronati, SS. Quirico e Giulitta, SS. Rufina e Seconda in Trastevere, S. Salvatore delle Coppelle, S. Salvatore della Corte, S. Silvestro in Capite, and S. Sisto Vecchio. Besides these there are others which bear a general resemblance to the normal type, such as S. Maria Maggiore,

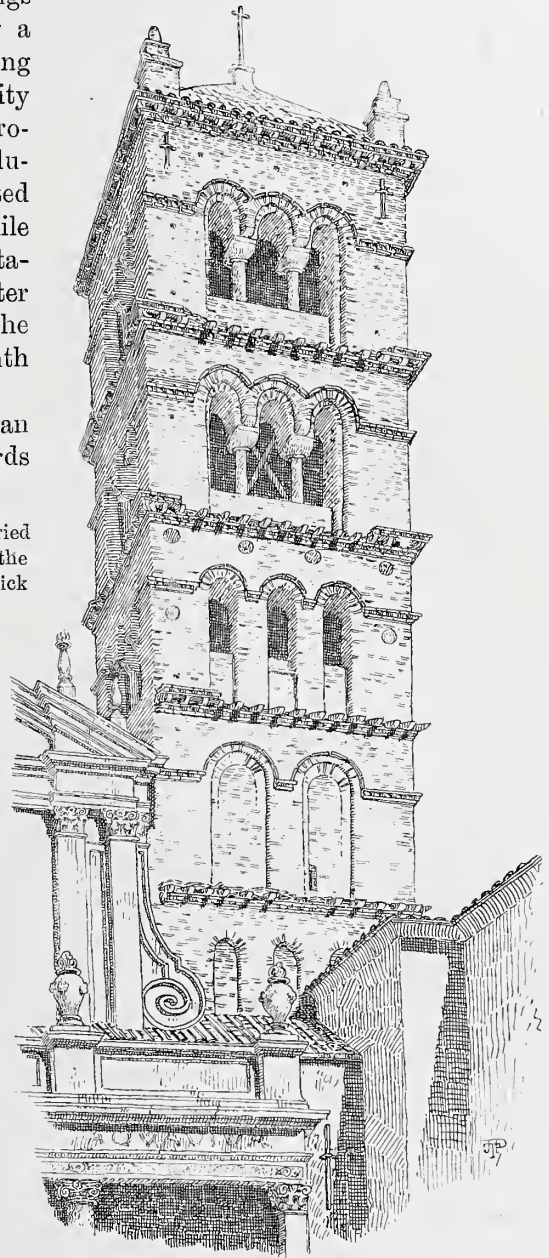


FIG. 2.—S. CECILIA.

* *History of the City of Rome in the Middle Ages*, by Ferdinand Gregorovius, translated from the 4th German edition by Annie Hamilton.

† *Remarks, &c.*, p. 145.

which has pointed arches, and S. Spirito in Sassia, which is Renaissance. There are also some other mediæval towers of quite a different character, such as S. Maria del Popolo and S. Maria dell' Anima. In describing all these campanili as of the normal type, it must be understood that, although the limits of design within which these towers are built seem very narrow, there is so much variety that no two, even apart from proportion and decoration, are exactly alike. In the number of the storeys, the grouping of the window-openings, and in

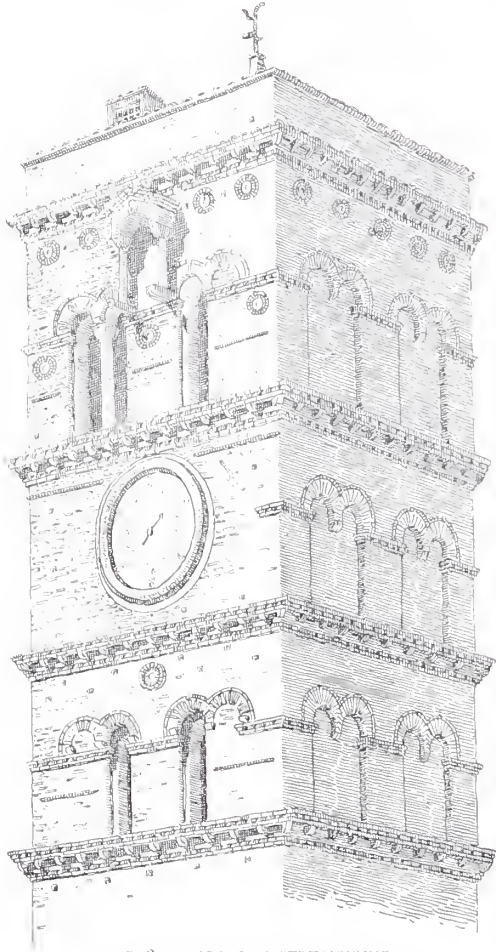


FIG. 3.—S. CROCE IN GERUSALEMME.

their arrangement and proportion, the diversity is as great as the number of the towers; whilst the variations in the applied decorations, the cornices and niches, the marbles and the majolica, are almost as great. I have prepared and put in tabular form a list of all the existing campanili, giving all their principal features, such as the number of the stages, the arrangement of the openings, the niches, decoration, &c., which shows at a glance the great differences existing among them in these respects; while they are at the same time so singularly alike that one cannot doubt but that they all belong to the same period and to the same school.

The building of towers in Rome was a tradition of imperial times, and no invention of the mediæval period, either for defensive purposes or for ecclesiastical use. Pliny informs us that he had two towers at his villa at Laurentum.* Augustus built one by his palace, to the upper part of which he used to retire to enjoy the view over Rome and the Campagna, or avoid the attentions of his friends—this tower he called “Syracuse.” In Professor Lanciani’s work on *Pagan and Christian Rome*, there is a plate† giving the reproduction of a ceiling carved in stucco, from a house discovered in the Farnesina gardens, on which is shown in low relief a tower of three stages, the lowest one, the loftiest in proportion to its breadth, pierced for a doorway, and the two upper ones of less altitude, the intermediate pierced for two windows and the top one for five. The stages

are separated by horizontal cornices, and the whole is crowned by a low-pitched roof and a bulbous finial, as in the mediæval campanili. The period to which the Professor assigns this ceiling is the age of Augustus, and it may be taken as representative of the class of towers common in Rome at this period, and suggest, perhaps, what his own tower of Syracuse was like. Some paintings in a tomb found in the grounds of the Villa Pamfili Doria, published in our *TRANSACTIONS*,‡ show two towers of a similar character, each in two stages, the lower one solid and the upper one with openings. Round the palace of Diocletian at Spalato, there were numerous towers, which Adams considers were intended for ornament rather than for defence.

But besides these towers, intended merely for use or adornment, many examples of the square staged tower, erected as tombs or monuments in imperial times, for long survived to

* *Ruins of the Palace of the Emperor Diocletian at Spalato*, by R. Adam.

† *Pagan and Christian Rome*, by Rodolfo Lanciani, p. 264.

‡ *TRANSACTIONS* (1868-69), Vol. XIX. p. 224.

accustom the eyes of the mediæval builders to this form of construction. One, the tomb of the architect Titus Claudius Vitalis, in the grounds of the Villa Volkonsky by the Lateran, was measured and described by Professor Donaldson.* This is a brick building, nearly square on plan, three stages high, the upper one separated from the lower by a bold cornice.

It is thus evident that when towers became necessary for purposes other than those of defence or decoration, models were found ready to hand which required but little alteration in their form or arrangement, or, indeed, in their architectural treatment, to fit them for the novel requirements which had arisen.

These new requirements were two-fold: First, to provide a place of safety for the protection of the treasures of the Church during the frequent tumults within the city, or against the attacks of pirates and foreign enemies, to which Rome and all Italy, from an early period, became exposed; and, second, for the hanging of the church bells which, from the time of Constantine, were used to summon the faithful to worship.

Cattaneo † asserts that no parts of any of the Roman campanili are

earlier than the eleventh century, in commenting, in a note, on the opinion of Mothes, who considered that the lower stages might date back to the sixth century, whilst the upper stages of pierced arcades must be relegated to the twelfth or thirteenth century. It is obvious, however, that some sort of defensive buildings in connection with the churches were common at an early period, for after every raid and revolution—and these occurred with awful frequency—much treasure and many lives were saved in some defensible place of retreat attached to the church or convent. I will deal presently with the historical evidence which can be adduced to suggest that Cattaneo's theory does not seem to fit in with acknowledged facts, and I shall also endeavour to show that not only do the lower parts of the towers belong to

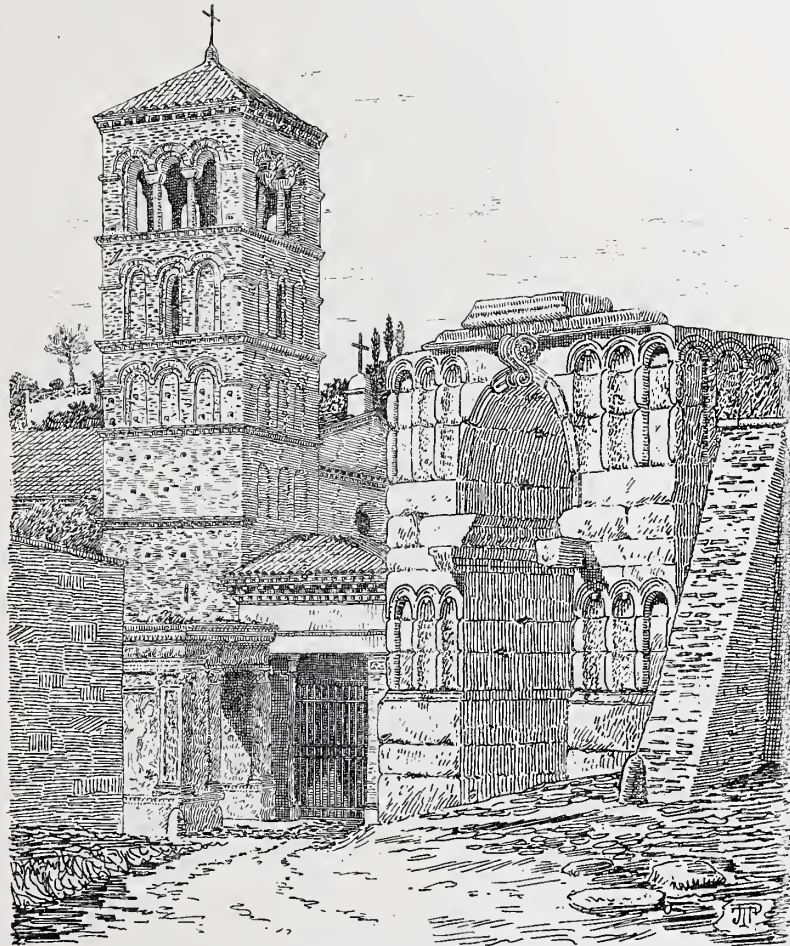


FIG. 4.—S. GIORGIO IN VELABRO.

* TRANSACTIONS (1868-69), Vol. XIX. p. 223.

† *L'Architecture en Italie*, par Raphael Cattaneo. Traduction, par M. le Monnier, p. 157.

the early date now usually assigned to them, but that, in some cases at least, the superstructure belongs to the same, or a not long subsequent period.

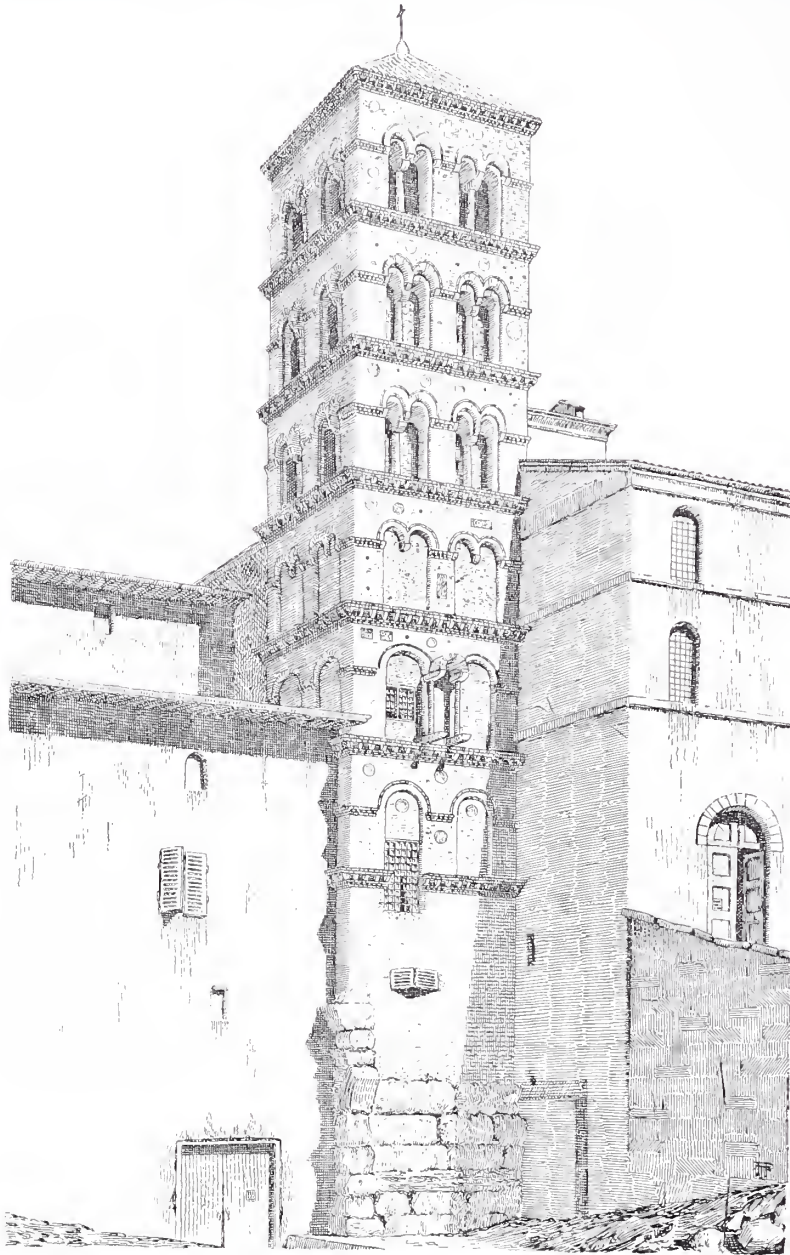


FIG. 5.—SS. GIOVANNI E PAOLO.

hood, became an immediate necessity ; and gradually, perhaps, but surely, these requirements were met, and a style and mode of construction had been formulated, to some extent at least, by the date at which we are informed the first bell-tower was erected by the atrium of S. Peter in the Vatican.

But before dealing with this I will take up the question of the other purpose, and no doubt the main one, for which these towers were erected. In a Paper like this there is no occasion, beyond a mere reference to it, to deal with the subject of the invention of church bells, or the legends about them, for on this topic innumerable memoirs have been written. There seems to be but little doubt but they were well known before the time of Paulinus of Nola, to whom their discovery is generally ascribed, although it is very likely they were for long treated as ecclesiastical luxuries. But if it is true that in the time of Constantine they were used for public announcements, and that by Pope Severinus (640) it was ordered that the hours should be sounded on them,* their use was much more common than is generally admitted. A proper place for the housing and hanging of these bells in such a manner that, when sounded, they should be heard in the surrounding neighbour-

* *Dictionary of Architecture*, W. I. and G. A. Audsley.

Cattaneo, who insists that no bell-tower in Rome can be (except it be its basement) earlier than the eleventh century, says, in reference to bells and towers generally* :—

Fleury has demonstrated, with examples, that in the sixth century many churches were already provided with towers and very large bells; and this is confirmed by several bells, for the most part cylindrical, at Ravenna, which, in their structure, in the nature of the materials which compose them, and in the character of their ornament, undoubtedly belong to the sixth century.

The first definite account we have of the building of a bell-tower in Rome is given by Gregorovius, describing the works to S. Peter's basilica, and mentioning his authorities, thus † :—

Stephen the Second (752-757) added a fourth monastery, apparently S. Tecla, or Jerusalem, and also added a bell-tower to the atrium of the basilica, overlaying this tower with gold.

Gregorovius also, in an account of S. Maria in Cosmedin, says, ‡ in reference to the works of Adrian the First (772-795) :—

Adrian found the church a ruined oratory, with the remains of an ancient temple still towering above it. Removing the huge blocks of travertine, he built a basilica, with three naves and a portico. This church was restored by Nicholas the First, in the latter half of the ninth century, and afterwards endured various alterations at the hands of Calixtus the Second and other Popes. Probably the beautiful bell-tower alone belongs to the eighth century.

Armellini, § in reference to this campanile, but without quoting any authority, as is too often the case with his work on the churches of Rome, assigns it to the eighth or ninth century. Among the many works which Leo the Third (795-815) executed in the restoration and adornment of the basilica of S. Peter's, it is particularly mentioned that he restored the tower. || It is stated of Leo the Fourth (847-854) that he "converted a little column, on which was the Greek dedication to Serapis, transcribed by Torigino, to the adornment of a window in the bell-tower," ¶ a use which perfectly describes the way in which ancient columns, such as those still remaining in the tower of S. Maria in Cosmedin, were adapted to the needs of the mediæval builder.

Ponyard says that when the Vatican bell-tower was thrown down, on the 27th October 1610,

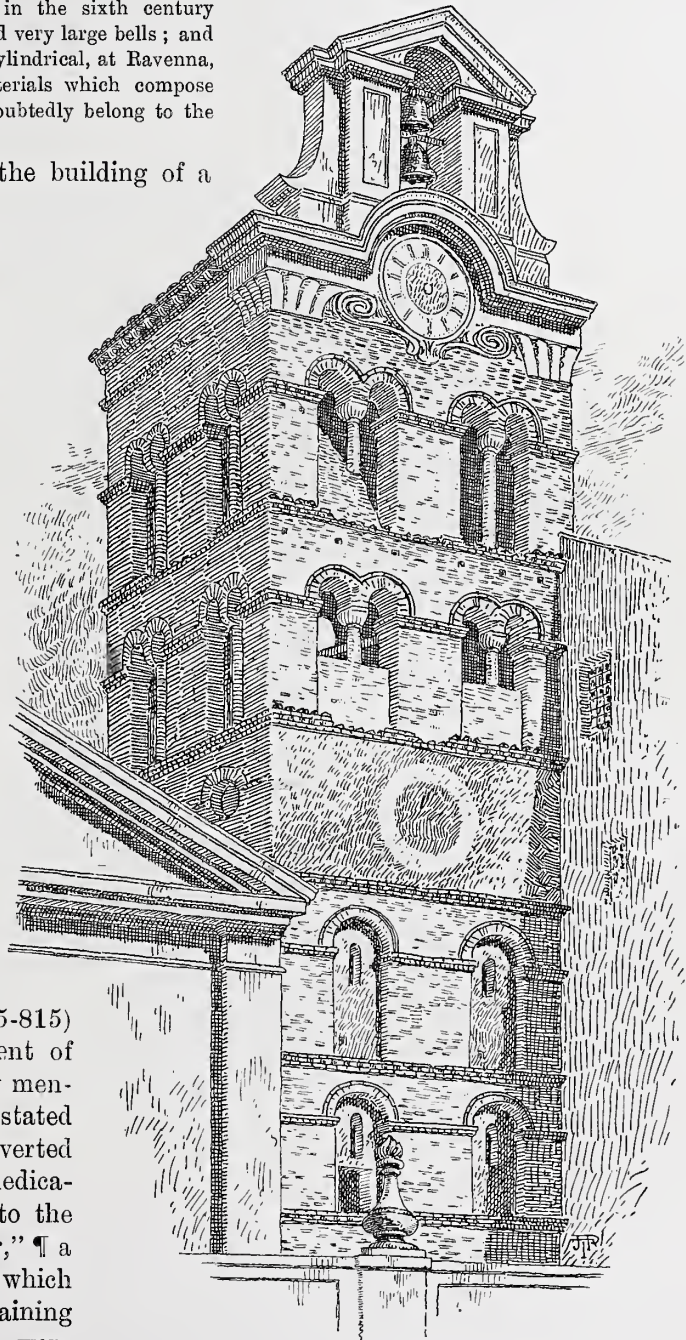


FIG. 6.—S. LORENZO IN LUCINA.

* Cattaneo, p. 235.

† Gregorovius, vol. ii. p. 315.

‡ *Ibid.* vol. ii. p. 406.

§ Mariano Armellini, *Le Chiese di Roma dal secolo IV. al XIX.*

|| Gregorovius, vol. iii. p. 27.

¶ *Ibid.* vol. i. p. 92.

under it were found medals of Constantine, Zoe, Heraclius, and others. But the campanile, built by Stephen and restored by the Leos, can scarcely have been the one which was destroyed at that date. The campanile then standing, if Ciampini's * engraving be correct, must have been a different one, or else the upper stages had been rebuilt, much as have been those of S. Maria Maggiore, that is to say, the windows had been grouped, not merely of

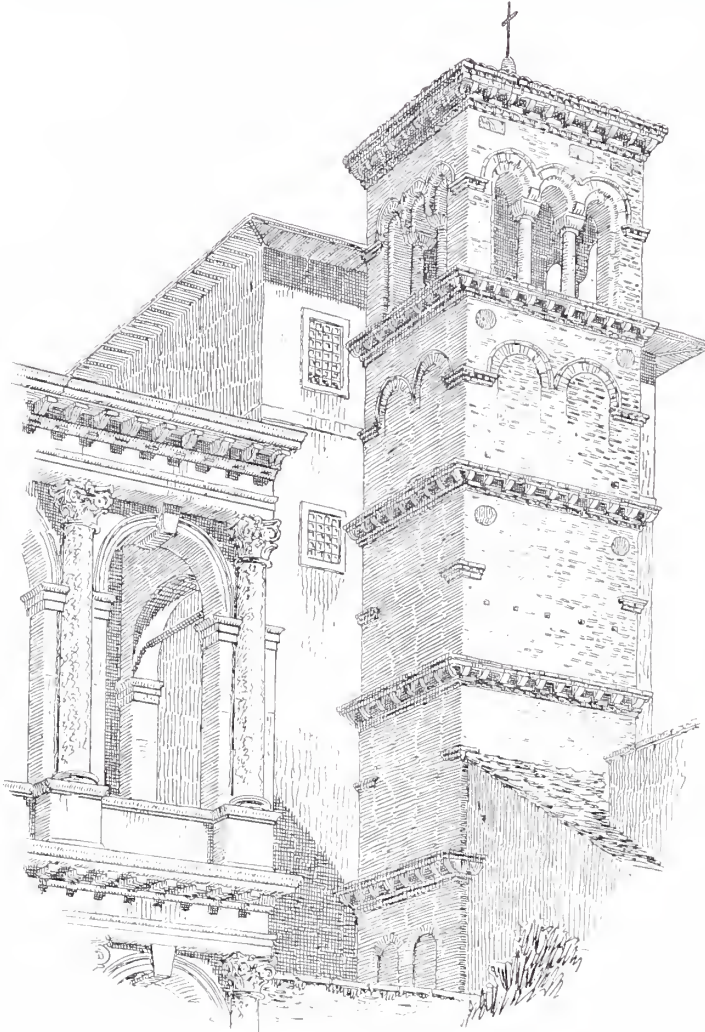


FIG. 7.—S. MARCO.

single lights, but two together under one outer arch, with some indication of tracery in the heads.

Besides the above facts, there is but little authoritatively stated fixing the date of any of the campanili, beyond the mention that some particular church was built by a certain Pope, without any special reference to the tower. Thus we are told that S. Cecilia was built by Paschal the First (817–823), and S. Michele in Borgo was built or restored by Leo the Fourth (847–854), about the same time that he built the walls of his Leonine city. There is, however, one case in which, although there is no written account, there is painted evidence, which may, perhaps, be relied on with more security than architectural theorising. This is the case of the campanile of S. Prassede. The interior of it is difficult of access; but Armellini † describes the paintings on the walls of an upper stage as representing incidents connected with the translation of the bodies of SS. Crisanto and Daria and others which took place under Pope Paschal the First (817–823); and as the character of the paintings point undoubtedly to his epoch, the date

of the tower must be earlier. In this belief both Cancellieri and Armellini agree; and in a conversation I recently had with Professor Lanciani, I gathered that he also supported their views. With an agreement like this among such experts, we may be well justified in accepting the date of the campanile of S. Prassede as belonging to the end of the eighth or the very beginning of the ninth century.

An abstract of the events which happened in Rome during the period which elapsed from the building of the first bell-tower of S. Peter's to the date usually accepted for the building or rebuilding of that of S. Maria Maggiore—1143—will enable us to define those periods during

* *De sacris Ædificiis*, J. Ciampini, 1593.

† *Armellini*, p. 241.

which peace and prosperity permitted, or devastation and trouble precluded, great building operations. From the time of the siege of Rome by the Lombards, in 580, to the accession of Gregory the Second, in 713, there had been alternations of inundations and earthquakes, of leprosy and pestilence, the ruin of the aqueducts, external war and internal tumults, and perhaps, worse than all, the visit of the Emperor Constans, who plundered the city of nearly everything still remaining of artistic or intrinsic value. Needless to say, during this period, destruction, not creation, reigned. The following period was not much better, but in some slight cessation of the troubles Gregory the Third (731-741) continued to build some few churches and strengthen the old walls to resist the Saracens, who were even then threatening the coasts. For a short time, by the aid of the Frankish kings, under Stephen the Second and Paul the First, there was a return of a mitigated prosperity, during which, as we have seen, the tower of S. Peter's was erected and overlaid with gold; but it was not until the descent of Charles the Great into Italy, that, under Adrian the First (772-794), new buildings were undertaken to any considerable extent. Adrian restored or patched up several of the aqueducts; he carried out extensive works at S. Peter's in additions, repairs, and decorations, and at S. John Lateran he built a tower. Large numbers of workmen were employed in gold and silver work, in enamel and mosaic, and art in Rome commenced to revive under his care. The rebuilding both of S. Maria in Cosmedin and S. Giovanni a Porta Latina is ascribed to him, as is also the campanile of the former. After his death there was



FIG. 8.—S. MARIA IN COSMEDIN (see p. 231).

further political trouble; but Paschal the First was able to continue his building operations, and the following churches are attributed to him—S. Cecilia, S. Prassede, and S. Maria in Domnica, whilst his almost immediate successor, Gregory the Fourth, rebuilt the basilica of S. Marco. Of these four churches, three still retain their campanili.

This period of intermittent prosperity lasted for about ninety years, from Stephen the Second to the death of Gregory the Fourth, when further troubles began, during which the Saracens captured and sacked S. Paul's beyond the walls and S. Peter's itself, and destroyed the Borgo, which was then defenceless, by fire. After the repulse of the Saracens, Leo the Fourth fortified the Borgo, restored S. Peter's, and built the churches of S. Michele, SS. Quattro

Coronati, and S. Maria Nuova (S. Francesca Romana). But after his death a cloud of misfortune, of blackness and horror descended upon the city, and the little that can be learned

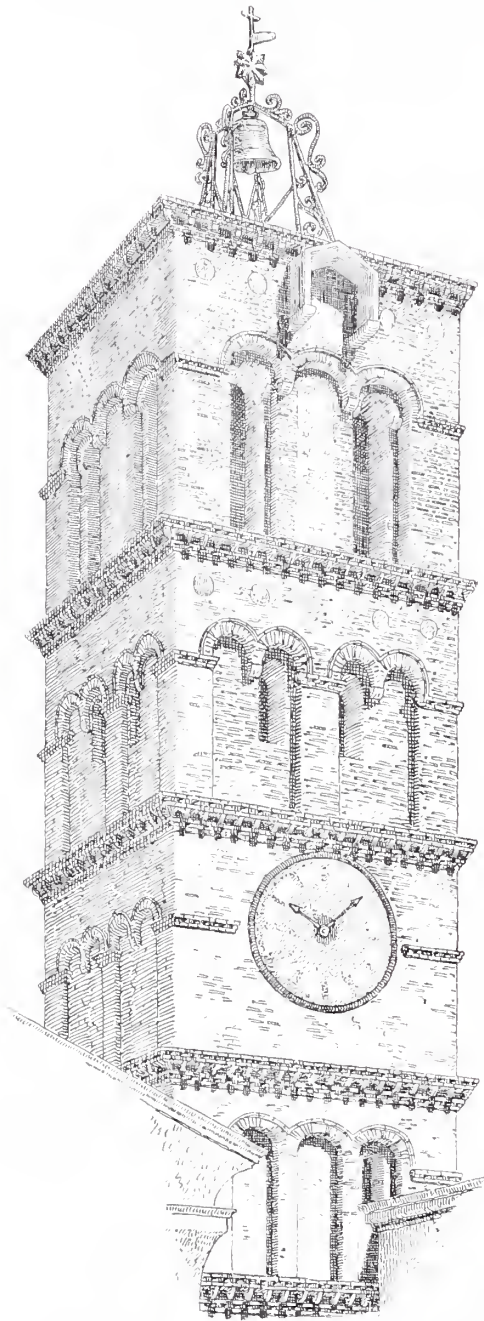


FIG. 9.—S. MARIA IN TRASTEVERE.

of its history during this period hints at, rather than relates, the degradation which had fallen upon it. It was during this period that the women governments of Theodora and Marozia flourished, when there were often two popes, and on one occasion there were three, one at the Lateran, one at S. Peter's, and one at S. Maria Maggiore, whose followers and supporters were continuously fighting in the streets.* A report from the imperial agents to Otho the First at this period informed him that "they lamented the desertion of the city and the ruin of the churches, through the decaying roofs of which the rain streamed upon the altars below."† During the short time the Emperor Otho the Third stayed in Rome there was a slight cessation of its misfortunes, and he found leisure sufficient to build the basilica of S. Adalbert, now known as S. Bartolommeo all' Isola. But from the time of his departure until the arrival of Robert Guiscard and his Normans, misfortune again ruled in the city. The story of the Norman sack of Rome, in 1084, ranks among the worst in its history. Guiscard burnt or destroyed the buildings of the Lateran Quarter, and of the Campus Martius, and reduced the basilica of SS. Quattro Coronati to ashes; and, retiring, left the city in a state of desolation and ruin.

So far as this outline of the events occurring in Rome up to the time of the Norman arrival guides us, it is evident that the campanili can only have been erected during those intervals of peace I have mentioned, or at a period some time subsequent to the siege, when Rome had sufficiently recovered from its ruin and poverty; but only an examination of the details of these buildings, as apart from the statements of historians, will enable us to form an opinion as to the probability of their erection previous to the end of the tenth century, or the possibility of this having taken place after the middle of the twelfth century.

In referring to the buildings of the time of Leo the Third (795–815), Gregorovius says ‡:—

A certain littleness is therefore everywhere perceptible in buildings of the period. The brick decoration of the friezes below the

* Gregorovius, vol. iv. p. 53. The three Popes were entitled Benedict IX., Sylvester III., and Gregory VI.

† Gregorovius, vol. iii. p. 340.

‡ *Ibid.* vol. iii. p. 25.

Such appears to me the character of all the churches belonging to the Carlovingian period. S. Maria in Cosmedin, Francesca Romana, Nereo and Achilles, the tower of S. Cecilia, S. Maria in Domnica.

The quotation I have already given from Professor Willis aptly described the general form of the towers, and this quotation from Gregorovius as well describes their details and decoration.

If we examine the cornices we shall find that, although there is great variety in the detail, in their form and general aspect they differ in no respect from those of later imperial times. They are simple in the extreme—two, three, or four courses of bricks, one perhaps a horizontal zigzag supported on rounded marble corbels with the brick courses repeated below. Such cornices remain intact round the Baths of Diocletian to this day, and they must have been numerous enough in Rome, in the early mediæval times, to supply those corbels used in the campanili, most of which were undoubtedly taken from ancient buildings.* The architraves are similar to the cornices, of two or three courses of bricks, generally with a zigzag course; but the archivolt, in their section, approach even more nearly to the Roman type, executed in brick instead of in stone. They are slightly recessed to form two orders, and have, in the place of the usual moulding, a projecting course of one or two thin tiles carried round the arch.

The columns and capitals which support the arches of the arcades appear to be a departure from the older style of building, although the shafts by themselves appear to be of the ordinary type, with the usual entasis. Many of them are fluted, as at S. Maria in Cosmedin, or scored, as at S. John Lateran. Others may have been worked for the positions they now occupy, as in S. Pudenziana, S. Salvatore della Corte, and other towers. But the capitals which they all carry, and on which the arches directly rest, are of a novel and peculiar character, without a parallel in earlier Roman work; and are neither more nor less than a lintel resting directly on the shaft, the length of which was made equal to the thickness of the wall; and it thus forms a bracket capital resting on a mid-wall shaft.

The necessity for some such expedient is obvious as soon as the use of the mid-wall shaft was adopted; but there being no precedent for such a feature in earlier work, a rude imitation of an architrave was devised and set directly on the shaft. The first use of this form cannot now be determined, but the germs of the arrangement appear in the arcades of the golden gateway of Diocletian's palace at Spalato, where the architraves, supported by detached

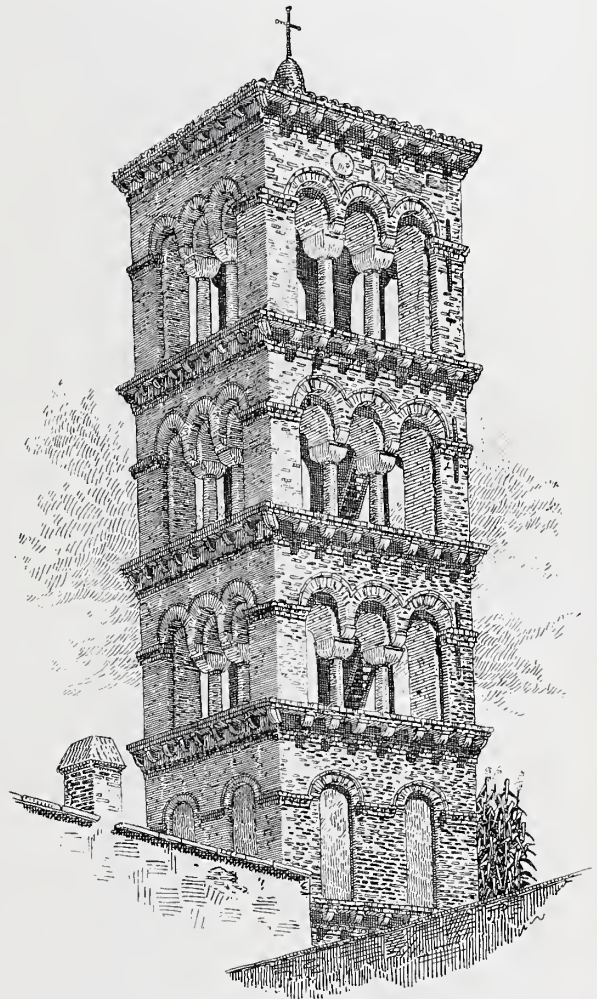


FIG. 10.—S. MICHELE IN BORGO.

* Lockyer's description of the cornices of S. Maria in Cosmedin is: "Cornices composed of 9 courses of bricks 1 inch thick, with small marble consoles 3 inches high and

4 inches broad introduced between the fourth and seventh courses. The mortar joints are generally as wide as the brick courses."

shafts, form a corbelling to carry the arches above.* According to Hübseh, similar capitals are to be seen at S. Apollinare in Classe, at Ravenna, dating about the middle of the sixth century; but these appear to be even more shaped and finished than the Roman examples. But, whatever their origin, their use seems to have been abandoned in Rome before the end of

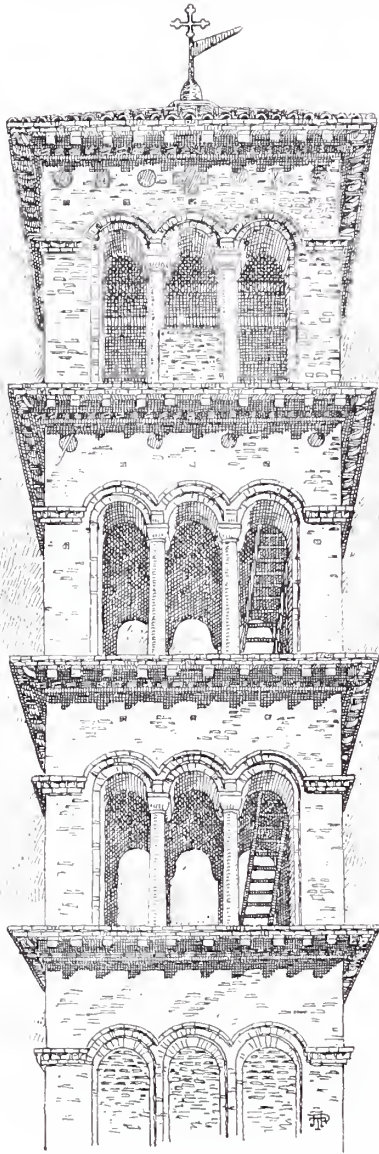


FIG. 11.—S. PUDENZIANA.

the eleventh century, for we find that in the tower of SS. Quattro Coronati, which was rebuilt by Paschal the Second, about 1117, that is, after its destruction by Guiscard, both the bracket and shaft have disappeared, and in place of them is found a pier, oblong on plan, with concave sides carrying a capital moulded of the same plan as the pier.† In the cloisters of S. Paul beyond the walls, and in those by Vasilectus at S. John Lateran, erected, in all probability, between 1150 and 1200, the shafts are coupled longways on plan to the width of the walls, with perfect capitals, and with the moulded abaci forming the springing of the arches. It seems incredible that these most beautiful and finished arcades should be contemporary with the comparatively coarse and rude constructions of the normal campanili.

Besides the reasons already given, which seem to me fairly conclusive, to show that these campanili belong to a period anterior to the eleventh century, there are other circumstances to be adduced also to justify this theory. Professor Baldwin Brown read a paper in these rooms some time since on Pre-Conquest Architecture,‡ in which he had much of interest to say on the use of the mid-wall shaft in Saxon buildings; but he scarcely suggested any theory to account for its origin, for its entasis, or for the peculiar bracket capital which generally surmounted it—as at Worth, Sompting, and other places. But there is in these details evidently an attempt to reproduce features unfamiliar to the designer, whether a practical builder or not, which features he did his best to explain to his workmen for them to execute as best they were able; and he succeeded in imitating the general forms of his original, while missing many of the little details and refinements. His principal departure from the original was in the entasis, the elements of which he failed to grasp. But when we remember the little columns, evidently meant to imitate a classic original, in the boxes of wooden bricks from

* Adam; also Fergusson's *Handbook*, vol. i. p. 379, fig. 247.

† The brackets to be seen in German Romanesque architecture are not to be confounded with the Roman examples, as the former have a complete capital to the shaft of the ordinary character of the style, and the corbel or bracket capital is superimposed upon this. One of

the best examples of this treatment is to be seen in the gallery surrounding the upper church of Schwarz-Rheindorf (1149-1151).

‡ *Some Characteristics of Pre-Conquest Architecture*, by Prof. Baldwin Brown, M.A. JOURNAL R.I.B.A., 3rd ser. Vol. II. p. 485.

the Black Forest, which gave some of us our earliest lessons in the arts of construction, this variation is easily understood.

Whence did the Saxons derive their ideas on this subject? Not from the scanty vestiges of antiquity still remaining in the island, not from France or Germany, where such features were unknown, but from the only place where they could by any possibility exist—Rome itself. Alfred the Great, entering S. Peter's for the coronation of his father Ethelwulf, had before him the great campanile of Stephen and Leo, and, when leaving, from the steps of the atrium, he may have seen the campanile of S. Michele of the Saxons in the Borgo, much as we see it now. The letter of Canute from Rome to his subjects,* Angles and Danes, informing them of the special advantages he had secured for them, either as pilgrims or merchants, shows the close intercourse existing between Rome and England in Saxon times—an intercourse quite sufficient to account for the influence of Roman forms on the English architecture. But, if this theory be sound, the buildings must have been then existing in Rome for the Saxons to copy.†

The proportion of the stages into which the campanili are divided varies considerably. The stages, above the lowest one, generally form a cube, the height of the storey, including its cornice, being equal to the width; such are S. Pudenziana and S. Michele. Sometimes they are less in height, as S. Silvestro in Capite and S. Prassede; or higher, as in S. Eusebio. In the cases of S. Maria in Trastevere and S. Francesca Romana the top stage is higher than those immediately below it. The dimensions of these towers vary very much in height, but not in width, which may be taken to average about fifteen feet, the widest being S. Cecilia and S. Maria in Trastevere, and the smallest S. Maria in Capella, which is only eight feet square. One of the loftiest of the towers, S. Maria in Cosmedin, which has eight stages, is one hundred and twelve feet high, and S. Maria in Montecelli, which is five stages high, about eighty feet.

The disposition of the openings of the arcades, although the details differ, may be divided into two groups, omitting two or three of the smaller towers in

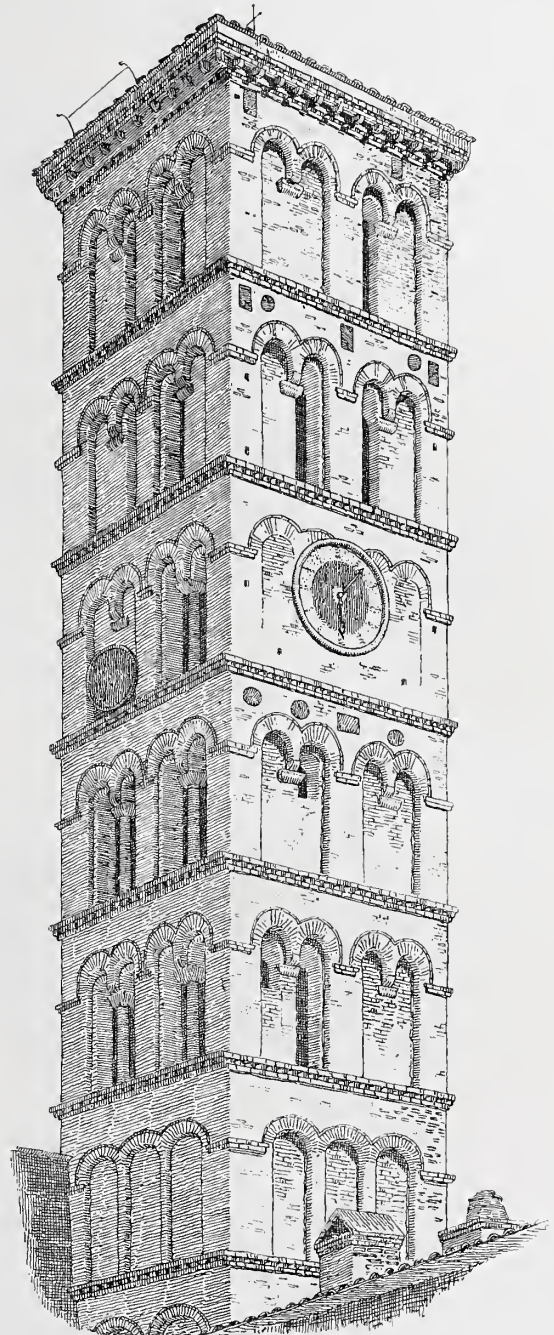


FIG. 12.—S. SILVESTRO IN CAPITTE.

* Gregorovius, vol. iv. p. 37.

† Gregorovius says, vol. v. p. 621: "We find to our astonishment that we are obliged to resort to English chroniclers for the best information regarding the state of the city. Roger of Hoveden and Matthew Paris, like

William of Malmesbury in earlier times, and William of Nangis in France, were better informed as to Roman affairs than Italian chroniclers themselves. The English, who then maintained active intercourse with Rome, already surveyed the world with a spirit of tranquil observation."

Trastevere. The first group has, on the highest stage, two pairs of openings, each pair with a central shaft, and with a pier separating them. Of the campanili thus arranged there are nine, of which S. Francesca Romana is an example. The second group has the openings

arranged as a triplet, with two shafts, and of these there are nineteen, of which S. Pudenziana is a good example. The stages below the upper one frequently repeat its arrangement, but the arches become less in number and cease to be coupled before the lowest stage is reached.

Before describing the decoration of these campanili, I should like to point out the great difference they present, in their general design, to the towers erected in other parts of Italy. We may take as a fair and well-known example of a dated north Italian tower, the one to the left of the front of S. Ambrogio at Milan. This was built, according to Cattaneo,* in 1129. Here, as in all north Italian towers of this period, all the lines are vertical, formed of flat pilasters repeated four times on each face, insignificant corbel-tables of small arches, no window openings or arcades, and no cornices anywhere to break the vertical lines; save that it is square on plan, nothing more unlike the Roman examples could

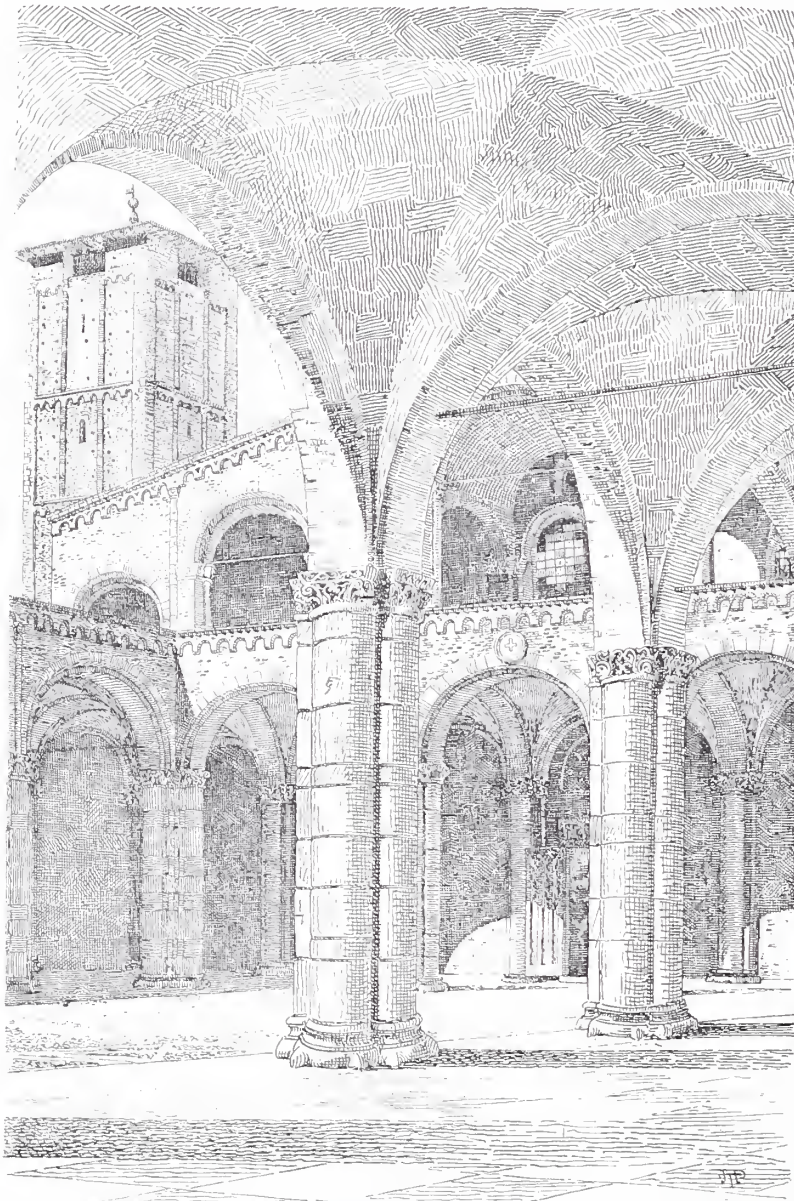


FIG. 13.—S. AMBROGIO, MILAN.

be imagined. Again, at S. Satiro,† in the same city, is a campanile which has the same vertical pilasters, the same corbel-tables, and absence of all cornices, but with this difference, that there are double openings in the two upper and a single one in the intermediate stage; altogether of a much less classic type than the Roman examples, but approximating more

* Cattaneo, p. 228.

† *Ibid.* p. 236.

closely to them than does the later tower of S. Ambrogio. The date assigned by Cattaneo to S. Satiro is 879.

In the south of Italy another type of tower, as different from the Roman as is the north Italian, was being built during the twelfth and thirteenth centuries. Square on plan, with, at most, only stringcourses to break the vertical lines, with large openings grouped under one enclosing arch, and having the highest stage smaller in area, finished with a spire or dome. Such are the campanili of the Duomo of Bari, the tower at Gaeta (1276–1290),* the Duomo at Ravello, and the Duomo of Amalfi (1276),† which last is surmounted by a dome with circular turrets at the angles.

I have thus particularly referred to these towers, which may seem to be quite outside the limits of this paper, on account of the assertion made in reference to the Roman campanili, that “they date from the middle of the twelfth to the beginning of the fourteenth century,” that is to say, that before the Romans began to erect their semi-classic towers, in the provinces with which Rome was intimately connected, other towers were being built which had lost all trace of their classic origin.

To return to the decorations of the Roman campanili. These were of three kinds—niches, plaques of porphyry, and roundels of majolica.

Of the niches constructed on the external faces of the campanili, there seem to be only four now remaining, two on that of S. Francesca Romana, and one each on S. Croce and SS. Giovanni e Paolo.

These are all of the same character, consisting of a brick arch resting on marble corbels, supported by columns which again stand on corbels below, and the whole generally finished with a brick pediment above. The object for which they were formed is not at first sight apparent. There is no corbel between the columns on which a statue could have been placed, but the backs seem to have been plastered, and may have been prepared to receive a picture. If this were the case, it would be an additional proof of the early character of these towers; for after the rupture which took place between Gregory the Second and the

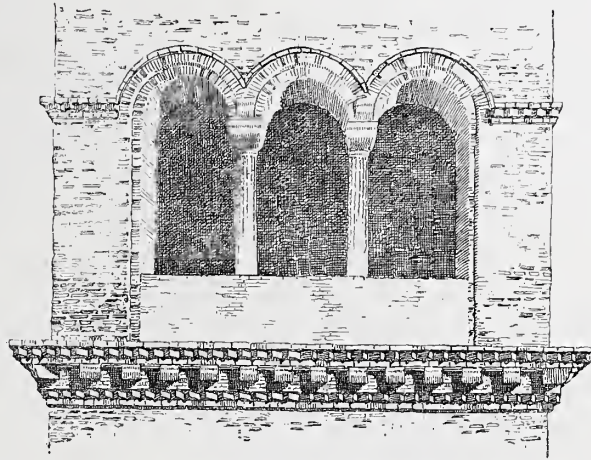


FIG. 14.- S. MARIA IN COSMEDIN.

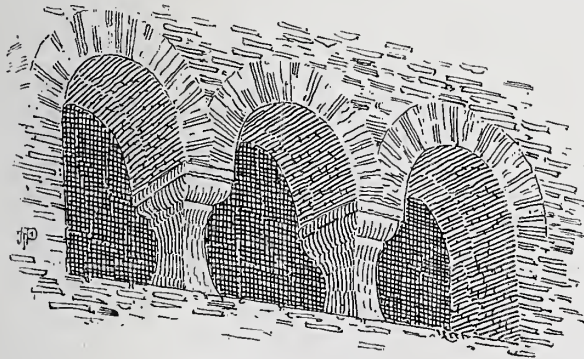


FIG. 15.—SS. QUATTRO CORONATI.

Emperor Leo the Iconoclast, in 726, large numbers of sacred pictures found their way to Rome from Byzantium; they may have been set up in such niches for the contemplation of the religious. On the north face of the north transept of S. Maria in Trastevere, there is a marble niche apparently of an earlier date than these, carried on moulded corbels, with columns reeded spirally, carved capitals and moulded architraves and pediment, with the

* Fergusson's *Handbook*, vol. i. p. 605.

† Murray's *Handbook*, *Southern Italy*.

same lack of arrangement for a statue, and which may have been designed for the same purpose. There is also a sort of niche on the face of the tower of this church, not of brick, but of thin slabs of marble, which still retains some traces of painting beneath.



FIG. 16.—NICHES.

1. S. Francesca Romana. 2. SS. Giovanni e Paolo. 3. S. Croce.

towers—SS. Giovanni e Paolo and S. Francesca Romana, in one form, and S. Croce and S. Maria Maggiore, in another form. These latter two have merely plain green glazed plaques, and seem of a comparatively late date, but the others are of a different class altogether. These plaques are highly glazed, of various colours, and all bear designs still clearly visible. One at SS. Giovanni e Paolo seems to have been painted for the position it still occupies, for it bears, worked in with its design, the sword and crown of the martyrs. Mr. Drury Fortnum,* in the *Archæologia*, gives an account of some of these “bacini” remaining at Pisa, and considers them to be subsequent in date to the capture of Majorca in 1115; but in his work on “Maiolica,”† referring to plumbeous glazed ware, says that “it is reasonable to believe that the art may have been preserved in Byzantium when lost, or nearly lost, in Italy.” This being so, it is easy to understand that at the revival of the arts in Rome, under Adrian the First, when he was introducing the methods of working mosaics and embroideries, of metal work, and other technical arts from the East, he would

The marble decorations are of various kinds, and unevenly distributed among the towers; it may be that in many cases they have been destroyed, more than one half having none. These are in the form of thin plaques of red and green porphyry, square, oblong and circular, and sometimes, but rarely, in the form of crosses. Where they are square or oblong they are very capriciously placed, but with the circles and crosses more regard is paid to symmetry. They are generally fixed flat on the surface of the wall, but the crosses on S. Francesca Romana are framed in a border of thin projecting tiles. Sometimes the roundels are also enclosed in a surrounding brick frame, also bordered with an edging of raised tiles. This occurs at S. Croce, and, with some variations in treatment, at S. Maria Maggiore.

The majolica decoration is very interesting, but opens up too large a question to deal properly with here. It occurs only on four

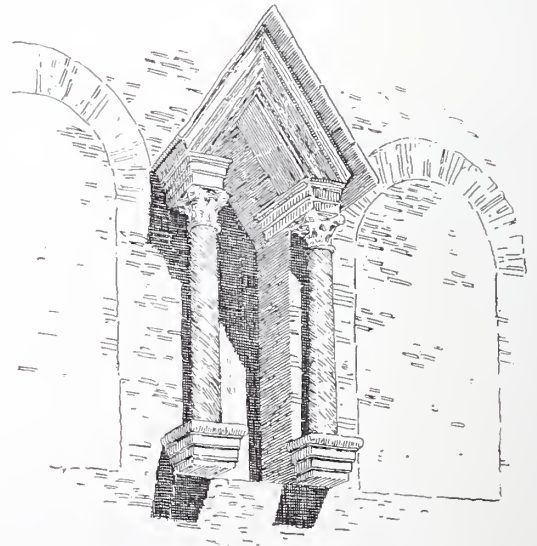


FIG. 17.—MARBLE NICHE, S. MARIA IN TRASTEVERE.

* *Archæologia*, vol. xiv. p. 379.

† *Maiolica*, by C. Drury E. Fortnum, F.S.A., p. 9.

doubtless not have overlooked the arts of pottery ; and it is, therefore, not difficult to believe that these bacini may be of a date coeval with the towers to which they are affixed. In the plate I have already referred to, the pattern is drawn in thin blue lines of indigo on a bright green ground ; and another one, on the same tower, has, on a yellow ground, streaks of brown and green flowing into the ground colour. At S. Francesca Romana there is one with a chequer of brown and green, all on a yellow ground.

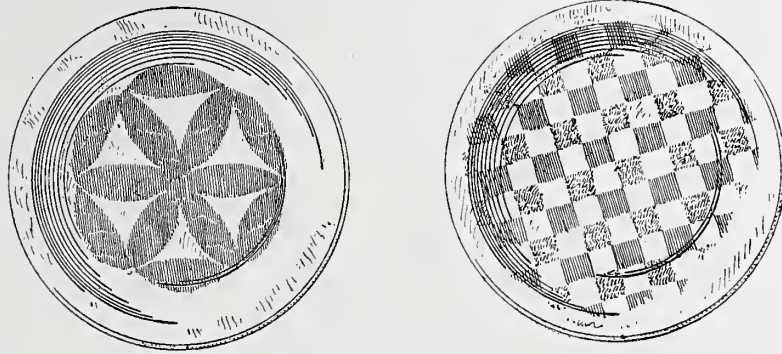


FIG. 18.—BACINI, FROM S. FRANCESCA ROMANA.

The state in which these campanili are now remaining can only be described as one of dilapidation ; S. Maria in Cosmedin and S. Cecilia are well out of the upright, all are tied together with iron ties, S. Eusebio being bound round the outside with an elaborate system

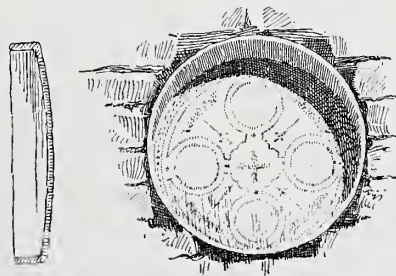
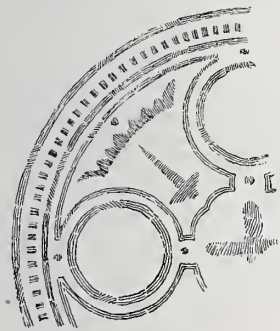


FIG. 19.—MAJOLICA ON SS. GIOVANNI E PAOLO.

of them ; and S. Michele in Borgo has been rent by an earthquake. All have suffered severely by the building up of their openings to strengthen the fabrics, with the result that many of the columns are embedded, so that they can only be traced by the projection of their bracket capitals. Among those which have suffered most in this respect, are S. Lorenzo beyond the walls, S. Giovanni

a Porta Latina, S. Croce and S. Maria in Trastevere. S. Sisto Vecchio, SS. Quirico e Giulitta, and the Madonna del Divina Amore have had their projecting corbels cut off, and their sides plastered over ; whilst the fine tower of S. Crisogono has had its marble corbels reduced to more classic proportions, and the whole modernized, so far as plaster and whitewash can do it, to match the equally ill-treated church to which it belongs.

I have included in my list of the campanili [p. 230] the twin towers of S. John Lateran, although a date as late as 1500 is sometimes assigned to them ; I am inclined, however, to think that this is in a great part due to the many restorations they have undergone, in the last of which they were covered with rusticated plastering. But as plaster does not last for ever, its decay has disclosed in patches the old brickwork behind, particularly round the arches ; and this, together with the evident antiquity of the marble columns, makes me think that the commonly received dates are incorrect. As to the fact of the unusual arrangement of there being two towers, both ancient, it is supposed that there were

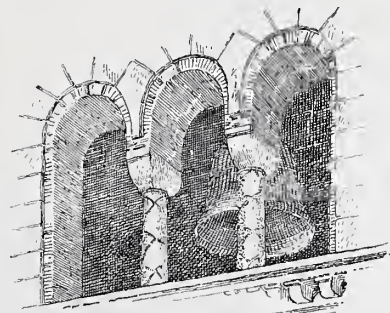


FIG. 20.—S. GIOVANNI LATERANO.

THE CAMPANILI OF ROME (NORMAL TYPE).

CHURCHES	STAGES								DECORATION	NICHEs
	Topmost	2	3	4	5	6	7	8		
SS. Quattro Coronati	One 4	Blank	—	—	—	—	—	—	None	None
S. Silvestro in Capite	2 Prs.	2 Prs.	2 Prs.	2 Prs.	2 Prs.	3 single	3 single	Blank	Marble plaques	"
SS. Giovanni e Paolo	"	"	"	2 single	"	Blank	Blank	—	Marble and majolica	One
S. Alessio	"	"	"	"	"	"	"	—	None	None
S. Francesca Romana	"	"	"	Blank	"	—	—	—	Marble and majolica	Two
S. Croce in Gerusalemme	"	"	"	Blank	"	—	—	—	Majolica	One
S. Lorenzo in Lucina	"	"	2 single	2 single	2 single	Blank	Blank	—	None	None
S. Crisogono	"	"	"	3 single	3 single	"	"	—	Plastered	"
S. Eustachio	"	Blank	—	—	—	—	—	—	None	"
S. Prassede	"	?	—	—	—	—	—	—	Marble plaques	"
S. Maria in Trastevere	1 triplet	2 Prs.	2 Prs.	3 single	Blank	—	—	—	"	One
S. Maria in Cosmedin	"	1 triplet	1 triplet	1 triplet	3 single	2 single	2 single	Blank	"	None
S. Pudenziana	"	"	"	3 single	"	Blank	Blank	—	"	"
S. Maria in Campomarzio	"	"	"	3 single	?	—	—	—	None	"
S. Michele in Borgo	"	"	"	2 single	Blank	—	—	—	Marble plaques	"
S. Salvatore delle Coppelle	"	"	"	"	?	—	—	—	None	"
S. Giovanni a Porta Latina	"	"	"	"	?	—	—	—	"	"
S. Giorgio in Velabro	"	"	"	Blank	Blank	—	—	—	"	"
S. Eusebio	"	"	"	"	?	—	—	—	"	"
S. Sisto Vecchio	"	"	3 single	?	—	—	—	—	Marble plaques	"
S. Cecilia	1 triplet	1 triplet	"	2 single	3 single	Blank	Blank	—	Plastered	"
Annunziata (destroyed)	"	"	"	"	Blank	—	—	—	None	"
S. Giovanni Laicvano (?)	"	"	Blank	"	—	—	—	—	Plastered	"
Madonna del Divino Amore	"	"	"	"	?	—	—	—	Marble plaques	"
S. Cosimato	"	"	"	"	?	—	—	—	Plastered	"
S. Maria in Monticelli	"	"	"	"	?	—	—	—	None	"
S. Bartolomeo	"	"	"	"	?	—	—	—	"	"
S. Marco	"	"	"	2 single	Blank	—	—	—	"	"
S. Salvatore della Corte	3 single	2 single	"	Blank	—	—	—	—	Marble plaques	"
SS. Rufina e Seconda	1 Pr.	1 Pr.	1 Pr.	Blank	—	—	—	—	"	"
S. Benedetto	2 single	Blank	Blank	—	—	—	—	—	"	"
S. Lorenzo f. m.	2 single	2 single	2 single	2 single	2 single	Blank	Blank	—	None	"
SS. Cosma e Damiano (destroyed)	"	"	"	"	"	"	"	—	"	"
S. Maria in Capella	"	"	"	"	"	"	"	—	"	"
S. Lorenzo in Panisperna	"	Blank	—	—	—	—	—	—	"	"
SS. Quirico e Giulitta	?	1 Triplet	?	—	—	—	—	—	Marble plaques	"
									Plastered	"

two to S. Peter's; and if this was the case, two would not be out of place to the Mother Church of the world—the Lateran Basilica.

As to S. Maria in Cosmedin, it is my good fortune to-night to exhibit an enlarged copy of the most careful measured drawing of its campanile, made by the late James Morant Lockyer, the original of which is in the Library of the Institute. It was published in the Architectural Publication Society's Dictionary, but only in chalk lithography, and in a manner which did no justice to the original. This drawing is valuable, not only for its associations, but because it gives the south-east face of the tower, the one most difficult to see.

In reference to S. Maria Maggiore, as it does not fairly come within the scope of this Paper, which is confined to the campanili of the normal type, I would merely point out that, although it bears a general resemblance to them, it is of a later date and character. The date usually accepted is the middle of the twelfth century, but this can only relate to the stage immediately above the roofs, the pointed arches of which show southern influence. The upper stages, with their traceried windows, may be of the fourteenth century.

There are other mediæval campanili in Rome, such as S. Maria del Popolo and S. Maria dell' Anima; but these are also outside the limits of my subject.

In concluding this paper, I can only say that whether the accounts of these buildings I have laid before you establish or not that theory of their date which I have suggested, it may

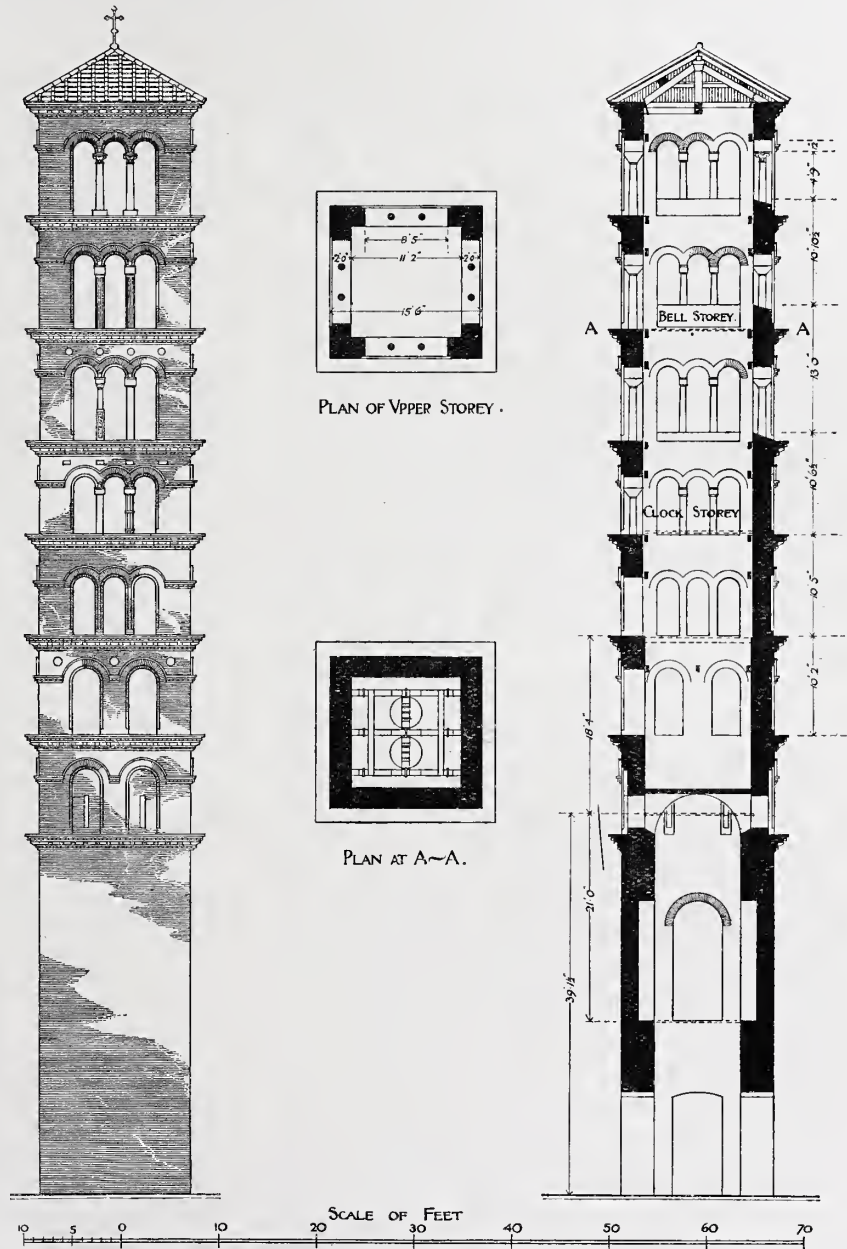


FIG. 21.—CAMPANILE OF S. MARIA IN COSMEDIN. SOUTH-EAST ELEVATION AND SECTION.

From a Drawing by James Morant Lockyer.

help to call attention to the unsatisfactory condition of their history; and it may assist to determine whether these most picturesque campanili are a natural growth from the debased Roman style which preceded them, or whether they are only an architectural "freak" of the middle ages, unconnected with and unsuggested by any other style, at any period, practised in Italy.

DISCUSSION OF MR. TAVENOR PERRY'S PAPER.

Mr. H. L. FLORENCE, *Vice-President*, in the Chair.

MR. R. PHENE SPIERS [*F.*] said that in the two or three papers he had had the privilege of reading before the Institute during the last few years, his intention had been to prove that the buildings described therein were of a later date than that hitherto ascribed to them; it was therefore a great relief to find Mr. Tavenor Perry coming forward to prove that, on another subject, viz., the Roman campanili, all the authorities were wrong, and that a much earlier date should be given to them. There was only one point on which he materially differed from Mr. Perry, viz., with regard to his criticism of the print of the Campanile of S. Maria in Cosmedin, published in Fergusson. Being partly responsible for that, in the sense that he allowed the woodcut to pass as being correct, he might mention that he compared it with a photograph first, but failed to see any particular difference between the illustration and Mr. Lockyer's drawing. There were one or two minor features scarcely worth notice, but possibly, as Mr. Lockyer's drawing was done from the most difficult position it could be seen from, and Gutensohn and Knapp took a different front, it accounted for the difference. However, Mr. Lockyer's drawing would probably be published, and those who were interested in the subject could compare the two, and see whether there was any serious discrepancy. Mr. Perry had undertaken to prove his argument by three courses of reasoning. The first was an historical one, with regard to which he had had the great advantage of coming across the translation by Mrs. Hamilton of a well-known work by Ferdinand Gregorovius. Mr. Perry had pointed out how the subject seemed to have been passed over by most writers; but the few extracts given by Mr. Perry showed that there were ample records to prove the contrary of what had been generally accepted, namely, that these towers were only of the eleventh and twelfth centuries; and the historical record, so far as it was taken from Gregorovius, appeared to be fairly satisfactory. The second course of reasoning was one which depended on the rationale of the subject. Bell towers, they knew, did exist in much earlier times, and that there was one existing at S. Apollinare-in-Classe, at Ravenna, of the sixth century, there was no possible doubt. It was a lofty round tower, the lower portion being without

any openings, or openings of a very small size, and the upper portion with belfry windows, similar to those of the Roman campanile. With so early an example it seemed curious that we should have to wait till the eleventh and twelfth century before finding a similar feature in Rome. Of course there might have been earlier bell towers which had been destroyed since. Mr. Perry had referred to the troubles—earthquakes, floods, invasion, &c.—in Italy in the seventh and the greater portion of the eighth century, which might have rendered it difficult to build, so that it was not until about the time of Charlemagne, when affairs settled down, that they were able to go on building. It was to about this period that he ascribed some of the campanili he had called attention to. Mr. Perry's third course of reasoning was that in which he spoke of certain characteristic features, and that was the line he (Mr. Spiers) considered to be in some cases the most interesting. As regarded the majolica plaque, that was a question for an expert; not having examined those plaques one could not judge as to what period they were likely to belong. One of the two designs given by Mr. Perry was certainly of Byzantine origin. The six-lobed pattern, as shown, was found on many early Byzantine sarcophagi, and was a well-known Merovingian design. Then came the other question of the mid-wall shaft. There he found it somewhat difficult to follow Mr. Perry, because what he (Mr. Spiers) looked upon as a "dosseret," or architrave-block above a capital, Mr. Perry called a "capital." That depended upon what one understood by a capital. The feature he alluded to was the block which the Byzantine architects of the fifth and sixth century employed to carry arches in a wall which was much wider than the supporting shaft and capital. It did not matter whether one called it a capital or a dosseret, but he understood that it was one of the important elements of Mr. Perry's arguments to prove that, when that feature was introduced in the Roman campanili, there was no capital under it—it rested on the shaft direct. He quite agreed with Mr. Perry that it was a point worth noting. He did not quite understand Mr. Perry's reference to the arcades of the palace of Diocletian at Spalato, which he seemed to take as the first use of the form. He did not know whether Mr. Perry had any proof that the

shafts, which were now gone, had not originally capitals on the top of them [Mr. TAVENOR PERRY: Adam restored the capitals], and one might judge from other buildings of earlier days that there were always capitals; that would, therefore, in one sense, take away from Mr. Perry's argument. If one copied a design in one part and omitted a leading feature, one could not give it as an example. However, he did not think that was the origin of the Roman type. It came, he thought, from Byzantine originals, and that in the church of St. Demetrius at Salonica was the first type. It was a Byzantine idea, that might have been first taken at St. Apollinare-in-Classa, Ravenna, and thence transported to Rome. The application of Mr. Perry's theory led him (the speaker) to accept that theory. It did, at all events, account for the origin of those features that were found in Saxon work. Mr. Perry had alluded to three or four of the Saxon churches. He himself had recently visited the church at Worth. During the restorations, a few years ago, they came upon the original Saxon windows, and these windows were divided by a shaft and corbel block above, identically the same as those in S. Maria in Cosmedin, and other towers illustrated. There was another example at Sompting, and many others throughout the country; and, though the copies were rude and coarsely worked, they must have had an origin, and the features they resembled most were those Roman examples. Mr. Spiers concluded by proposing a very hearty vote of thanks to Mr. Perry for the great research he had shown in his Paper, and for the admirable series of pen-and-ink drawings with which he had illustrated it. Mr. Perry's facilities of drawing in pen and ink, for which he had been famous from the earliest days of *The A. A. Sketch-book*, were well known, and he had earned their gratitude for the great trouble he must have taken in preparing the Paper, and the drawings with which it was illustrated.

MR. H. H. STATHAM [F.] seconded the vote of thanks, observing that the Paper was a very useful one, and contained some new information; he had followed it with great interest.

MR. WILLIAM WOODWARD [A.] said they were very much indebted to Mr. Perry for the collection of very beautiful drawings he had brought before them. In listening to the Paper he could not help hoping that some one in the position of Mr. Perry would devote an equal amount of time and study to illustrating those Norman round towers scattered about England, the uses of which had not as yet, he believed, been clearly defined. They might have had an origin of a similar character to that of the Roman campanili. That they were watch towers they knew, and possibly also campanili; but if a similar collection of drawings could be got together, and a similar study made of those isolated round towers in England, it would be very useful to the

Institute. He was delighted to think that love for Art, love for the loftier branches of the architectural tree, was not confined to that school of so-called "Art architects," the foundation of which to his mind rested upon cigar-shaped columns, broken pediments, and continuous bands of brickwork, but that a gentleman could be found with the important practical architectural business of Mr. Perry who was willing to devote some portion of his time to a subject that was essentially one of archaeological and historical character.

THE CHAIRMAN, in putting the vote of thanks, said that there was one point in connection with the Paper which he thought worthy of notice. The Institute sent out every year, as a travelling student, the winner of the Soane Medallion, and it might possibly be thought that students had read or learnt, seen illustrated or photographed, all that there was to be seen on those foreign travels; but Mr. Perry's Paper had shown them that, in spite of what they had been content to take from books, there was yet a great deal more to be learnt from the actual study of buildings. They had only taken what writers upon the history of Architecture, or guide-books, had stated to be the fact; and, without due examination, had accepted it for granted. Even upon such a subject as the campanili of Rome—one with which people thought they were well acquainted, many having been to Rome and looked at the campanili superficially—Mr. Perry had shown that there was yet a great deal to learn.

MR. J. TAVENOR PERRY [F.], in reply, explained the difference between the "dosseret" referred to by Mr. Spiers and the Roman corbel capital, pointing out that in the drawing of the Schwartz Rheindorf what Mr. Spiers called an elongated dosseret had a true capital underneath it. The Roman examples differed absolutely from those, as from the Byzantine, in having no intervening capital between the dosseret and the shaft beneath it. Therein lay the extraordinary likeness between the campanili in Rome, Albano, and Tivoli—but nowhere else, he believed—and those of Saxon work like Sompting. There was something in Subiaco in the cloisters which was very like it, with a shaft coming immediately underneath, and very elaborately carved; but the work was of two centuries later. He considered the question of the dosseret a very important argument in his favour, and he was obliged to Mr. Spiers for suggesting that the Paper had brought him round to his (the speaker's) views.

* * Photographs of many of the buildings referred to were exhibited in the Meeting-room, together with a series of pen-and-ink drawings the work of the author, most of which are reproduced to about half the original scale in the foregoing pages.

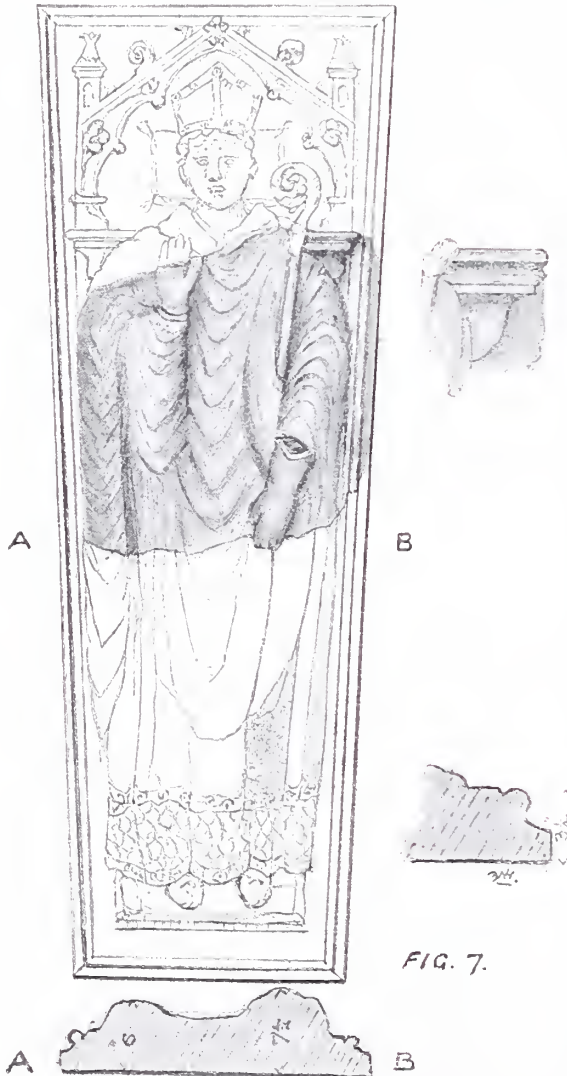
HOLYWELL PRIORY, SHOREDITCH.

By E. W. HUDSON [A.].

Part II.—Remains.

(Continued from page 177.)

THE portion of an effigy of a bishop, sculptured in Purbeck marble, to which Mr. Longmore draws attention [*ante*, p. 112], measures about twenty-four inches by twenty-one. Fig. 7 is a sketch of the relic, restored on the lines of those of Bishops Poore and Grostête at Salisbury



and Lincoln, and Evrard at Amiens, dating in the first half of the thirteenth century; although this may be placed somewhat later in date.

The hands are gloved, indicating high dignity; the right hand is raised in the act of benediction,

the left holds the pastoral staff partly covered by the drapery; but the heads of both figure and crozier, and also the legs, are lost. The moulded bracket by the left shoulder suggests a canopy over the head. The top member only of its abacus projects beyond the roll moulding round the slab. Mr. Longmore tells me it was found in demolishing a house on the north side of New Inn Yard, east of the North London Railway, about fifteen years ago. It formed part of the paving of a cellar, within ten feet of and about eight feet below the street, face downwards; and all attempts to find the other pieces were unsuccessful. It is proposed to send it to the Guildhall Museum.

It is improbable that a bishop dying in office would be interred outside the cathedral church; and Stephen de Gravesend was buried in St. Paul's choir, near the tomb of his uncle and predecessor, Bishop Richard of that name, who died in 1303.*

Stephen's humility and generosity were exemplified to the last by his directions regarding his funeral. His will, which is dated 19th February 1336 [10 Ed. III.], directs that only 100 marks are to be spent, 24 tapers only to be set up around his body, forbids distribution of money to the mourners, but directs that £100 shall be given to the poor of the several lordships connected with the church. He was elected 11th September 1318, enthroned in the following year, died 8th April 1338; the king, two cardinals, and many bishops attending the funeral. His courage in maintaining the rights of the See of London against the Archbishop of Canterbury, and in refusing to admit the legality of the deposition of Edward II., was the cause of the enmity of the citizens, and his conviction, finally, of high treason; although he was pardoned by Act of Parliament two years before his death.† He was erstwhile Prebend of Wenlakebarn in the Parish of St. Giles, but not of "Haliwell cum Vynesbury." As Lord Houghton

* This tomb cost £10 of the then value of money, and was destroyed with many others, *temp.* Edward VI. In 2 Elizabeth this wanton destruction in St. Paul's was finally stopped. A brass figure of a bishop in a stone slab was laid down in the S. transept at Lincoln, with an inscription in stone to his memory, according to Gough's *Mon. Antiq.* (Part 1, vol. i., p. 60, and Part 1, vol. ii., p. lxxiv.); but as he gives 1258 to 1279 as the period of this Richard Gravesend's tenure of the See of Lincoln, and as he was actually consecrated Bishop of London 11th August 1280, Mr. Gough is incorrect in saying he died in 1279, whereas he was only translated; and he and Dr. Willis have mistaken the "*Richardus quondam episcopus Lincolnensis*" of the inscription (which has no date) for another—as the remains of a bishop certainly were found beneath the stone. Richard's will is explicit in fixing the exact position of his grave in St. Paul's, and directs that the slab is not to be higher than the pavement. He died 9th December 1303, and his pastoral occupation covers forty-five years.

† Milman's *Annals of St. Paul's*.

wrote of Bishop Ken,—whose life might exactly have been modelled upon Stephen's:—

Who was this father of the Church,
So secret in his glory?
In vain may antiquarians search
For record of his story:
That dared with royal power to cope,
In peaceful faith persisting,
A braver Becket—who could hope
To conquer unresisting.

Whether Stephen's monument was spared by the iconoclasts for destruction in the Great Fire is not clear. It needs too vivid a fancy to suppose that, carted with rubbish and ashes from the ruins, it might have been shot upon waste heaps on the site of that identical Priory, where his munificence had been displayed more than three centuries before!

As touching the two corbels, also referred to p. 112 *ante*, as to which it has been suggested that they represented Edward III. and his Queen, Mr. Longmore writes me that he cannot recollect the coiffure of the female head (which, in the case of Philippa, would be a large, tightly rolled curl on each cheek), and adds:—

They might have been intended for Edward II. and Isabella. Each corbel was about 24 inches high and 18 inches wide, had moulded caps, the heads being beautifully sculptured. Owing to their sudden disappearance I believe they must have been acquired by some one interested in antiquities. I saw them in Holywell Street, about twenty-five years ago, placed as spur stones to a temporary gateway into the extension works of the Great Eastern Railway.

Such corbels would be well fitted for supporting curved braces of a large roof, and would, if coeval with either of the above-named reigns, cover the period of Stephen's twenty years tenure of office—viz., 11 Ed. II. to 11 Ed. III.; so that, supposing his benefactions to have included a new roof over the nave of the Priory church to replace the Norman roof then two hundred years old, these corbels may have appertained to the work.

ARMS AND SEAL OF THE PRIORY, &c.

It would seem as if all traces of the arms of the Priory were lost. They do not appear in Dugdale, Leland, or Tanner, and, so far as I can ascertain, no representation of them is extant. Upon a piece of land in Herts (supposed to be the virgate in Hinxworth given by Theobald, the son of Fulk, to the Priory) there were several ancient barns a century or more ago, which were then part of a farm, called "Nunwich," in Ashwell. In one of them, upon the tie-beam or roof collars, there was a shield bearing a *chevron between three stags' heads*; but these emblems of the chase rather suggest the arms of a benefactor than of a religious establishment, although stags' heads do figure in abbatial arms. Ellis was in doubt as to their nature, and had not seen any representation. It is stated that they were once to be seen in some old stained glass at "Ward's or King John's

Place." Islington, which passed into a private collector's hands, as hereafter to be mentioned; but there is no description of them on record.

The seal of the Priory is lost. An impression from it, however, is attached to a deed of the date of 1228, preserved in the Chapter House at Westminster, and a fair presentment of it, slightly reduced, is here given:—



It represents a half-figure of St. John Baptist, fullfaced, and having in his left hand a book unopened. The legend, as far as can be made out, is, . . . APL'I . . . JOHANNIS . . . WELL.* It is noticeable, as differing from the majority of seals, by the absence of any architectural feature whatever, and its crude design.

Impressions of various seals of benefactors attached to ancient deeds still exist. One was illustrated in the *Gentleman's Magazine* for May 1795, but, as Ellis said he found it did not correspond with the impression on that deed, I omit it. There was another, *circa* 1181, which had inscribed upon it "*Sigillum Rogeri de Bray.*" Another, dated 1239, "*Sigillum Galfredi Camerarii.*" Another, without date, "*Sig . . . Galfrid de Melicho.*" Another, also without date, had an eagle displayed. Another, dated 27th May, *anno* 29 Henry VIII., bears "TL" only.

There is a coat of arms *en rapport* with the Priory, an account of which is given in Hasted's *Kent*. A family named Hodsoll (formerly written *Huddyshole* or *Hudsoll*), who since the days of Henry V. owned the Manor of South Ash in Kent (members of which are still, I believe, residing in the neighbourhood, while others of past generations lie buried in South Ash Church), bore from early times: *Azure*, a fess wavy, between three stone fountains, or wells, *argent*. The "fess," it seems, is of less ancient date than the

* Dugdale, *Monas. Angl.* ed. 1823-30.

charge of the "wells." The fact of their holding land from the Priory is supposed to account for this unusual grant of arms. They are depicted on monuments on the walls and floors of South Ash, St. Mary Cray, and other churches in North Kent, where there are also hatchments.

STAINED-GLASS WINDOWS.

Mr. Timbs, F.S.A.,* makes a statement as to some of the painted glass from the Priory windows being in St. Leonard's Church, and this raised my hopes of finding another relic. He, however, is the only writer that I know of who makes the assertion, and, after an examination of the glass, I am afraid it is apocryphal, and that it is all of later date by 100 years than the dissolution. I think it tolerably certain that it belonged to the old church, and was transferred to the new parish church 157 years ago.

The following is the account given by Ellis. He says nothing as to its having been taken from the Priory, but seems to have got the information from Strype, as he quotes almost verbatim. Italics of mine indicate where they are in accord, and omissions and variations are supplied in parentheses :—

The east window hath (some handsome figures) painted in glass, our Saviour sitting at his last supper with his (twelve) disciples, all (sitting) upon forms; (you must consider the art more than the learning of the workman) and Judas with the (his) purse in his hand; and beneath him is his portrait in small represented as hanging upon a tree. The table is furnished with a standing cup, a candle, a salt-cellar, 2 small (penny) loaves, a knife, square trenchers, and the Paschal lamb in a dish. In the background are small representations of our Saviour washing his disciples' feet; Judas betraying him; his agony in the garden; and the parables of the lost sheep and piece of money.

This picture was bought and set up at the charge of certain parishioners, and in 1735 at the rebuilding of the church was cased in wood, pitched, and buried underground.†

It is inscribed in the lower corner "Baptista Sutton 1634." In 1642 the Vicar was charged with allowing a picture of the Virgin Mary, but it was only St. John with an effeminate face. (The face was bleared over to pacify tender consciences.)

Above this, which occupies the full width, are other distinct panels, also painted by Sutton.‡ One subject is from the "East window of the 3rd aisle of the old church, and is Jacob and Esau reconciled." Anent this, Strype continues :—

In the Vestry hard by the chancel in the east window [old church] there is another fair painted glass with the figure of the Father meeting the prodigal son. And under-

neath a signification of the donor and date, in these words • *Ex dono Thomæ Austin, Civis & Clothworker, Londini, Anno Domini 1634.*

(The panel looks much more like the Prodigal Son than Jacob and Esau reconciled.)

The left-hand subject is the Vision of Jacob at Bethel; the middle one, Jacob on his knees, with legend on a scroll proceeding from his mouth :

Minor sum cunctis miserationibus tuis

Veritate tuâ quam explevisti servo tuo.—Gen. xxxii. 10.

Over these in the window-head are small figures of the Evangelists, with their proper symbols and names beneath, and filling out the space on the left, the arms of the Clothworkers' Company, and on the right those of Thomas Austin,—*Azure* on a chevron between three lapwings *or*, as many quatrefoils *vert*; crest on a wreath, a lapwing *argent*. According to the date, 1634, none of the preceding can be "Haliwellian."

The four Evangelists, which are imperfect, look the oldest glass, if there is any difference; but authority is wanting to connect them with the Priory.

This window is semicircular-headed, and its glass has been made up of separate panels and pieces, as described. It is surrounded by a very broad ornamented guilloche to make out the width. On a narrow white band below the Evangelists is recorded: "This window was restored 186—," (of course with the names of churchwardens added); but unless it has occupied some other position since 1740, it is difficult to see what "restoration" was made then; the guilloche was an addition merely, where plain glass had been before the 'sixties.

This is the extent of the records and relics which have come under my notice at present. Some of the latter cannot with absolute certainty be referred to the Priory buildings; but, in case further evidence may hereafter be found, they have been included in this notice. I understand that Mr. Lovegrove is on the watch for discoveries in all works of excavation upon the site, so that further information may be forthcoming to add to this collection of what, I hope, is not altogether without interest for architects. I do not share the notion of a leader among us, who declares that "*Antiquarianism is the narcotic of Architecture.*" On the contrary, I believe that, without the former cult, the best specimens of nineteenth-century architecture would never have come into being. To my mind, if properly and wisely administered, it is rather "*the elixir of Architecture*" than its "*narcotic.*"

I venture, with much diffidence, sometimes to express views opposed to the writers to whom we owe so much for collecting particulars of this establishment, more, as it seems, from ancient documents than from observation. That discre-

* *Curiosities of London.* Ed. 1876, p. 730.

† Is there a mistake in this date? The reason for this hiding, if it ever occurred, is not evident.

‡ His name is given in Dallaway's Edition of *Walpole's Anecdotes of Painting* (1888) as the painter of these window panels, but no other particulars either of him or his work are afforded.

pancies, misquotations, and many repetitions should appear amongst them was inevitable.

It is to be regretted, however, that no one has carefully described in detail from *actual survey* the position, structure, and extent of the ruins which were visible prior to and during the eighteenth century. Its position, neither intramural, provincial, nor as rescued for parochial use, was, perhaps, the reason for this. It was too near, and yet it seems too far, to attract Sir Henry Ellis from Montague House, or Mr. Gough from Enfield, to describe, or Carter or Britton to sketch it. The last-named writer is fully justified in this instance in his lament about the way antiquarian history in general is written.

Even Eliza Cook's poem "Holywell" is prefaced with a note which confuses St. Clement's Well (Strand) with ours, and gives names and dates incorrectly,* although her verses apply naturally to both sites, *e.g.* :

Close and narrow that place is now,
Where the beautiful waters used to flow;
But those who will, may go and see
Where the waters sprang up pure and free.

And it is certainly a depressing sight, of grime, toil, and ugliness, which meets the view where once stood noble buildings; "the last resting-place of the Chancellor of a mighty sovereign."

The holy house where our fathers worshipped is laid waste.

They that did feed delicately, that were brought up in scarlet, embrace dunghills.

The legend on the valance at the Rutland funeral is certainly justified to-day—

"SIC TRANSIT GLORIA MUNDI."

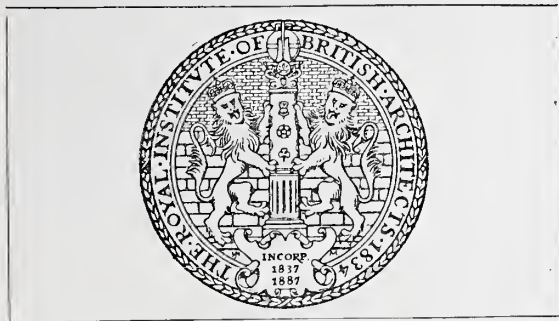
* The note runs thus:—"It is not generally known that the Tavern in Holywell Street, Strand, London, known by the sign of 'The Old Dog,' is raised on the site of the celebrated Holy-well, from which the street derives its name. Fitzstephens mentions this well in 1660 (*sic*) as being 'famous, and frequented by the scholars and youth of the City when they walked forth to take the air;' and Stowe alludes to it as 'being much decayed and spoiled with rubbish purposely laid there for the heightening of the ground for garden plots.'"

MINUTES VIII.

At the Eighth General Meeting (Ordinary) of the Session, held Monday, 21st February 1898, at 8 p.m., Mr. H. L. Florence, *Vice-President*, in the chair, the Minutes of the Meeting held 7th February 1898 [p. 212] were taken as read and signed as correct.

A Paper by Mr. J. Tavenor Perry [F.], entitled THE MEDIEVAL CAMPANILI OF ROME, having been read, and illustrated by a series of pen-and-ink drawings, the work of the author, a discussion ensued, and a vote of thanks was passed to the author by acclamation.

The proceedings then closed, and the Meeting separated at 9.40 p.m.



9, CONDUIT STREET, LONDON, W., 26th February 1898.

CHRONICLE.

THE EXAMINATIONS.

The revised programmes for the Summer Examinations, now printed and supplied to candidates, are as follows:—

I.—THE PRELIMINARY EXAMINATION.

To Qualify for Registration as Probationer R.I.B.A.

Examinations of gentlemen intending to follow the profession of architecture are held by the Royal Institute of British Architects, and some of the non-Metropolitan Societies allied to the Royal Institute, twice a year, in the months of June and November, in accordance with the particulars given on the application form. Except for those who have passed certain Examinations (hereinafter specified), this Preliminary Examination embraces the following subjects, particulars of which are given on the back of the application form:—(1) Short English composition; (2) Writing from dictation; (3) Arithmetic, algebra, and elements of plane geometry; (4) Geography and history; (5) Latin, Italian, French, or German: one language to be selected by the applicant; (6) Geometrical drawing or elements of perspective: either subject to be selected by the applicant; (7) Elementary mechanics and physics; (8) Freehand drawing from the round.

Gentlemen preparing to follow the profession of architecture who have passed any of the following examinations:—The Matriculation Examination at any University in the British Empire, the *Senior Local Examinations* conducted under the authority of any University in the British Empire, the Examinations for the First Class Certificate of the College of Preceptors, or such other Examinations as may be satisfactory to the Board—are exempted from submitting themselves for examination in the first, second, third, fourth, fifth, and seventh subjects; but certificates of having passed such Examinations only exempt applicants in the subjects covered thereby.* An applicant who submits, with his application and the evidence required in support of his claim for exemption, drawings (not exceeding four) which show his acquaintance with "Geometrical Drawing" or the "Elements of Perspective," and with "Freehand Drawing," may be further exempted from examination in the sixth and eighth subjects, should his drawings be considered satisfactory by the Board of Examiners.

All drawings submitted by applicants claiming exemption must be delivered flat, in a portfolio 30 inches by 22 inches, which can be purchased for about 4s.

The carriage of the certificates, drawings, &c., to and

* Science and Art and South Kensington Examination Cards and ordinary certificates below the third grade not being required or desired, it is particularly requested that such documents may not be sent.

from the office of the Royal Institute, and all expenses incidental thereto, must be defrayed by the owners. They will be delivered on demand to any person authorised by the owner to receive them, but the Royal Institute will not incur any expense in returning them. Due care will be taken of such drawings, certificates, &c., but the Royal Institute will not be responsible for any loss of or damage to them while they remain in its keeping. Partially exempted applicants are expected to remove their certificates, drawings, &c., immediately after the close of their examination; and those who are wholly exempted, on receiving notice of such exemption.

Every applicant desirous of qualifying for registration as *Probationer R.I.B.A.*, whether he claim exemption from submitting himself for examination or not, must make an application on the official form, to be filled up as directed thereon, and to be accompanied by an admission fee of two guineas, which will be returned should the application be refused.* If approved, the Secretary of the Royal Institute, in due course, communicates with the applicant in reference to the place at which he is expected to attend for the examination. In the case of applicants claiming exemption, their applications must be further accompanied by the evidence they have to submit in support of the claim.

The results of these examinations, whether held in London or at non-Metropolitan centres, are reported to the Council by the Board of Examiners, who recommend as to the fitness of applicants for registration as Probationers; and return the names of those who pass in alphabetical order. On the approval by the Council of such recommendations, the name of every successful applicant is forthwith entered on the Register of Probationers of the Royal Institute of British Architects, kept at the office; and he receives in due course a notification that he has been registered as Probationer.

A Probationer, on successfully passing the Intermediate Examination (to be passed by Probationers who have attained the age of at least 19 years), is qualified for registration as *Student R.I.B.A.*; and his name and address are then inserted in the Annual Calendar of the Royal Institute of British Architects. A *Student*, on passing the Final Examination (to be passed by Students who have attained the age of at least 21 years), is qualified, subject to the provisions of Section 8 of the Charter, for candidature as *Associate R.I.B.A.*

TIME-TABLE OF THE PRELIMINARY EXAMINATION.

Hours.	Division.	Tuesday.	Maximum Marks.
10.0-11.0.	1.	<i>Short English Composition.</i> —Simple subjects will be given to test the applicant's powers of observation and description.	40
11.0-11.30.	2.	<i>Writing from Dictation.</i> —A short passage from some standard English author will be given. Clear and well-formed writing, with accurate spelling and correct punctuation, should be aimed at.	20
11.30-1.30.	3.	<i>Arithmetic, Algebra, and Elements of Plane Geometry.</i> —The questions in arithmetic will include the first four rules, simple and compound proportion, and vulgar and decimal fractions, and will include such as have a practical bearing on the applicant's future work.	100

The algebra will include the elementary rules, with simple equations, and the use of symbols and factors.

* Applicants unsuccessful at their first sitting may present themselves again within twelve months without further fee. Should they then fail to pass, a fresh fee must be paid for each subsequent attempt.

Hours.	Division.	Tuesday.	Maximum Marks.
		In the elements of plane geometry a knowledge of the first two books of Euclid will be required, and of the subjects treated therein.	
1.30-2.30.	Interval.		
2.30-4.0.	4.	<i>Geography and History.</i> —Short questions will be set to test the applicant's knowledge of the geography of Europe, especially the British Isles, and of the prominent events in English history from the Norman Conquest to the end of the Tudor period.	60
4.0-5.30.	5.	<i>Latin, Italian, French, or German (one language only).</i> —One to be previously selected by the applicant. Short easy passages for translation into English will be set, with a few simple grammatical questions.	80
		Wednesday.	
10.0-1.30	6.	<i>Geometrical Drawing,</i> which will include the construction of scales, and the delineation to scale of some simple plan or elevation of a building; or <i>Elements of Perspective,</i> which will include simple problems in perspective. One of these two subjects to be previously selected by the applicant.	80
1.30-2.30.	Interval.		
2.30-3.30.	7.	<i>Elementary Mechanics and Physics.</i> —Simple questions will be set on the resolution and composition of forces, the mechanical powers, centre of gravity, &c.	80
		The questions will not be such as to involve any trigonometrical calculations.	
3.30-5.30.	8.	<i>Freehand Drawing from the Round.</i> —Some simple subject.	40
		Total number of Marks	500

II. THE INTERMEDIATE EXAMINATION.

To Qualify for Registration as Student R.I.B.A.

Examinations (written, graphic, and oral) of Probationers of the Royal Institute of British Architects are held by the Royal Institute twice a year, in the months of June and November, in accordance with the particulars given on the back of the application form.

A *Probationer R.I.B.A.* who has attained the age of at least nineteen years, and who is desirous of qualifying for registration as *Student R.I.B.A.*, must make an application on the official form, to be filled up as directed thereon; and to be accompanied by an admission fee of *Three Guineas*,* which will be returned should the application be refused. He must also send with his application Testimonies of Study † as hereinafter set forth, accompanied by a certificate from a member of the Royal Institute, or other person of recognised position, that the Probationer is a proper person to be admitted to this Examination, and that the Testimonies of Study he submits are his own work.

The Testimonies of Study ‡ required from Probationers

* In the case of Probationers registered prior to the 31st December 1895 the admission fee is *Two Guineas* only. Applicants unsuccessful at their first sitting may present themselves again within twelve months without further fee. Should they then fail to pass, a fresh fee must be paid for each subsequent attempt.

† Testimonies of Study already prepared in accordance with the old regulations will be accepted for approval by the Board for the Examinations in June 1898.

‡ In order to test the Probationer's knowledge of what he

R.I.B.A. are to consist of nine sheets of drawings (half double-elephant, *i.e.* 27 inches by 20 inches), neatly and carefully finished; and the sheets 1 to 6 are to be accompanied by a written description, illustrated by sketches, that is to say:—

1 and 2. Two sheets, giving examples (one on each sheet) of any two of the Orders of Architecture here named—the Doric, the Ionic, or the Corinthian—drawn in outline with the ornament and enrichments filled in; each sheet to contain two columns of one Order with entablature complete, drawn to scale (the columns being not less than 10 inches high on the paper), and details to three times the scale of the columns.

3. One sheet of details of Classic Ornament from the round in outline.

4 and 5. Two sheets, containing examples (one on each sheet) of any two of the periods here named—the Early English, the Decorated, or the Perpendicular—such as a door, a window, or an arcade, in plan, elevation, and section, with details of mouldings and ornament relating to such examples.

6. One sheet of Mediæval Ornament—freehand drawing from the round, in outline.

A concise description, giving such particulars as may be accessible, of the building or buildings from which the several subjects are taken, with the dates of erection and other details, illustrated by sketches of plan, general elevation, &c., and written on foolscap paper, on one side only—the whole to be the work of the Probationer's own hand.

* * It is desirable that some of the drawings submitted should be from actual measurement by the Probationer.

Probationers R.I.B.A. who are architectural students of the Royal Academy are permitted, in lieu of the Testimonies of Study Nos. 1 to 6 above specified, to submit, for the approval of the Board of Examiners, their work done in and for the Royal Academy School, provided that the drawings so submitted comprise studies applicable to paragraphs Nos. 4 and 5, whether prepared for the Royal Academy or otherwise.

7. One sheet containing diagram of timber-framed roof truss, not less than 30 feet span, with the nature of the strain on the several parts marked thereon, the ironwork and the junctions of the timbers drawn to a scale of one inch and a half to the foot in isometrical projection and dissociated.

8. One sheet showing the construction of floors—framed timber, combined iron and timber, and fire-resisting materials, suitable for a room 30 feet by 20 feet, drawn to a scale of half an inch to the foot.

9. One sheet of details of joiner's work in doors, windows, and fittings, shown in plan, elevation, and section, to a scale of one inch to the foot; with details, to a large scale, of mouldings and framing.

* * Each of the nine sheets must be carefully finished as a complete work. They must be delivered flat, in a portfolio 30 inches by 22 inches, which can be purchased for about 4s.

Those Testimonies of Study which, after examination by the Board, are marked "excellent," will receive an Honorary Mention; and a certain number of marks (not exceeding ten) will be allocated to each sheet of Testimonies, and allotted at the Oral Examination by the Examiners taking the several subjects.

If the Testimonies of Study submitted by the Probationer be approved by the Board of Examiners, the Secretary of the Royal Institute, in due course, communicates with him in reference to the place at which he is expected to attend for the examination. The carriage of the Testimonies of Study, notebooks, sketchbooks, description, &c., to and from the office of the Institute, and all expenses incidental thereto, must be defrayed by the owner. They will be delivered on demand to any person authorised by the owner to receive them, but the Royal Institute will not incur any expense in returning them. Due care will be

has drawn and described in his "Testimonies of Study," they are brought up at the Oral Examination, when he is required to answer questions respecting them.

taken of such Testimonies of Study, sketchbooks, notebooks, descriptions, &c., but the Royal Institute will not be responsible for any loss of or damage to them while they remain in its keeping.

The results of these Examinations are reported to the Council by the Board of Examiners, who recommend as to the fitness of applicants for admission as *Students*, and return the names of those who pass in order of merit. On the approval by the Council of such recommendations the name and address of every Probationer who successfully passes the Intermediate Examination are entered in the Register of Students and published in the *KALENDAR* of the Royal Institute; and he receives in due course a notification that he has been registered as *Student*.

Every *Student R.I.B.A.* has the right to use the Library and Loan Collection of Books, and the right of admission to the Ordinary Meetings of the Royal Institute; and on successfully passing the Final Examination (to be passed by *Students* who have attained the age of at least twenty-one years) he is qualified, subject to the provisions of Section 8 of the Charter, for candidature as *Associate R.I.B.A.*

TIME-TABLE OF THE INTERMEDIATE EXAMINATION.

Hours.	Division.	Tuesday.	Maximum Marks.
10.0-11.30.	1.	<i>Classic Ornament</i>	50
11.30-1.30.	2.	<i>The Characteristic Mouldings and Ornament of each period of English Architecture from the Conquest to A.D. 1560.</i>	75
1.30-2.30.		<i>Interval.</i>	
2.30-4.0.	3.	<i>The Orders of Greek and Roman Architecture, their origin, development, and application.</i>	80
4.0-5.30.	4.	<i>Outlines of the History of Mediæval and Renaissance Architecture in Europe.</i>	75
		* * The Papers to be illustrated by some Perspective Sketches.	
		<i>Wednesday.</i>	
10.0-12.0.	5.	<i>Theoretical Construction: Stresses, Strains, and Strength of Materials.</i>	75
12.0-1.30.	6.	<i>Descriptive Geometry: the Projection of Solids.</i>	50
1.30-2.30.		<i>Interval.</i>	
2.30-5.30.	7.	<i>Elementary Applied Construction: the Nature and Use of Ordinary Building Materials.</i>	125
		Total number of Marks	800

Thursday.

Oral Examination on the various Papers and the Testimonies of Study.

III. THE FINAL EXAMINATION.

To Qualify for Candidature as Associate R.I.B.A.

Examinations (written, graphic, and oral) of Students of the Royal Institute of British Architects are held by the Royal Institute twice a year, in the months of June-July and November-December, in accordance with the particulars given on the application form.

A *Student R.I.B.A.* who has attained the age of at least 21 years, and who is desirous of qualifying for candidature as *Associate R.I.B.A.*, must make an application on the official form, to be filled up as directed thereon; and to be accompanied by a remittance of Three Guineas, which will be returned should the application be refused, and be placed to his credit as his entrance fee should he be elected an Associate within eighteen months from the date of passing the Final Examination. He must also

send with his application Testimonies of Study* as hereinafter set forth, accompanied by a certificate from a member of the Royal Institute, or other person of recognised position, that the *Student* is a proper person to be admitted to this Examination, and that the Testimonies of Study he submits are his own work. *The admission fee to the Final Examination is Four Guineas for every applicant not registered as a Probationer prior to December 31, 1895, three guineas of which will be placed to his credit as his entrance fee should he be elected an Associate within the period hereinbefore mentioned.*†

The Testimonies of Study required from Students R.I.B.A. are:—

1. A study of Ornament from the round, shaded.
 2. A design for a Building of moderate dimensions, such as a detached villa, parsonage, school, local institution, or cottage hospital, to be fully drawn out as working drawings to a scale of not less than one-eighth of an inch to the foot, in plans, elevations, and sections, duly figured and showing construction, drainage, with details of the construction and ornament, and a perspective view.
 3. Drawings of some Historical Building, or part of a Building, made from actual measurement, with the jointing of the masonry, &c., correctly shown, and the construction; the whole in plan, elevation, and section, carefully figured, with details at least one quarter full size. The original sketches measured and plotted on the spot are to be appended.
 4. One sheet of diagrams of Constructive Masonry or Brickwork, such as arches or groined vaults, with the projection of arch and vault stones.
 5. One sheet of diagrams of a Roof Truss of iron or steel, not less than 40 feet span, with details to a large scale, with all the calculations for strength at the various parts fully worked out and appended thereto.
- The candidates must also submit sketchbooks or other evidences of study of buildings and of travel, and satisfactory evidence, with sketches, of having followed the carrying out of building works, and notes of the progress and conduct of such works.

* * Each of the sheets of drawings (half double-elephant, *i.e.* 27 inches by 20 inches) must be carefully finished as a complete work. They must be delivered flat, in a portfolio 30 inches by 22 inches, which can be purchased for about 4s.

Those Testimonies of Study which, after Examination by the Board, are marked "Excellent" will receive an Honorary Mention; and a certain number of marks (not exceeding 10) will be allocated to each sheet of Testimonies, and allotted at the Oral Examination by the Examiners taking the several subjects.

If the Testimonies of Study submitted by the Student be approved by the Board of Examiners, the Secretary of the Royal Institute, in due course, communicates with him in reference to the place at which he is to attend for the Examination. The carriage of the Testimonies of Study, Notebooks, Sketchbooks, Description, &c., to and from the office of the Royal Institute, and all expenses incidental thereto, must be defrayed by the owners. They will be delivered on demand to any person authorised by the owner to receive them, but the Institute will not incur any expense in returning them. Due care will be taken of such Testimonies of Study, Sketchbooks, Notebooks, Descriptions, &c., but the Royal Institute will not be

* In order to test the Student's knowledge of what he has drawn and described in his "Testimonies of Study," they are brought up at the Oral Examination, when he is required to answer questions respecting them. Testimonies of Study already prepared in accordance with the old regulations will be accepted for approval by the Board for the Examinations in June 1898.

† Applicants unsuccessful at their first sitting may present themselves again within twelve months without further fee. Should they then fail to pass, a fresh fee must be paid for each subsequent attempt.

responsible for any loss of or damage to them while they remain in its keeping.

The *Student* who successfully passes the Final Examination becomes qualified, subject to the provisions of Section 8 of the Charter, for candidature as Associate of the Royal Institute of British Architects, and he receives, in due course, a notification to that effect. He is then eligible for the award of the Ashpitel Prize, which is annually presented to the candidate who most highly distinguishes himself in the Final Examinations held during the year.

In the event of any *Student* failing to pass the Final Examination within four years of having passed the Intermediate, his name will be removed from the Register of Students, unless the Council are satisfied that good cause exists for allowing it to remain.

TIME-TABLE OF THE FINAL EXAMINATION.

Hours.	Division.	Friday.	Maximum Marks.
10.0-1.30.	1.	<i>Design of a Building of moderate dimensions, or a portion of a more important edifice, to be made from particulars given. The drawings to comprise plans, elevation and section, to a scale of $\frac{1}{8}$-inch to the foot, some details to a large scale, with a sketch perspective. The subject will be communicated in general terms to the Student some days before the Examination.</i>	350
1.30-2.30.	<i>Interval.</i>		
2.30-5.30.	1.	<i>Design (continued).</i>	
		<i>Saturday.</i>	
10.0-1.30.	1.	<i>Design (continued).</i>	
1.30-2.30.	<i>Interval.</i>		
2.30-4.0.	1.	<i>Design (continued).</i>	
		<i>Monday.</i>	
	2.	<i>The Principal Styles of Architecture: their Features, Mouldings, and Ornament—</i>	
10.0-1.30.	(i)	<i>The Characteristic Mouldings, &c., of the Special Style selected by the Student.</i>	125
1.30-2.30.	<i>Interval.</i>		
2.30-5.30.	(ii)	<i>The Characteristic Mouldings, &c., of the Principal Styles of Architecture.</i>	75
		<i>The Student will be expected to show a thorough acquaintance with the Style selected, also a competent acquaintance with the details of other Styles. The words "architectural style" may be understood to imply Greek, Roman, Byzantine, Romanesque, one period of Gothic (English, French, German, or Italian), Renaissance, or one of the transitional varieties.</i>	
		<i>Tuesday.</i>	
10.0-11.30.	3.	<i>The nature and properties of Building materials: their decay, preservation, and quality, and their application in building.</i>	75
11.30-1.30.	4.	<i>The Arrangement and Construction of Buildings in relation to health, drainage, water supply, ventilation, lighting, and heating.</i>	75
1.30-2.30.	<i>Interval.</i>		
2.30-5.30.	5.	<i>Specifications and Estimating.—A specification of the work in various trades. The Measurement and Cost of Building work. The Conditions for Building Contracts.</i>	75

Hours.	Division.	Wednesday.	Maximum Marks.
10.0-1.30.	6.	<i>Construction.</i> —Foundations, walls, retaining walls, arches, vaults, floors, roofs, &c., and constructive details in all trades.	100
1.30-2.30.	<i>Interval.</i>		
2.30-5.30.	7.	<i>Construction.</i> —Construction in iron and steel. Shoring, underpinning, and dealing with ruinous and dangerous structures.	125

Total number of Marks . 1,000

Thursday.

Oral Examination on the various Papers and the Testimonies of Study.

SPECIAL EXAMINATION.

To Qualify for Candidature as Associate R.I.B.A.

[For Applicants exempted, by special Resolution of the Council, from the Preliminary and Intermediate Examinations, and from submitting Testimonies of Study.]

The attention of architects in practice, not less than 25 years of age, and of chief assistants over 30 years of age, who may contemplate applying for admission to the Royal Institute of British Architects, is directed to the new Regulations of the Special Examination qualifying for candidature as Associate, which is held twice a year, in the months of June-July and November-December, in accordance with the particulars given on the application form.

Architects in practice and chief assistants, as above stated, who desire to be admitted as Associates, can be exempted from passing the Preliminary and Intermediate Examinations and from sending in Testimonies of Study. They can be admitted, by resolution of the Council in each case, to a Qualifying Examination (namely, the Final of the three Examinations), which is conducted with especial regard to the requirements of such architects, their professional works and position being duly taken into account by the Board of Examiners.

The probationary work required to be submitted and approved prior to the applicant's admission to the Examination may consist of the working drawings of a building, executed or otherwise, of his own design, with a perspective view (not necessarily of that building), and a drawing of some ornament from the round. All practitioners of architecture who have been in the active exercise of their profession previous to January 1, 1885, are exempted from submitting any probationary work. An applicant who may have entered into practice since 1885 may submit the working drawings of any building erected from his design and under his superintendence, with a drawing of a building in perspective and a sheet of ornament. Due care will be taken of probationary work submitted by applicants, but the Royal Institute will not be responsible for any loss of or damage to the drawings while they remain in its keeping; and applicants are expected to remove their probationary work immediately after the close of their examination.

A fee of Six Guineas for the Special Examination must be paid by each applicant on sending in his formal application.* Should an applicant be admitted and pass, he will be qualified, subject to Section 8 of the Charter, for candidature as Associate.

The names of those who pass are returned alphabetically, and they are at once informed thereof, with a view to their presenting themselves for election as Associates,

* Applicants unsuccessful at their first sitting may present themselves again without further fee.

the entrance fee to which class is Three Guineas and the annual subscription Two Guineas. Should an applicant not be passed by the Board, he will be informed of the fact, but no public notice is taken thereof.

Applicants availing themselves of these special concessions are not eligible for the Ashpitel Prize.

[The time-table for the Special is identical with that of the Final Examination printed above.]

The Stamping of Awards where no amount is stated.

It was reported to the Practice Standing Committee that a document sent to two different offices to be stamped was said to be liable to stamps of different value. As the question was of some importance the matter was fully discussed by the Committee, and an application was made to the Board of Inland Revenue by the Chairman with the object of getting a decision on the matter.

The following reply having been received, the Council think it advisable to print it for the information of the general body of members:—

*Inland Revenue, Somerset House, W.C.,
25 Jan. 1898.*

SIR,—The Board of Inland Revenue, having had before them your letter of the 14th inst. complaining of the incidence of the Stamp Duty on Awards which are not measured by a money value, have directed me to state that, as under the Stamp Act 1891 such award falls to be charged with the duty of £1 15s., they have no power to vary that amount. I may add that the particular award to which you refer cannot be traced. It is the practice at this office and at Telegraph Street to stamp awards of the class in question with the duty of £1 15s., but there are cases in which it is difficult to assess the duty.—I am, Sir, your obedient servant,

(Signed) T. N. CRAFER, Secretary.

J. DOUGLASS MATHEWS, ESQ.

The University of California.

A plaster relief map of the site will be supplied to any competitor on application to Mr. B. R. Maybeck, 7, Rue Honoré Chevalier, Paris, if he will state in his letter that he will pay the expenses of its carriage from Paris. A pamphlet of photographs has now been prepared and will be supplied to competitors if desired.

York Architectural Society.

The York Architectural Society held its first meeting of the session on the 11th inst., in the Church Institute, Petergate, the President, Mr. G. Benson, in the chair. A paper was read by Mr. R. A. Easdale [A.], of Castleford, a former York resident, entitled "An Architectural Student's Rambles between Wakefield, Doncaster, and Selby." Among those present were the Rev. G. H. Hewison, Mr. Arthur Pollard, Mr. A. J. Penty, Mr. Jno. Ferguson, and Mr. A. Burleigh, hon.

secretary. The lecturer, who took the silver medal and money prize offered by the Leeds and Yorkshire Society in 1896 for the paper bearing the above title, illustrated his remarks by a series of measured drawings and sketches. The district dealt with, he said, was roughly triangular in form, with the towns referred to at the three extremities. Within this triangle the student of architecture might acquire a vast amount of knowledge from a study of the many fine examples of Norman and early English work to be found in the district. Mr. Easdale made particular reference to the church at Birkin, which he had measured throughout. After tracing its geometrical outline, he drew attention to one of the chief features of the building, viz. its apse, which, in the original, supplied almost the entire light to the nave. Some very exquisite detail of the Norman period might be seen in the south doorway, which had been rebuilt at the time the south aisle was added. The latter contained some good decorated tracery, but the insertion of a window in the eastern wall of the apse Mr. Easdale considered was a fatal error in the restoration.

The Architects' Benevolent Society.

The Annual General Meeting of the donors and subscribers to the Architects' Benevolent Society will be held at the rooms of the Royal Institute on Wednesday, March 9th, at 5 p.m., under the presidency of Professor Aitchison, R.A., to receive the Report of the Council, the Statement of Accounts, and to elect five new members of Council. On the recommendation of the Council an alteration will be proposed in By-law No. 65, by which the number of the Society's pensioners may be increased from three to six; and it will be further proposed to amend By-law No. 6, so as to make subscribers of two guineas and more eligible for election on the Council. It is hoped that there will be a good attendance of members.

REVIEWS. LXVII.

(184)

STAINED-GLASS WINDOWS.

Windows: A Book about Stained and Painted Glass.
By Lewis F. Day, author of "Nature in Ornament,"
&c. 8o. Lond. 1897. Price 21s. net. [B. T. Batsford,
94, High Holborn.]

As a writer on stained glass Mr. Day has three great merits: he is a practical workman—"my earliest training," he says, "was in the workshops of artists in stained glass;" he knows all the examples that remain to us of what the art during past centuries has produced—"for over a quarter of a century," he says, "I have spent great part of my leisure in hunting glass all over Europe"; and he writes in a clear and trenchant style,

rising occasionally into epigrams which mint in sharp clear coinage his narrative and argument. No one can read this book without learning what he did not know before. Those wholly ignorant of the subject will learn its history, what its aims are, and what it has produced; and those, if there be any, to whom it tells nothing new will find their knowledge arranged and made definite.

The work is divided into three books: the first treats of craftsmanship—the material and the growth of the art, how it was put together to make a window, first, as a mosaic of pieces of glass each of one colour, fixed together in plaster, stone, or strips of lead, to make patterns or designs in colour; then different colours got in the same piece of glass by various methods; dark non-transparent colour burnt on to it, so that black lines could be drawn, or points and lines of light scraped out; or, again, part of the colour removed from the piece of glass in various ways and another colour substituted; then new colour added to the original colour of the glass—by a yellow stain on white glass, or on blue glass producing green, and by enamel—pounded glass of a different colour melted on to it—so that at length, instead of being, as at first, a mosaic of small pieces of different colours, the design could be painted on a single sheet as a painter lays his colour on a canvas—a practice which resulted in the ruin of the art. As to when these various methods were invented, and their influence on the development of the art, the reader must refer to the book itself. They are the pallet of the artist in making a coloured window; and Mr. Day thinks that they are capable of producing results which have not yet been obtained or attempted. If so, there is hope for fresh interest and better results in the art than have been attained in the attempts since its revival in recent years to reproduce windows like old ones.

The charm of glass as a vehicle for design is its brilliancy of colour and its range of light and darkness. In a water-colour drawing the brightest light is the white paper, the deepest dark black paint, which at its darkest reflects some light. In a window the scale ranges from the pure light of heaven to absolute dark, while the colours, instead of being reflected from the paper, are light itself transmitted through the glass, brighter than any jewel. In modern windows this brilliancy of the pallet has too often proved a snare—torturing the eyes with its harshness and crudity. Harmony in colour, of a sort, may be got in decoration or paintings by dulling every colour; but we seem incapable of producing the harmony and the brilliancy of pure colour combined of Persian tiles, or Eastern carpets, or old stained-glass windows. The last may owe something to the iridescence produced through the action of the atmosphere for centuries; but no possible change from that cause will make bearable too many of our modern

windows. We have got the old materials and methods of work, and new ones as well, but we do not know how to use them, and the art and taste and feeling for colour which guided the old artists seem to be gone. To discuss the reason for this would lead us away from the subject of this book. "The ideal craftsman," says Mr. Day, "is a man familiar with good work old and new, a master of his trade, and an artist as well; a man too appreciative of the best to be easily satisfied with his own work, too confident in himself to accept what has been done as final." He may be all that, but to raise the art to its old excellence seems too heavy a dead lift for any one man.

Book II., on "The Course of Design," treats the subject historically, describing the style of the glass in each period of Gothic Architecture with the varieties in the several countries of Europe:—

"Glass follows inevitably" (says Mr. Day) "the style of architecture of the period, and accordingly is divided broadly into Gothic and Renaissance. . . . The Gothic into three periods, early, middle, and late, corresponding roughly with the thirteenth, fourteenth, and fifteenth centuries; the Renaissance into early and late. These styles overlap one another, and earlier glass exists of the twelfth, or even of the eleventh century. . . . We may choose to divide Gothic art into three classes, as we may subdivide the spectrum into so many colours; but the intermediate shades by which they graduate each into the other defy classification" (p. 156-57).

The early windows were broad, single lights, undivided by mullions, the glass mosaic in design, small pieces leaded together to form patterns, helped out by painting in non-transparent brown lines—either rich in colour or "grisaille"—in which "the glass is chiefly white or whitish, relieved here and there by a line or a jewel of colour; the glazier designed in lead lines, and only used paint to fill them out."

In the thirteenth century design took the forms of (1) the medallion window; (2) the single-figure window; (3) ornamental grisaille. Each of these forms of design Mr. Day treats of, giving numerous illustrations to make his text intelligible, and without these it would be useless to attempt to follow him. The design was largely determined by the necessity of iron bars to hold the glass in its place and to resist wind pressure; these, instead of their simplest form of a straight bar across the window, were arranged in circles, squares, or pointed ovals which formed the frames of figure subjects—the figures necessarily small—the interstices filled with ornament.

"With the change" (says Mr. Day) "which came over the spirit of later thirteenth-century architecture, some new departure in the design of glass became inevitable. . . . In France the broad Norman window was felt to be too broad, and so they divided it into two by a central shaft or mullion of stone. In England it began to be felt that the long narrow lancet lights were too much in the nature of isolated piercings in the bare walls, and so the builder brought them closer and closer together, until they also were divided by narrow mullions."

In this statement of the rationale of the development of Gothic architecture, I think Mr. Day mistakes the cause for the effect. The walls of churches were not bare; they were covered with ornament so bright in colour—as at Salisbury, when discovered under the whitewash at the restoration of the Cathedral—that it was restored in toned down, washed-out tints, as it was thought the brilliant colour which had been found would shock modern taste. They loved bright colour, and stained glass was brighter than wall painting, and thus the development of Gothic architecture consists in turning walls into windows that they may be filled with stained glass, till at last the interior is a continued surface of stained glass, broken only by the piers which support the vaulting, which are set at right angles to the wall, that the necessary strength may be obtained with the least interruption of window surface. Each bay became one large window, following closely the line of the vault, the mullions not running straight up into it (that was reserved for a later development), but sympathising with its curves by twisting into "tracery," which, ornamented by cusps, took the forms of flowers and leaves. At last, in France, the cusps were cut away, as interfering with the design of the pictures in the glass. Dante Rossetti, when designing a picture for a stained-glass window in a church, once asked me if I thought the architect would be offended if he asked him to cut away the cusps, as he could make a better design for his picture if they were away. As Rossetti's picture was a more interesting work of art than the architect's regulation cusps, I said the architect would do well to remove them. From the interesting account Mr. Day gives of the excellence and beauty of the pictures in late French Gothic windows, he may perhaps consider that the difficulties which Rossetti felt may have influenced their painters also, and may account for the absence of cusps in late French tracery; so that, in this case again, it was the stained glass which determined the evolution of the architecture. When Wren's Church of St. Michael, Cornhill, was gothicised, one of the circular windows was left without the spokes by which the others were converted into wheel windows, that it might have a clear field for stained glass. The stained glass in the church of Gouda, in Holland, is the latest blossom of the art. Mr. Day says:—

"Nothing equal to it, *in its way*, was ever done, and there any attempt at beauty of architecture and tracery has disappeared, the mullions run straight to the top of the arch across the pictures, mere bars to hold the glass in its place, not intended to be seen. As stained glass had helped to produce Gothic architecture, so by windows like these it helped to ruin it. They were false in their methods of work, attempting in glass the triumphs of painters on canvas; and the imitators of the Crabbeths of Gouda, following their defects, and without their genius, ruined stained glass also."

In the end of the early and the beginning of the late Gothic there was much admirable figure painting, of which the examples given in the book, though necessarily only in black-and-white, show something of the beauty. Stained glass, not easel pictures for sale, was the vehicle for expressing the art of the best artists of the time, and they did not, as later, attempt to torture the art into modes of expression of which it was incapable. In the windows of the middle and later periods canopies over single figures and subjects constitute the larger part of the design.

"In the fourteenth century tall, brassy, disproportioned tabernacles, as yet flat fronted; in the fifteenth white ghosts of masonry, pretending to stand out over the figures; in the sixteenth more or less monumental structures pictured with something of the solidity of stone-work; and eventually the canopy is merged in painted glass architecture, which joins itself as best it can to the actual masonry." "Late German canopies are more leafy, less architectural, than French or English. Italian canopies are coloured, as are also some in France.

"The enormous value of the mass of white afforded by the canopy as a setting for colour has reconciled us too readily to its use. But why not this mass of white without pretended forms of masonry, without this paraphernalia of pinnacles? The architect alone, perhaps, likes canopy work. Supposing him to be an artist, as we have a right to expect him to be, were he to work on more workmanlike lines, more on the lines of the worker in glass, how much better he would do, being an artist!" . . . "One other class of person also loves canopy work—the tradesman. The stock canopy (as everyone knows who has been, so to speak, behind the counter) is a famous device for cheapening production." . . . "There is no reason why figures and figure subjects should not be framed in ornament, but not ornament in the likeness of architecture."

We shall all look with favour and interest to what Mr. Day may produce on these lines, and heartily congratulate him on making a new departure giving new interest to his art. But if it is a sin to use the forms of architecture as ornament, it is a sin which Gothic, and other styles also, constantly commit. What else is arcading, or the diapering—imitating stone jointing in Gothic wall decoration—or the triglyphs of the Doric order, or other forms of earlier wooden structure, imitated in stone? These may serve better their purpose in the architecture, and have a nobler effect in the design, than imitations of prettier things, like leaves and flowers.

In his chapter on domestic glass, of which there are some charming illustrations, Mr. Day says that while the same methods of glazing and painting are common to it and church glass, the church calls for breadth and severity of design, the house for liveliness and delicacy, and "so far from the glazier of the sixteenth and seventeenth centuries imagining, as we mostly do, that it was any part of the purpose of domestic glass to shut out the view, he employed glass which was absolutely transparent."

Book III. consists of discussions on subjects which, if taken by the way, would have hindered the narrative. There is a most useful essay, sum-

ming up, in convenient form for reference, the characteristics of the various styles which have been described in the book. In another he pleads for emancipation from the practice of being compelled to copy the old style in our own work:—

"So many of us only learn to copy, whereas the whole use of copying is to learn." . . . "Our affectations of old style would be much more really like old work if they pretended less to be like it. Had the old men lived nowadays, they would certainly have done differently from what they did." . . . "The problem is to produce the best glass we can." . . . "Evidence of modernity is no sin, but a merit in modern work." . . . "We never wander so wide of the old mediæval spirit as when we pretend to be mediæval and play at Gothic."

All honour to Mr. Day for these views; if he and others will carry them out there is some hope of our being spared the excruciating crudities of modern imitations of early glass, and the lifeless dummies of apostles and saints, which their authors obviously neither care for nor believe in.

The chapter on "Windows Worth Seeing" is a guide-book of stained glass for the traveller.

The last chapter is a wail of lament:—

"Of old windows the arch enemy is the restorer. . . . The story of destruction repeats itself wherever the restorer has his way. Sometimes he has actually inserted new material if only the old was cracked, obscured, corroded, effacing the very qualities which age has added. . . . Better than what is called restoration, the so-called brutality, in reality the good sense and truer sense of art of the country mason, who plasters up gaps in church windows with mortar, or the plumber's patch of zinc which keeps out the weather and the crude white light, leaving us in full enjoyment of the colour and effect of old glass.

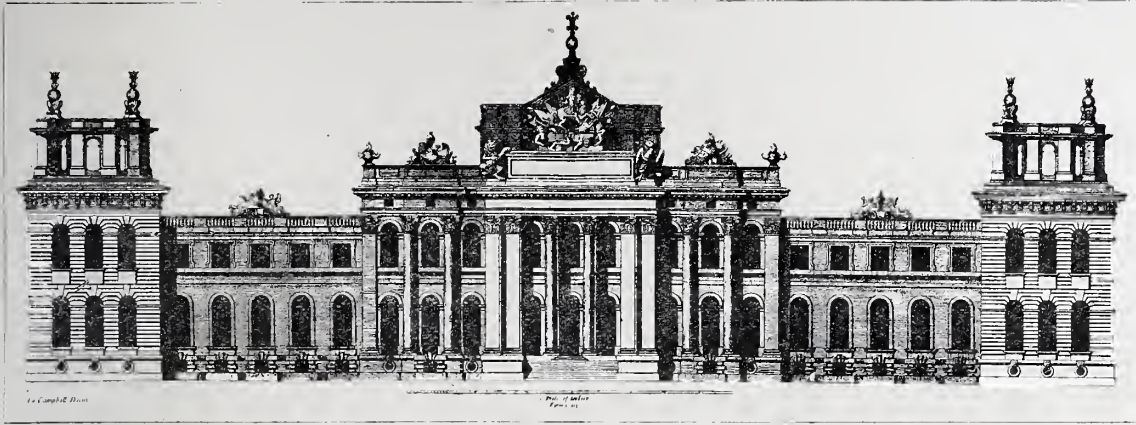
"Better any disfigurement by leads than the least adulteration of old work; how grateful we are when it is only cobbled, not restored."

When will architects understand this, and that it applies to the records of history and the effects of time in the rest of the church as well as the stained glass?

One word as to the illustrations, which in number amount to 257. Though the author says their intention is to illustrate what is said, not to beautify the book, many of them are very beautiful. "Theoretically," he says, "they should be in colour." But that was out of the question. "It may be possible, though it has hardly proved so as yet, to paint adequate representations of coloured windows, but only at a cost which would defeat the end in view." In black-and-white they serve their end of illustrating the text. They give a good notion of the various styles of ornament and composition, of the various styles of windows, and some of them even a sense of colour.

I have not attempted a complete account or criticism of the book. But enough I hope has been said to show its interest and value, and to induce readers to go to the book itself. They will not, I think, be disappointed.

J. J. STEVENSON.



Elevation of Blenheim towards the Garden. (From *Vitruvius Britannicus*, vol. i.)

THE POSSIBILITIES OF AN EIGHTEENTH-CENTURY REVIVAL.

By ARTHUR T. BOLTON [A.],

Soane Medallist 1893, Institute Essay Medallist 1895.

WHAT to do with the eighteenth-century style seems likely to prove the opening architectural problem of the twentieth century, as the intervening years would seem too short even to start a newer current of fashion than that which now sets so strongly in the direction of what, in ordinary parlance, is alternatively described as “the eighteenth-century” or “the Georgian style.”

Every year of late has seen this increasing tendency, though it may be only by looking back ten or twelve years that the change both in the ideas and in the attitude of the student towards the work of that epoch becomes clearly evident. Mr. Blomfield’s recent book, however, as being the first serious attempt to grapple with the whole subject of the English Renaissance from the architectural point of view, may, though its real aim is to favour an earlier century, prove all that is required to direct many architects to the latest revival.

Practitioners who would otherwise never give the time and study necessary to convert what are ordinarily somewhat hazy ideas, as to the achievements and aim of the architecture of that epoch, into a serious and working knowledge of the capabilities of the style, will be drawn by this and other such publications into the current of fashion that is leading clients to require the work in hand to be in “the Georgian style.”

It may be supposed that *Vitruvius Britannicus* has advanced in value, and that the kindred books of the same period now stand in a very different estimation from what they did, say, twelve years ago; while, as regards the buildings themselves, it is quite curious to read the flattering notice in Mr. Blomfield’s book of such a work as Prior Park, when one can remember the contempt in which it was openly held but a few years back.

The present question, however, is, what can be expected from a revival of eighteenth-century architecture; to judge of which prospect some regard must be paid not only to the characteristics of that epoch, but also to the purpose to which that style as revived is likely to be applied. One would be inclined to state that pre-eminently the work of the eighteenth century was house building. It is the great mansions that first suggest themselves to the mind’s eye as the achievements of the style—Castle Howard, Blenheim, Houghton, Goodwood, Hotham, Kedleston, Prior Park. All crowd into the memory as definite impressions of architectural

conceptions, that created some effect in our minds, whether favourable or the reverse. It was of such a house that Sir Gilbert Scott, speaking in fact of the garden front of Stowe, with its great octastyle Corinthian portico upon a lofty flight of steps, could, in later life, record, "I well remember the kind of awe with which the stately approach inspired me, and how vast it appeared to my young imagination."

The real character, however, of the great house of this epoch can scarcely be better drawn than has already been done by an eighteenth-century writer himself, for the solid sense of Dr. Johnson made him a veritable "Daniel come to Judgment" upon these profuse erections. The account commences—he attacked it violently—"It would do excellently for a town-hall: the large room with the pillars would do for the judges to sit in at assizes; the circular room for the jury chamber; and the rooms above for the prisoners." It would almost seem, in fact, as if the passage was prophetic, that the Doctor had foretold the true intent and destination of the style which time to come was to develop and justify, for it would appear that to the municipality is due the resurrection of the style, that there is something akin to the dignity of alderman and county councillor in the solid qualities, which extend even to dulness, of the eighteenth-century mansion.

If this anticipation of the application of the style should prove a true one, it would be a valuable corrective to the rather exhausted possibilities of scientific planning: for a vestibule, a hall, good staircase, and straight corridors, with rooms on either side, about sum up the achievements of the century in that respect. It would be appalling heresy, perhaps, to suggest that, after all, in a block of offices the rooms might as well have one label as another, though one may have a suspicion that this is about what it amounts to in a few years' time—what with reorganisations, new developments in work, and changes of the primary intention for which the building was erected. Something of this sort exists elsewhere, when one official plan is found much like another, so that a foreigner is somewhat indifferent to the local use of the building, provided that he is impressed by the stateliness of the approach, the grandeur of the hall, and the clearness and definiteness of the disposition of the interior. As we saw above, Dr. Johnson could suggest off-hand a totally different use for Kedleston, while Blenheim has many of the qualities of a State museum.

It is certainly a little difficult to see who is going to erect such stately mansions for his own occupation. In the eighteenth century these extravagances were possible from the tripled value of the land, and consequently of the rentals of the country gentry, while a new system of agriculture had spread wealth through the farming classes. Green tells us that in the middle of the century the country positively grew weary of its monotonous prosperity. Such conditions scarcely exist to-day, though it is true we have sufficient millionaires already—and with African and other developments are likely to have yet more—men to whom the costly burden of such a house would be a trifle; but, then, the mere building would be nothing in comparison to the life to be led in it, the eighteenth-century house being but the reflection of eighteenth-century life.

To gain an idea of that life in its daily home aspect we could not do better than turn to the great novelists of the epoch, and glean from the pages of Richardson, Fielding, and Goldsmith some glimpses of the ideas and habits of the men and women who peopled these palaces. The first impression thus gained will be that of the contrast to our present existence, of the leisure that was theirs, freedom from the whirl and contest of present-day society. Why, the very length of the novels themselves is appalling to the most leisurely of modern readers, and is sufficient of itself to seal up such tomes from the curiosity of this generation.

"How will you bestow your time," asks the owner of a *Bedfordshire* and a *Lincolnshire seat*, of his lady, "when you will have no visits to receive or pay, no parties of pleasure to join

in, no card-tables to employ your winter evenings, and, even as the custom is, half the day summer or winter?" Three or four of the neighbouring gentry calling upon him at midday he describes as "horrid drinkers"; and complains, "I sha'n't be able to get away not to-night perhaps; for they have nothing to do but to travel round the country and beat up their friends' quarters all the way; and 'tis all one to them whether they stay a night or a month at a place—they are like a snowball, and intend to gather company as they go, to make a merry tour of it for some days together."

Such jaunts would seem the outcome of an existence that otherwise consisted of an early rise at about six, a walk in the garden, "a sweet airing in the chariot," the arrival of visitors about twelve, followed by refreshments in the garden alcove, dinner about two, cards and a dish of tea for the afternoon, then a ride or "airing in the coach," with a return to supper at nine, the day ending in a final departure of the company at eleven, when they were in a position to do so.

Such is no unfair illustration of the essential frivolity of the epoch. Neither in architecture nor in other arts was there by the end of the century any depth of judgment or conviction, so that there is no harshness in Mr. Blomfield's application of "frivolous" to the work of the fashionable architect of that day. Of this frivolity as it affected architecture we get glimpses in references to, or attempted descriptions of, buildings, that occur in the novelists' pages. Probably the "tasteful Grecian" pervades the large house, a country villa is a "sweet, rural, and convenient place," the farmhouse is "truly neat," while an air of romantic grotesqueness is as much sought after as the black boy whom every lady of quality required to attend upon her.

A further affectation of "life according to Nature," filtered through the pages of Rousseau, leaves a mark on the contemporary fiction. It met with stern treatment from Johnson, as in the well-known passage where he exposed its nature by a transfer to the animal creation of the sentiments expressed. But all these sentimentalities are reflected in the final stage of the decay of the Anglo-classic style, for it is well to remember that the eighteenth century has its Chinese phase, and all but includes the Hindooism of the Pavilion, as well as the romantic plasterings of Strawberry Hill. Just as in its literature, though the age can boast of Fielding, the thoughtful student of nature, it has to own also to the writer of the empty nonsense of the "Castle of Otranto." The century, however, had opened in a different vein, and if we look at the external aspect of the age, it is curious to note that the outburst of national energy, that culminated in the glories of the field of Blenheim, had a parallel phase in the fortunes of the Anglo-classic. The genius of Churchill finds a counterpart in that of Vanbrugh, the one architect who, with all his faults, so palpable to the everyday critic, had some conception of what has to be done in any attempt to reconcile the inherent romantic element of the race with classic traditions that are the outcome of education and training.

If the revival of the style, as such, were likely to have any permanent outcome, it would be by the taking up of the problem at this point; but genius is required to fuse two such conflicting forces in a palatable compromise. It would be but in harmony, however, with the best traditions of Anglo-classic, which is in essence a hybrid, for the classicism of St. Paul's, for instance, is but skin-deep, as, it may be alleged, will be that of any genuinely English work.

To make sure of this conclusion, it may be found not a bad test to take the opinion of some student or critic of Latin origin, whose judgment of English architecture will be found usually at fault, and, to our thinking, even perversely so, in his neglect of what we admire, or selection of that of which we take little account. Again, in another way, see how, in Italy, the portico, or dome, or other simple element in design, will suffice for centuries of architectural treatment, which is expended in refining its detail without demanding that extension of its forms which the romance of English taste demands from our designers.

Average English judgment of eighteenth-century work, straying, as it does, from the true classic standpoint, would be that it is dull; and it may fairly be alleged that it was the want of natural outlet that made the Greek, the Chinese, and the Indian as well as the "Monastic" so much in demand at the close of that century. Even now some candid architect will tell you, supposing his education to have been a free one, that he does not see much in the Georgian: that it has, for instance, only three kinds of window—the square, the circular, and the venetian; and with such an attitude of mind little development on pure classic lines is to be looked for. Again, for the limitations of eighteenth-century work, taking a small country or suburban house in all its stages of growth up to the appearance of the great architect who has revolutionised domestic architecture, can we decide that the Grecian, the rural Italian, the Gothic, and other variety villa, was in a hopeful case?—nor do the pages of all *Vitruvius Britannicus* afford us much insight into the future possibilities of these relinquished experiments.

Turn, also, for a moment to the corresponding class of town houses. At this period took place a remarkable growth in the population of the great towns, manufacturing trade commenced that expansion which was to make it the paramount industry of the kingdom. We may take Harley Street and Gower Street as falling within the period, and admit that such work is in favour just at present; but still, honestly, as the work itself is honest, can an intelligent student call it other than dulness architecturally personified? It will be readily granted that there are details of homely workmanship of considerable interest in the lead fanlights, in the iron railings, and in the joinery; and, further, that the houses have the quality of unpretentiousness; but, still, how much of this has the merit of intention? And what is to be put down for the value of a direct negation of our present-day faults?

One may very well doubt if the verdict of the next century will materially modify the older impression that dulness is a quality almost inseparable from eighteenth-century work. It was but a reflection of the general condition of the people at the time: it was a period of consolidation, of domestic politics, and of home life. Of the first two Georges we read that their characters as nearly approached insignificance as it is possible for human character to do; and of Farmer George, that life at Court was as uniform as a monastery, such a cloud of dulness reigning there as plausibly to account for the follies of the English Sardanapalus who succeeded him.

The very appearance of the novel marks the eighteenth century, and in its characteristic form of interminable letters illustrates the leisure and ease of the life of the time. It was an age of social arts, refinement being the word in most constant use. To be recognised as a person of quality, of mode, of town air, as contrasted with rusticity, other than assumed for the sham pastoral craze, was the constant ambition of the characters of the piece, and the interiors in which this drama of life was played bear the same stamp. If we are to have a genuine revival we should need some such conditions to be present once more; but of the probability of that the writer leaves any more up-to-date reader to form his own impression. One final aspect, and not the least important—who will give us the better side of the work of this epoch: its highly trained artizans, honest work, and superexcellent finish? There are no genuine eighteenth-century houses to be had at 9*d.* cube, with Swedish joinery and German-made fittings; while, to touch on a more delicate topic, the Young Duke of a slightly later epoch may have found "Sir Carte" somewhat heavy, with his everlasting quotations from "Palladio and the ancients"; but he would have readily recognised the solid study and extensive travel that equipped such a last representative of the eighteenth-century school.

Everyone of course does not want a genuine revival, just as not many under stress of constant competition, whose primary principle can hardly be other than that of the saving merit

of success, could adhere to those lines of architectural development that to-day seem, to the thoughtful, to be the most promising, namely, those proceeding from the conditions of each problem, the ideas it suggests, and the nature of the materials in which it has to be carried out. In all revivals there are those who think that all the old conditions can be reproduced, who see no reason to step beyond precedent and are not open to compromise; those, again, who sincerely believe in the style as a starting point for development; and, finally, those who merely catch at a fashion and are only too glad to affix any convenient label to the current business of the day.

SOME OLD ITALIAN BUILDING ACCOUNTS.

By WILLIAM SCOTT,

Qualified as Associate 1870, Silver Medallist 1875, Soane Medallist 1877, R.A. Travelling Student 1878.

LAST year, while engaged in researches among the old documents of some small mountain towns or villages of the Italian Riviera, there came under my notice a number of items relating to building accounts of two or three centuries ago which may possibly have an interest at the present day, partly for their own quaintness, partly as giving an insight into methods formerly in use, and partly as showing at all events the cost of labour and materials so long ago. The books and papers in question, courteously placed at my disposal by the authorities, were the municipal or communal records of the various villages, and the items referred to had usually to do with repairs to or construction of the public buildings, such as what we should now designate the town hall (*casa or cassa dell' università*), the fountain, the oven, above all the oil mill, and sometimes the church and priests' house (*casa canonica*).

The caligraphy of these documents is often very difficult to decipher; a fact not surprising if we consider how small were the educational advantages of those days in out-of-the-way places; and the orthography gave still more difficulties, being not only founded on the curious *patois* of the district, but very often regulated by phonetic considerations rather than by knowledge. It must also be remembered, in further explanation, if not justification, that the secretary's salary only amounted on an average to something less than four shillings a year! True it is that in many cases the whole year's statement of accounts did not occupy more than a couple of small pages for both income and expenditure, and often did not come to the equivalent of a dozen pounds of our money; but we find none the less interest in them because many of the payments were then still made in kind instead of cash, because the coins and measures in use were of a perfectly bewildering variety, and because the little communes borrowed and lent, got into debt or disgrace, or indulged in trifling jobbery, speculation, and law-

suits, much in the same way as bigger ones have done elsewhere.

Architects, as we understand the term, apparently had no existence in those days of simple elementary life and manners; at all events we find no mention of the name; but the *maestro*, or master-workman, was looked after when necessary by the *perito*, or expert, probably a master-mason himself, very often brought from a distance to give him that enchantment of honour which was of course wanting to the local prophet in his own country. These *periti* were paid by time or by visit, and their fees do not seem to have been extravagant. Even at the close of the last century (1799, to be quite exact), when the parish church of San Biaggio was in need of repairs, the president of the communal council proposed a resolution to the effect that the building should be examined "by two *esteri periti* (experts from a distance) to provide against the rain, which penetrates into the interior of the said church, and that there be assigned to the experts the suitable fee (*congrua mercede*) which they have asked for in three *lire* each" (say half-a-crown). That this fee was not excessive we may gather from the fact that nearly half-a-century earlier, in 1755, when Perinaldo wanted a public lime-kiln constructed, and some repairs done to the "Piazza," a *maestro* was sent for across the hills to Pigna, his fee being six *lire*, and a messenger was employed at the cost of ten *soldi*, half a *lira*, "to induce the said *maestro* to come" (*per risolvere detto maestro a venire*).

The kiln was carried out, inaugurated with suitable functions, and duly provided with the blessing of Heaven, for we have an entry: "Ditto to a priest for the Benediction and Mass for the prosperity of the furnace, 18 *soldi*."

The liberality of the clients of those days is hardly surpassed even now, for at the same time is noted the provision of "16 pints of wine at various times for the men who assisted"; but then wine was cheap, for the *pinta*, so far as we

can make out, equal to about a quart of our own day, only cost two *soldi*, say one penny.

Every little village had its own oil mill, known as "the edifice," and the word was spelt with reckless variety of form, *edifio*, *edefisio*, *deffisio*, *deficcio*, *de fisio*, &c., and not before the commencement of the present century do we find the modern appellation *molino da oglio*, but the old mills are still known as *i di fisi*.

The wages paid in those times are clearly traceable. At the end of the 16th century and the beginning of the 17th, a mason was paid one *lira* (20 *soldi*) per day, and a labourer received $\frac{1}{2}$ *lira* (10 *soldi*); but part of the labourers' work, especially in the transport of materials, &c., was done by women, who in 1598 were not paid more than 3 *soldi* per day, but in 1657 they had 5 *soldi*. Even to-day women are still similarly employed. By 1661 the masons' wages had risen to 1 *lira* 16 *soldi*, and even 2 *lire* per day, but the labourers were no better off than before. In 1647 a painter received 1 *lira* 4 *soldi* per day.

Building stone was found in the neighbourhood, and only required transport; but it must be remembered that no one of all the places we are considering had any sort of road beyond a mere steep mule-track, and most of them are still in the same condition to-day. The cost of transport was therefore an item of considerable importance, the charge for *bestie asinine* averaging 1 *lira* per day, which of course included the driver's services.

The neighbouring forests furnished an abundance of timber, while the lime of the district has always been excellent, and is so still. This lime was sold by the *mina*, a measure of 20 *rubi*, equal to rather over 3 cwt., and it cost 1 *lira* 10 *soldi* per *mina*. It now averages 5 *lire Italiane* for the same quantity.

The coins in commonest use were those of the Republic of Genoa, chiefly the *lira*, *soldo*, and *denaro*, the *lira* being equal to 20 *soldi*, and the *soldo* to 12 *denari*, the *soldo* having a rough approximation to our halfpenny. To this standard the other coins found in the district were generally reduced in keeping the accounts.

These old accounts were kept accurately enough to all appearance, though very casually, and are full of quaint, curious expressions, which, quite naturally, will have most interest for those who possess some acquaintance with Italian. There was a yearly audit by the commissioner or "capitano" at Ventimiglia, who ruthlessly disallowed any items he did not approve of, and ordered the officials to provide the amount out of their own pockets; but he was not above accepting a present for himself over and above his fee of 2 *lire*, even though the item was duly charged to the commune.

The various translations here offered are kept as nearly literal as may be, so as to preserve the

character of the original, even at the risk of losing something in elegance.

Each village offers its own special interest, though a strain of strong resemblance runs through all, and in not a few instances the documents have migrated from one place to another, as the will or interest of the authorities might dictate. San Biaggio, in the Vallecrosia Valley, may be taken as a typical example to commence with; and the earliest documents yet examined date from 1598. Here, on the *die* 22 *di frebaro*—note the curious inversion of the leading consonant, so characteristic of the Italian dialects generally—it is said:—

et piu p spesa allo defisio visto le liste di maestro lucha della spesa p nostra meita	And also for expenditure on the edifice according to the list of expenses of master Luke, for our half
£7 13 0	£7 13 0

It appears from many entries that communes were in the habit of allowing one of the people of the place to hold a half share in the mills, as implied in the above entry; and in one case a priest was so allowed, he being the highest bidder, and the cost of his half share being 290 *lire* 10 *soldi*.

This master Luke, whose surname is given elsewhere as Crovesio, was evidently the holder of a half share in the mill, and seems to have done as he liked with the property; while the commune paid not too willingly its share of expenditure for the repairs he had caused to be executed. There is an ominous entry of 1603:—

Piu dato a m ^o luca Crouesio p conto della spesa ch esso dice ha fatto nel edificio del universita rubi novi e libri tre oleo coputato a cavaloti 18 col doi il rubo.	Also given to master Luke Crovesio on account of the expenditure which he says he has made (!) in the edi- fice of the university, nine <i>rubi</i> and three lbs. of oil, calculated as 18 loads at 2 (loads) the <i>rubo</i> .
--	---

The *cavaloto* would usually be a mule-load, but it is evident that a smaller quantity is here meant, for instance, such as a person could carry in the hand. The commune, or village, was generally known as a university, though the exact origin of this application of the term we are unable to give.

In 1612 some dispute had arisen with "master Luke"—probably the same individual mentioned above—for when the authorities wanted to put a lock on the "edifice," according to the orders of the "Capitano" (an official from Ventimiglia, and of considerable authority in the district), "master Luke" objected, as we see below:—

Itẽ dato ha maestro bernardino amarberto p andare una mattina p met- tere la chaviadura allo defissio, come ha ordinato lo capitano et maestro lucha nõ ha voluto, et cossi i se dato a esso soldi sei	Item given to master Bernard Amalberto for go- ing one morning to put the lock on the edifice, as the Captain has ordered, and master Luke wouldn't have it, and so six <i>soldi</i> were given to him.
£0 6 0	£0 6 0

This dispute with "master Luke" became so serious that there was an appeal to the court at Ventimiglia, with the result that an injunction was obtained against him; but he also managed to get an injunction against the "Priori," or superior councillors, and history is silent as to the final result.

In 1618 *Bernardino* has been succeeded by *Pietro*, possibly his son, and an account runs:—

Si sono datti ha mo. Pietro amarberto per sua fatica allo tetto della cassa della universita p calsina mine doe valle cõ suo porto lire quatro soldi octo	£4 8 0
---	--------

There has been given to master Peter Amalberto for his work on the roof of the Town Hall (lit. house of the university) for lime, two *mine* worth with its carriage four *lire* eight *soldi*

£4 8 0

p porto delle pietre p lo guõbo dello defificio	£1 0 0
---	--------

For carriage of stones for the repair of the edifice

£1 0 0

andare a dosaigua p acõsiare la chiuadura allo forno alla porta	£0 4 0
---	--------

Going to Dolceacqua for the mending of the lock to the door of the oven (bakery)

£0 4 0

p mietta delle pietre dello guõbo dello defificio lire tre dico	£3 0 0
---	--------

For half the stone for the repair of the edifice three *lire*, say

£3 0 0

An expert's certificate about the public oven, or *forno*, may be worth quoting, especially as it bears, not his signature, but that of the communal secretary, in the same way that many of the receipts were drawn up and signed:—

1682 alli 23 Ottobre. Io Mr ^o Gio Bartolomeo Biamonte sono [stato] arevedere lo forno dell'universita essendo stato richiesto dalli ufficiali e lo trovo in ogni perfesione per cocire il pane, e quando lo detto fornaro usirà lo debba rimettere come ha trovato in fede	1682, on the 23rd of October. I, Master John Bartholomew Biamonte, have [been] to examine the oven of the University, having been requested by the officials, and I find it in perfect condition for baking bread, and when the said baker shall leave he must reinstate it as he has found it. In witness whereof
---	--

Paolo Maccario. Paul Maccario.

This expert's fee for the examination and certificate was 10 *soldi*.

Only a quarter of an hour's walk further up the valley, the village of Soldano provides us with more documents and interesting records. The irreverent may smile at the conciseness of such an entry as the following:—

li 24 Marzo 1647 Dato di Caparro a uno maestro che ne imbianchiscie la madona una dopia firensa	£15 10 0
The 24th of March 1647 Given as a deposit to a master [workman] for whitewashing the Madonna one double <i>Firensa</i>	£15 10 0

piu p dati a li maestri p conto dela madona	£29 5 6
---	---------

Also given to the workmen on account of the Madonna

£29 5 6

Fortunately there is no doubt that the white-washing here mentioned was for a church dedi-

cated to Our Lady, as an entry of a few years later runs thus:—

piu speso p la frabrica dela madona in maestranzia e giornate di omeni in tuto	£28 8 0
--	---------

Also spent for the building of the Madonna, in workmanship and men's time, in all

£28 8 0

e piu a d ^a frabrica tra legniami e schiodi in tuto	£17 14 0
--	----------

And also, in the said building, for wood and nails, in all

£17 14 0

All these villages being entirely surrounded by walls, the gates needed frequent repairs. In 1656 we have:—

piu speso in fare le porte numero tre tra taole traveti e schiavature insieme la fatura dela porta dela piasa tra lauorta e carzina e maestro in tuto	£35 13 6
---	----------

Also spent in making the gates No. 3, for boards, scantlings, and fastenings, together with the work on the gate of the Piazza for vault [? arch] and lime and master [workman] in all

£35 13 6

The church was usually repaired at the expense of the commune:—

1659 piu speso a consare la giesa scioe in carsi[na] maestranza e servitu di omini	£15 11 0
--	----------

1659 Also spent in repairing the church, that is, in lime, workmanship and men's help

£15 11 0

The quaintness of the following entry of 1661 is undoubted:—

speso a inschiapala logia tra maestro e carsina e vino	£3 13 0
--	---------

Spent for paving the loggia between workman and lime and wine

£3 13 0

The same year saw a new pavement laid in the church:—

piu carsina p da lo battume de la giesa mine cinque	£6 0 0
---	--------

Also lime for making the *battume* of the church five *mine*

£6 0 0

This *battume* was the name given in former times to the pavements, made of *calce nera* (hydraulic lime) and rather coarse sand (*sabbia*), which were laid about two inches thick, and then beaten with canes for two or three days (hence the name). When the work had hardened somewhat it was beaten again and finished with a smooth flat instrument of wood. Some of these pavements are still to be found here and there in houses and churches, and they resemble marble for hardness; but work of this class does not succeed nowadays. It has been superseded by the ordinary cement floor; yet the word *battume* still remains in use as the name for concrete, like the French *béton*.

In 1672 stormy times were at hand for the little village of Soldano. The "officers of war" were ordering everything to be got in readiness for defence, and the communal council had to have recourse to a loan. The following entry will be found interesting:—

Dovendo reparare il luogo del Soldano p causa delli nimici cõ far le porte et provedare di quãto fa-	Having to repair the town of Soldano on account of the enemy by making the gates and providing
--	--

cesse di bisogno per ordine dell'ill^{mo} Sig. Cap^{no} fatto li 23 Luglio del 1672 sottoscritto dal Can^{re} Gioseppe filippi si habbiamo fatto imprestare £100 con il consentimento delli duoi tersi del luoguo comenepare p linstrumento fatto dal Sig Noaro £100 0 0

whatever is necessary, by the order of the Most Illustrious Signor Captain, made on the 23rd of July 1672, countersigned by the Secretary Joseph Filippi, we have borrowed [lit. made to lend] 100 *lire* with the consent of two thirds [of the representatives] of the town, as appears in the deed drawn up by Signor Noaro £100 0 0

fare le porte et redusar le altre porte del luogogiorate otto e mesa £15 6 0

ing the gates and altering the other gates of the town eight days and a half £15 6 0

p giornate di huomini e Serrare num. 11 et piu due d'huomo qualle agiutava a seicare le tavole al maestro £9 2 0

For No. 11 days men's time and sawing, and also two of a man who helped in carrying [lit. unloading] the boards for the master [workman] £9 2 0

piu p ciodi di novo fatti p le porte et agiontarne di gangari delle porte £7 16 0

Also for new nails made for the gates and adding hinges to the gates £7 16 0

Then follow items with regard to the new gates:—

p ferro p fare li gangari ossia ciavaisone delle porte uno rubo e meso £5 12 0

For iron for making the hooks or fastenings of the gates one *rubo* and a half [= about 27 lbs.] £5 12 0

p ciodi 100 e piu altri di pesso libri cinque piu grossi £6 3 0

For 100 nails, and also other big ones, five lbs. of bigger ones £6 3 0

p duoi legnami di pino p fare le porte et piu una rovere £5 13 0

For two pine trees to make the gates and also one oak £5 13 0

p maestransa in serrare [= segare] li sud^{ti} legnami p

For workmanship in sawing the said trees, for mak-

It will be observed that the technical terms have a generic and indefinite character which adds considerably to the difficulty in translation; and even in the present day the differentiation has not been carried so far as with us, thereby often causing confusion in the mind of a student. To take a simple instance, *carsina*, the *patois* for *calcina*, is used, not only in its primary sense of lime, but also and usually for mortar.

(To be continued.)

REVIEWS. LXVIII.

(185)

HISTORIC ORNAMENT.

Historic Ornament: A Treatise on Decorative Art and Architectural Ornament, from Prehistoric Times to the Present Day. By James Ward, Author of "The Principles of Ornament." Fully illustrated. In 2 vols. 8o. Lond. 1897. Price 7s. 6d. each vol. [Messrs. Chapman & Hall, Henrietta Street, W.C.]

In treating this subject, Mr. Ward has set himself the task of outlining the history of decorative art as applied to architecture and the minor arts from the Old Stone age to the present day. Truly a wide range!

The author, conscious of the limits of a work of this nature, disclaims having produced anything more than a handbook for students and for those "who may desire to have an introduction to the fascinating study of Historic Ornament." Nevertheless, he has brought together in his two volumes an astonishing amount of concise and well-arranged information, which must be the result of much careful research and study in museums and libraries. In glancing through the illustrated pages, one cannot but be impressed by the evident universality of art, to which throughout the ages and in every clime man has turned as the next necessity to food and warmth.

The following passage from the Introductory Chapter indicates the spirit in which the study is to be approached:—

We learn from these examples that the successful designer of ornament should have a thorough knowledge of the historic styles, not for the purpose of reproducing their forms, but in order to discover for himself the methods by which the old artists arrived at the successful treatment of nature and of former styles, so that by the application of his knowledge, derived from the study of nature and the works of former artists, he may be enabled to give to the world some original and interesting work.

This is sound advice, and to it might be added that the study must be of the original works of art themselves, and that a book should be used merely as a guide to that study, or for reference.

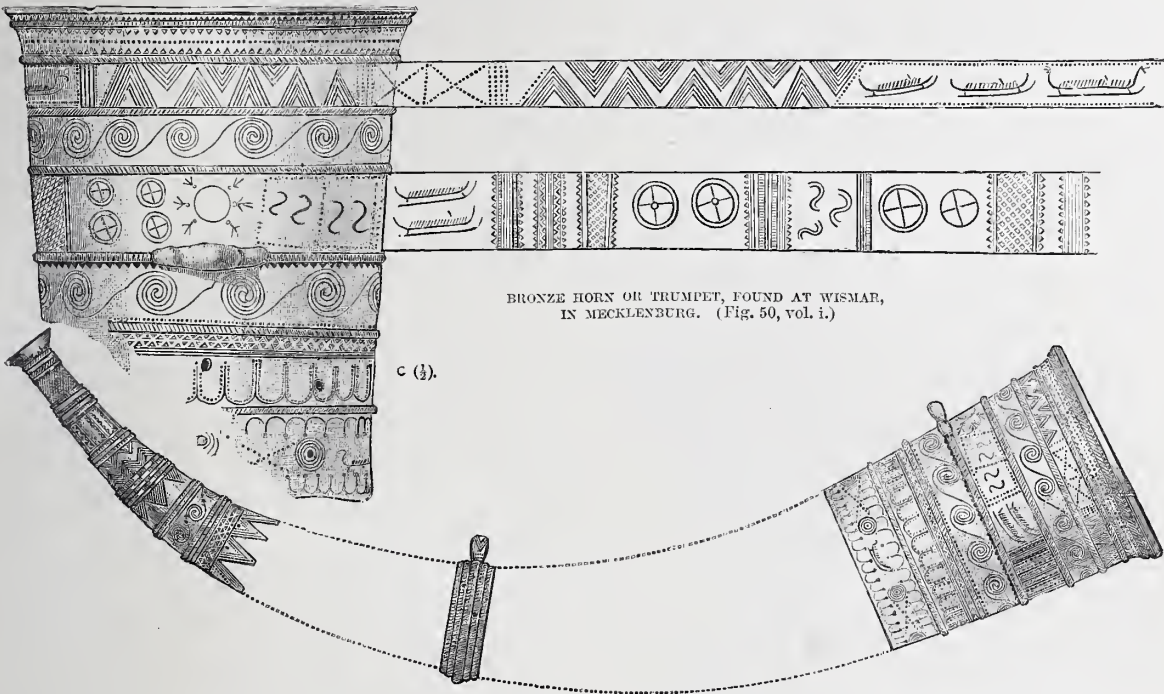
From the illustrations of the etchings on bone, representing various animals realistically treated, we gather that the cave-men of the early Stone age were a very artistic race, who had not yet acquired any symbolic art. All decorative art was originally derived from symbols, mostly with religious meaning, and from the entire absence of these symbols it seems possible that no religious system had yet been developed. Passing through the later Stone period, in which men were less artistic than their predecessors, though more skilled in the mechanical crafts, we come to the Bronze age, and it is startling to mark the extent to which religious symbolism, and therefore priestly science, had grown. In the bronze horn of this period, almost every part of the ornament can be referred to religious symbolism.

Worsaae thinks that this horn was used in the worship of the gods in the early Bronze age, owing to the great number of sacred signs engraved on it. Sun-wheels, sun-

snakes, and sun-boats, developed into spiral ornament, may be seen on it.

Similar ornament has been found in almost

themselves with the inventing of any origins for their gods, but simply borrowed them, as they did all their art, direct from the Greeks, merely

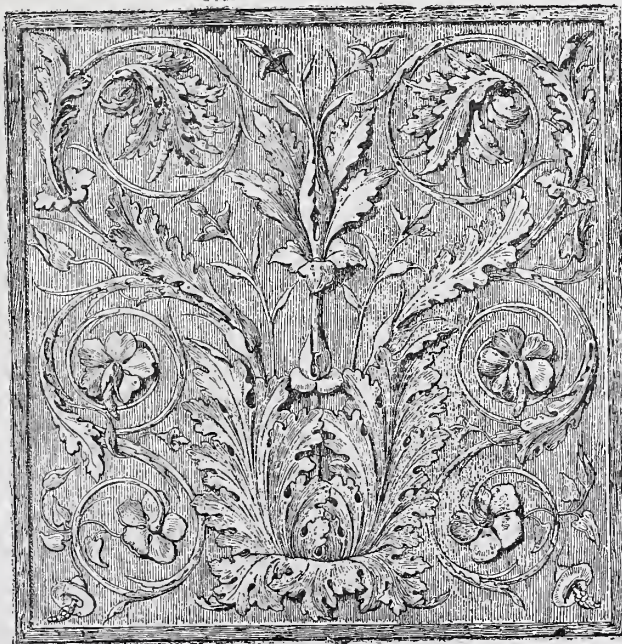


every part of the Old World except Egypt and Assyria.

After interesting sketches of the Iron age, and of the lake-dwellers and their art, we pass on to the greater historic styles of architecture and ornament which occupy the remainder of the first volume. To enable the student to grasp the motive of some of these styles, brief sketches of the religions of the races who originated them are given. But the reader is not always made to feel the living spirit of the faith which moulded and was moulded by the genius of the people, and without that spirit the dry bones, as it were, of the religion do not live. Nor is it quite true that the Romans "did not trouble

substituting Latin names for their borrowed deities instead of the original Greek ones." Or that "All historic art and architecture, whether classic or what not, since the days of Pericles, is

based on Greek art, notwithstanding the many modifications which we see in Byzantine, Saracenic, Romanesque, and their offshoots. All of them owe their life and vitality to Greek traditions and to Greek principles." The Greek attributes with which the court poets of the Augustan age invested their ancient gods did not materially influence the religion of the people, and very shortly after this age had passed, the old Roman style of arch construction re-asserted itself, and forced the Greek orders into mere



CINQUECENTO FLORAL ORNAMENT. ACANTHUS, OAK, CONVULVULUS, &C. (Fig. 424, vol. i.)

subsidiary ornament. In this parent of the Christian styles surely the main principle was Roman and the secondary Greek.

The architecture and other arts of the Egyptians, Chaldeans and Assyrians, Phœnicians and Persians are described, and many examples are given. These styles are always interesting, and contain much that was good art, but though it may be legitimate to borrow ideas from such exotic forms, nothing is more to be deprecated than copying from them, as is sometimes done, especially in the minor arts. Indian, Chinese, and Japanese architecture is lightly touched upon. Several good examples of Saracen arabesques and lattice-work are given. Considering their importance, the Christian styles are not very fully treated. The chapter on Renaissance is rich in specimens of carved panels, and contains a spirited defence of the arabesques of Raphael and his pupils in the Loggia of the Vatican.

The Cinquecento artists were better craftsmen than the Romans. The design and delicacy of finish on some of the sculptured ornament of the sixteenth century have never been excelled in any period of the world's art history. . . . It is cheap and plausible to say that a style is dead with the people who created it; but this is not what the artists of the sixteenth century said, and we know what they produced out of a dead style. By all means let us have originality, if it is good art, but let us have the good art first.

The second volume treats wholly of the minor arts, which were only touched upon in the first volume, and contains excellent chapters on pottery, enamels, ivory carvings, metal-work, furniture, textile fabrics, mosaics, glass, and the decoration of books. The account of pottery is a full one, with many good examples of ancient

and modern ware. The beauty of these objects depends so much upon colour, that black and white illustrations cannot give the full representation of them; but they form a valuable aid and guide to museum study.

The shapes of the Greek vases vary in the different periods, getting more elegant as they approached the middle period—the fifth and the first half of the fourth century B.C.—and larger in size with the handles more elaborate in the later periods. . . . Greek ceramic ware, like the Etruscan and Roman, was coated with a scarcely perceptible thin glaze, supposed to be composed of a vitreous alkaline that merely hardened the clay body and left a very faint polish on the surface. . . . The Greeks in their vase paintings observed strictly the æsthetic laws of proportion and space division as they did in their architecture. The precision of touch which they displayed is remarkable, and the skill in the freehand rendering of their geometric and floral borders, not to speak of their figure-work, is astonishing when we think that if they made a mistake on the absorbent biscuit ware on which they painted, it could not be altered without showing the defect.

Persia has been noted for its pottery from very early times, and it is probable that Persian workmen were brought to Spain by the Arabs, their work resulting in the Hispano-Moresque ware, famous for its beautiful lustre. The numerous Italian maiolica potteries of the fifteenth and sixteenth centuries were very famous, and the wares of Caffaggiolo, Pesaro, Siena, Gubbio, Urbino, Castel-Durante, and Faenza receive the attention they deserve, the illustrations being mostly of specimens in the South Kensington Museum. Della Robbia ware having been designed and executed for architectural decoration, would have been more appropriately criticised and illustrated in its relation to architecture. In the sixteenth century some Italian artists and work-



CHAMPLEVÉ ENAMEL OF GEOFFREY PLANTAGENET.
(Fig. 97, vol. ii.)

men set up potteries at Nevers and Lyons; but their productions, though similar in design and workmanship to the Italian, were generally inferior. A better class of pottery, and one thoroughly French in the spirit of its design, is found in the beautiful Rouen ware. The other French potteries, of which Sèvres is the most important, and the wares of Delft, Dresden, Persia, China, and Japan are described, and Lambeth, Fulham, Staffordshire (Wedgwood), Chelsea, Bow, Derby, and Worcester all receive notice, each style being illustrated.

Our attention is next directed to enamels, of which there are three varieties—the embedded or encrusted, the translucent upon relief, and the painted. The embedded has two varieties, the Cloisonné and the Champlevé, of which the former is the older, the ancient Greeks, Byzantines, and Chinese having employed it. In this method the metal foundation is hollowed out where required, and the design formed by thin gold ribbon cemented to the foundation, the spaces being filled in with vitreous enamel and fired. The Champlevé is made in a similar way, except that the gold ribbon is omitted. “The earliest Champlevé enamel of the Limoges school is that of the monument to Geoffrey Plantagenet, who died in 1151. It is now in the Museum of Le Mans.” This is an excellent example of Gothic design of this type, with its diaper and border and freely treated pictorial architecture.

In the chapter on ivory carving an interesting account of the Consular diptychs and triptychs occurs.

These Consular diptychs were originally made of wood or ivory, and were hinged tablets that folded over each other, the outside surfaces being carved elaborately, with a portrait or figure of the consul or chief magistrate of the province in the centre, the inside surfaces being used for writing purposes. . . . It was the custom of the consuls to send these consulars in the form of a diptych or triptych as a present to the bishop of a church in his province, to show his patronage and goodwill, and they were usually placed on the altar of the church in order that the congregation should see them and remember the giver in their prayers. This custom led to the making of the diptychs (*two-leaved*) and the triptychs (*three-leaved*), for the purpose of the altar decorations, and usually on the plain inner leaves were inscribed the names of the newly baptized Christians (*neophytes*), benefactors to the church, dignitaries of the same, and Christian martyrs. The use of these led to the later magnificent painted and carved altars of the triptych order in Christian churches.

The accompanying illustration shows a leaf of a Roman diptych beautifully carved in ivory, now in the South Kensington Museum. It was found at the bottom of a well at Montier-en-Der, and its fellow is in the Musée de Cluny in Paris. Under the heads of Metal Work and Furniture are shown various objects of art, specimens of Gothic chalices and candelabra, Greek chairs and couches, bronze tripods, Mediæval tables and couches, Renaissance, Boule, and Chippendale work. To the chapter on Textile Fabrics a section on Mediæval ecclesiastical

vestments would have been welcome; and that on Glass, though good as far as utensils are concerned, is meagre as to window glass.



LEAF OF A ROMAN DIPTYCH.
(Fig. 113, vol. ii.)

Enough has now been said to show the scope and nature of these delightful volumes, which, in spite of occasional crudeness in phraseology, are generally well written, earnest in tone, and entirely free from affectation. They cannot fail to interest and instruct the student and the scholar, the collector and the artist. J. HUMPHREYS JONES.

(186)

ROCHESTER.

The Cathedral Church of Rochester: A Description of its Fabric and a Brief History of the Episcopal See. By G. H. Palmer, B.A. 8o. Lond. 1897. Price 1s. 6d. [George Bell & Sons, York Street, Covent Garden, W.C.]

Of the admirable *Bell's Cathedral Series*, for the editing of which Messrs. Gleeson White and Edward F. Strange are responsible, "*Rochester*" is certainly not the best.

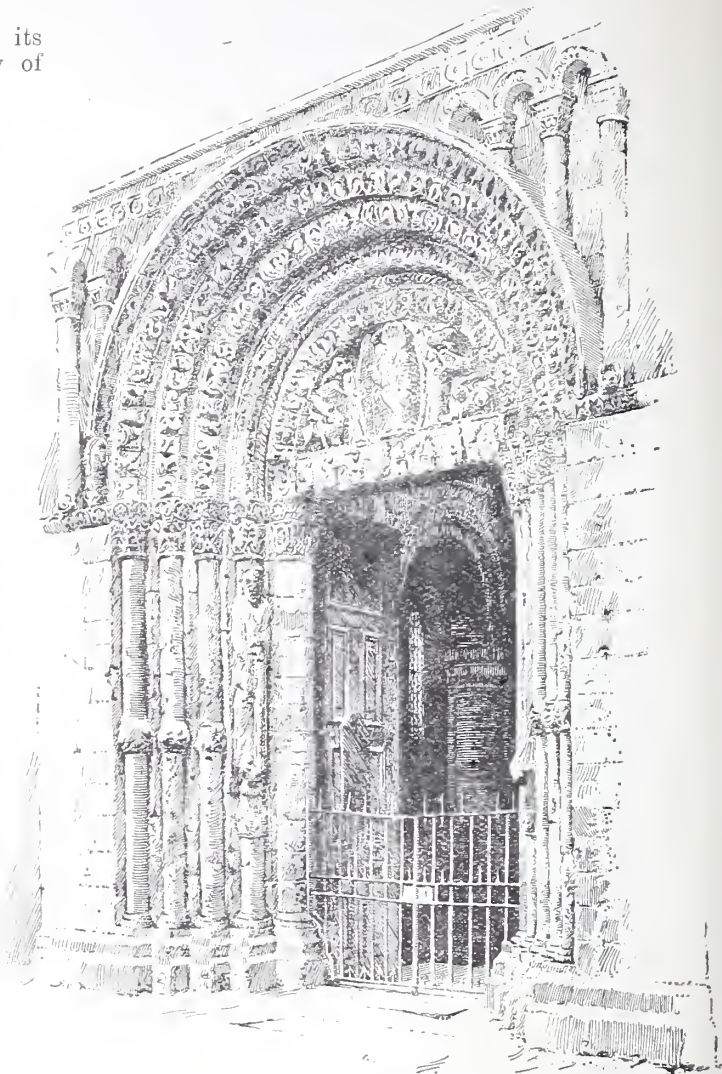
It may be said that, as Rochester's is not the most attractive of cathedrals, it is only fit and right that this history and description of it should

be less pleasing than the similar books of its fellow cathedrals. But as the least lovely of women needs to be the most careful of her attire, carriage, and deportment, it may, not without reason, be urged that an edifice whose charms are not of the greatest should have such as it does possess displayed to the best advantage.

It is not in the letter-press that this book fails to meet this requirement, but in some of its photographic illustrations, which, in several of the most prominent plates, are very dull and lugubrious productions, such as are unworthy both of the book and the building. One would think the photographer of such a view as that on page 36 was bent on presenting the venerable pile in its most drearily realistic light, utterly deprived of the happy play of sunlight and shadow which is specially delightful about old walls, while equally destitute of the clare-obscure mystery which naturally invests our most hoary fanes. Even more objectionable than the miserably dull view on page 36 is the photographic frontispiece; for here indeed we have sunlight itself represented with such falseness of effect (thanks to the ill-judged and most inartistic grouping of accessory masses of too near foliage in black shadow) as reduces Rochester Cathedral to the rank of a respectable semi-modern parish church, with no dignity of magnitude, no texture of antiquity, nor any gleam of romance to raise it above the most ordinary of commonplace. Indeed, the light is so rendered in this photograph as to convey the false impression of walls coated with smoothest and vilest of stucco, rather than faced with time-worn solid stone. It seems surprising that author, editors, and publishers should have admitted such soulless pictures into a book intended to foster that enthusiastic fondness for British cathedrals which is their best security against the ravages of time.

We reproduce an excellent drawing by H. P. Clifford of the famous Norman west doorway, which is regarded by many architects and archaeologists as one of the finest examples of its kind to be found either at home or abroad. This drawing goes far to redeem the book from the reproach of the unworthy photographs; and the description given of the doorway renders the drawing the more intelligible and interesting.

The great west doorway, like the rest of the original work remaining in the front, dates from later Norman times—the first half of the twelfth century. It is formed by five receding arches, and every stone of each of these is carved with varying ornamental designs. Between the second and third of them runs a line of cable moulding, an ornament which occurs also inside the door. Each arch has its own shaft, and the groups of five on each side are elaborately banded. The shafts have richly sculptured capitals, and in those on the south side, as well as in the tympanum, the signs of the Evangelists appear. The



THE WEST DOORWAY. (From a drawing by H. P. Clifford.)

shafts second from the door on either side are carved with statues, two of the oldest in England. These are much mutilated, but they were thought worthy of great praise by Flaxman. That on the spectator's left is said to represent King Henry I., and the other his wife, the "good Queen Maud." This attribution is probably correct, as these sovereigns were both great benefactors to the Cathedral, and were living when the front was being built. The figure of the Queen has suffered the more; it is recorded to have been especially ill-used by the Parliamentarians in the days of the great Civil War. The tympanum contains a figure of our Lord, seated in Glory, within an aureole supported by two angels. His right hand is raised in benediction, and His left hand holds a book. Outside the aureole are the symbols of the four Evangelists: the Angel of St. Matthew and the Eagle of St. John, one on each side above; the Winged Lion of St. Mark and the Ox of St. Luke, similarly placed below. A straight band of masonry crosses beneath the lunette, and has carved on it twelve figures, now much mutilated, but supposed to have represented the twelve Apostles. All the sculptured work of the portal has suffered greatly from age and exposure, and from the hand of man. In the recent restoration the coping has been renewed, the shafts have been given

separate bases once more, and many of the most worn stones have been replaced by new ones carved in facsimile. Mr. Clifford's beautiful drawing of the doorway is especially valuable, as he was able to take exact measurements of all its parts while the repairers' scaffolding was still standing. The doors that he pictures have since been replaced by a more elaborate pair, with richly scrolled hinges and strengthening bands of iron.

The author states, on the authority of Pepys, that in 1661

The great doors of Rochester Cathedral were said to be covered with the skins of Danes! The same thing has been said of the doors of Worcester Cathedral, and also of the East Anglian Churches at Hadstock and Copford. In 1848 all these doors had been removed from their original positions (the old north doors of Worcester being still preserved in the crypt); but Mr. Way succeeded in obtaining fragments of the parchment-like substance from each for microscopic examination. They were declared to be, in each case, human in their origin, and to have belonged probably to fair-haired persons.

Mr. Palmer tells us—

Troublous times fell on the church very soon after its erection, and, as Lambarde says, "No marvaile is it, if the glory of the place were not at any time very great, since on the one side the abilitie of the Bishops and the Chanons (inclined to aduance it) was but meane, and on the other side the calamitie of fire and sworde (bent to destroy it) was in manner continuall."

Rueful Rochester! As our author's interesting story tells, and as some of his photographic illustrations too aptly prove, ill-fate has ever haunted it, from the days of St. Augustine, who founded it, till those of the modern "photographic fiend" who libels it; and the wonder is that, in spite of such incessant misfortune, so much that is admirable and precious still remains to reward the visitor, who, with Mr. Palmer's excellent summary of the Cathedral's features and fortunes to guide and aid him, can spend hours, if not days, of deep instruction and delight in studying on the spot this sturdy and yet beautiful residue of successive glories and disasters.

Sunderland.

FRANK CAWS.

(187)

STABLES.

Stable Sanitation and Construction. By T. E. Coleman, F.S.I. 8o. Lond. 1897. [Messrs. E. & F. N. Spon, Limited.]

This excellent little volume is a treatise on stable sanitation and construction in the broadest sense, viz. as regards the efficient housing, not only of horses, but also of cattle and dogs. In the introduction the author strongly emphasises the fact that sanitary conditions are absolutely necessary to the well-being of the animals themselves, and also to the health of the community at large, notably in the case of dairies and piggeries.

The first chapter is devoted to the question of choosing suitable sites, and to the construction of external walls, with illustrations of the usual methods for the prevention of damp. A typical plan is given of a stable and accessory buildings

suitable for a country gentleman's mansion, showing the general arrangements. The following six chapters deal with the necessity of constant and efficient ventilation, and in them the author clearly and concisely explains both the natural and mechanical systems. Tables (taken from various acknowledged sources) are given of the superficial area and cubical air-space devoted to each horse in a large number of well-known stables—private, business, and military. These are exceedingly interesting, and of great value.

Chapter xiii. contains a number of plans of typical arrangements suitable for various stables, and also a scheme for one attached to a fire-brigade station, where a door is placed at the head of each stall opening directly into the engine-house, thus enabling the horses to be harnessed without loss of time. Sizes of stalls, loose-boxes, and passages are given for reference, and also a number of plans showing the most suitable arrangements for cow-houses. Water-supply, lighting, and paving occupy the next three chapters, in each of which much useful information is embodied.

The important question of drainage is treated at length, and is illustrated by drawings of a large number of fittings now in use. The author rightly deprecates the use of traps of any kind within the stable, and strongly advises the whole of the liquid sewage being carried in accessible open channels to a trapped gulley outside. Roofs and doors are next considered, and tables of scantlings for the construction of the former are appended. Three chapters follow on fittings for stables, harness-rooms, and cow-houses, in which the kinds most suitable for different classes of work are illustrated and described.

Two chapters are devoted to piggeries and kennels. As regards the former, the author strongly condemns the usually filthy condition in which they are kept, and points out that epidemics and diseases common to pigs are produced from this cause. Undoubtedly the stables for these animals should be as sanitary as those for other cattle, although it is a little doubtful if the pigs would not, from a personal point of view, prefer the more congenial habitation.

An essentially useful chapter is that on the approximate cost of the several kinds of buildings. Naturally, locality and other conditions will regulate this question to a large extent; but for the purpose of forming an idea of the necessary expenditure the information will be most helpful. The final chapter contains the various legislative measures relating to these buildings.

The work contains 183 illustrations; but, unfortunately, some of them have been necessarily so much reduced from the drawings as to render the figuring and lettering almost illegible. Generally, the book embraces a large amount of useful information in a compact form, and concludes with an admirable index for reference.

R. STEPHEN AYLING.



9, CONDUIT STREET, LONDON, W., 12th March 1898.

CHRONICLE.

The Prizes and Studentships 1898-99.

The pamphlet giving particulars of the Institute Prizes and Studentships for 1898-99 is issued to members with the present number of the *JOURNAL*. There is an important change in the conditions of one Studentship to which it is desirable that special attention should be directed. For some years the "Owen Jones Fund" has been increasing, and lately it has benefited under Owen Jones's will by the death of an annuitant, Hannah Jane Jones. It has therefore been decided by the Council that the Owen Jones Studentship should be £100 in value, and that the tour of the Student should be of not less than six months' duration. Certain modifications have also been made in the regulations for the "Arthur Cates" Prize.

The following is a brief summary of the subjects set and the general conditions:—

THE ESSAY MEDAL AND TWENTY-FIVE GUINEAS, open to British subjects under forty years of age.—*Subject*: "The Use and Value of Colour in Architecture."

THE MEASURED DRAWINGS MEDAL AND TEN GUINEAS, open to British subjects under the age of thirty.—Competitors must submit their own measured drawings of any important building, classical or mediæval, in the United Kingdom or Abroad.

THE SOANE MEDALLION AND £100, open to British subjects under the age of thirty.—*Subject*: Design for a Concert Hall to seat 2,500 persons.

THE PUGIN STUDENTSHIP (Silver Medal and £40), open to members of the profession (of all countries) between the ages of eighteen and twenty-five.—Awarded to the candidate who submits the best selection of drawings (by preference measured drawings of Mediæval Buildings) and testimonials.

THE GODWIN BURSARY (Silver Medal and £40), open to members of the profession without limit of age.—The object of the Bursary is to encourage the study of works of modern architecture abroad,

and candidates must submit selections of practical working drawings, or other evidence of special practical knowledge, and testimonials. The knowledge of at least one foreign language is a necessary qualification.

THE OWEN JONES STUDENTSHIP (Certificate and £100), open to members of the profession under the age of thirty-five.—Candidates must submit testimonials with drawings, some of which must be from existing buildings, and other examples, exhibiting their acquaintance with colour decoration and with the leading subjects treated of in Owen Jones's *Grammar of Ornament*.

THE TITE PRIZE (Certificate and £40), open to members of the profession under the age of thirty.—*Subject*: A Royal Mausoleum, not exceeding 12,000 feet in area.

THE GRISSELL PRIZE (Gold Medal and ten guineas), open to British subjects who have not been in professional practice for more than ten years.—*Subject*: A Fruit, Flower, and Vegetable Market for a small provincial town, on any open site of 100 feet square. The market to be covered with iron and glass; roof supported on iron columns.

THE ASHPITEL PRIZE (Books to value of ten guineas), awarded to the Student who most highly distinguishes himself in the Final Examinations 1898.

THE ARTHUR CATES PRIZE (Books to value of ten guineas).—This prize will be given by Mr. Arthur Cates at each Final Examination, until further notice, to the Student (successful in passing the Examination) whose Testimonies of Study, together with certain specially prepared sheets of drawings, are considered by the Board best to merit the Prize.

The President at Cardiff and Birmingham.

The President, Professor Aitchison, R.A., represented the Institute at the Annual Dinner of the Cardiff, South Wales, and Monmouthshire Society on the 19th ult., when Mr. C. B. Fowler [F.], the new President of the Society, occupied the Chair. Responding to the toast of "The Local Society and the Royal Institute," the Professor said that one of the objects that each district and each town should aim at was to impart a local character to its architecture, for not only had each town and district a landscape and character of its own, but it was to be supposed that the inhabitants themselves were not exactly like the rest of Britain; and as the French *gourmets* say of wines of different parts that they have "a smack of the soil," which they appreciate and admire, so ought our local architecture to have it too. The Institute, by its magnificent Library, had done much to open a study for architects of the great world of other climes and other ages, and had conferred a distinct boon on the profession by establishing an examination for Associates, which

had greatly improved the knowledge of the art. He was pleased to hear the praises of the Institute's exertions at the Brussels Conference. The ideal of architecture was to make its works like those of Nature, perfectly fitted to their ends, and endowed with the proper character. No effort was too great to give a proper character and distinction to our country's monuments, and make them to equal or to surpass those of the great architectural epochs of other countries and other towns, so that people from all parts of the world should come to see those of England, as they now go to Greece, to Rome, to Italy, and to France, to see what is stately, magnificent, or sublime. The young architects of the day were striving to master all the knowledge requisite for the full development of the art, and he looked forward to the day when their efforts would burst forth in a way that would astonish the world, as Tennyson said of the dragon-fly :

An inner impulse rent the veil
Of his old husk ; from head to tail
Came out clear plates of sapphire mail.
He dried his wings : like gauze they grew :
Thro' crofts and pastures wet with dew
A living flash of light he flew.

On the 4th inst. the President delivered an Address to a fully attended meeting of the Birmingham Architectural Association at the Queen's Hall, Birmingham, Mr. C. E. Bateman, President of the Association, in the Chair. The President impressed upon his hearers that architecture was pre-eminently a constructional art, and it was necessary that one who professed to be an architect should know enough of statics to be able to gauge the security of walls against the pressure of the wind, water, and earth, and even against the pressure of goods stowed against them that had an inclination to slide. He must know the pressure exercised by vaults, domes, and arches, and learn how these might be properly abutted, as well as understand how to prevent walls, piers, and columns becoming forced out of the vertical. Unless a man knew the outlines of construction he could hardly be called an architect, although he might be an admirable designer and planner. In planning it was important that each room, passage, and staircase should be as well adapted as possible to the uses to which it was to be put. The whole should be packed into as convenient a space as possible, so that there might be no lost room, and the most frequented apartments should be conveniently situated. All public buildings should be well planned, and striking or impressive to look upon. The great thing a man who could plan and construct ought to know was how to make the necessary portions of the building he was putting up tell the tale they were required to tell. Too little attention was paid to that matter in England, for they saw all kinds of incongruous ornaments and decora-

tions put on all sorts of places. It was probably ten times more difficult to get a thing to look well that was simple than if it were ornamented. Great ornateness was a mistake, for it was never equal to the perfection that could be obtained by the utmost possible simplicity. Those who felt they had divine genius for architecture should use that precious gift properly, and let no labour and no difficulty overcome their desire to make themselves skilful.

Cement Admixtures.

The investigations into the subject of cement admixtures entered upon three years ago by the Cement Trade Section of the London Chamber of Commerce have now reached completion, and the conclusions arrived at have been made public in a circular, a copy of which has been forwarded to the Institute by the London Chamber of Commerce. The circular states that the Section instructed Messrs. Stanger & Blount to make extensive experiments with mixtures of Kentish ragstone with Portland cement, and obtained valuable evidence from various experts. The net results are summed up in the following conclusions of Messrs. Stanger & Blount :—

"Ragstone is a natural form of calcium carbonate mixed with siliceous matter. It is an inert substance, incapable of setting when gauged with water."

"Ragstone, when mixed with Portland cement, undergoes no chemical change, and does not combine with cement either in the dry state or when the mixture is gauged with water."

"Mixtures of ragstone and cement have a specific gravity lower than that of unmixed cement, and, indeed, correspond closely in specific gravity with that calculated from the respective specific gravities of the two materials. The specific gravity of normal ragstone may be taken as 2.70, and that of normal cement as 3.15, so that the difference between them is substantial."

"Save for minor effects, caused by the slight slaking action of moisture commonly present in ordinary ragstone, the part played by ragstone mixed with cement is purely mechanical. The product obtained from the two materials is merely a mechanical mixture, and is in no sense a chemical combination. In our opinion such a mixture cannot correctly be termed Portland cement."

"Gypsum added to cement, for the purpose of regulating the setting time, in quantities not exceeding 2 per cent. of the weight of the cement, has no deleterious influence on the quality of the cement."

The circular goes on to state that, with respect to other materials, Messrs. Stanger & Blount are unable to give a general opinion as to their influence on cement when mixed with it, and that they would have to report separately as to each after long and careful investigation; and they express a strong opinion, in conclusion, that, whatever be the effects, whether good or bad, of the admixture of any material whatever with Portland cement clinker after calcination, the article so produced cannot legitimately be termed Portland cement. Each of the other experts examined endorsed this view, which the Section have approved and adopted.

The circular quotes the following passages from a recent paper read by Messrs. Stanger & Blount before the Society of Chemical Industry :—

“Ragstone is not a cementitious substance, and its addition to cement is an adulteration.

“Perfectly sound cement is weakened by the addition of ragstone.

“This weakening is not fully proportional to the percentage of ragstone added, because the latter acts as a fine filling material, and fills up the interstices naturally present in set cement.

“Cement which is not perfectly sound may be temporarily improved by the addition of ragstone. When the cement has become sound by aëration, this improvement disappears.

“Many minor points were examined and determined in the course of the main investigation, but the most important results are embodied in the conclusions given above.

“*Additions to cement other than ragstone.*—One of these which particularly came within our purview in the course of our investigation for the London Chamber of Commerce is gypsum. Gypsum is largely used in Germany, and to a considerable extent in this country, in quantities not exceeding 2 per cent., and usually smaller than this, in order to lengthen the setting time of the cement. Regarding cement as a chemically finished product in the state in which it comes from the kilns, needing nothing but mechanical comminution to make it saleable, the addition of any substance to the finished clinker must be considered in strictness an adulteration. Thus gypsum becomes under this definition an adulterant. Nevertheless, it is added for a distinct and useful purpose, and, in quantities smaller than 2 per cent., does not affect the cement injuriously, so far as our experiments indicate.

“The last and worst adulterant with which it is our purpose to deal is blast-furnace slag. As far as our experience goes, this most objectionable addition to Portland cement is not employed on the Thames and Medway, but in certain other districts it is used in large quantities for the preparation of a grossly sophisticated product which is fraudulently sold as Portland cement.

“We must not be understood as condemning true slag cement, made by mixing granulated blast-furnace slag with slaked lime, and sold under its proper title. This material is a perfectly legitimate product, and has its own uses. No one can reasonably object to its utilisation if it is not covertly substituted for Portland cement. But the addition of blast-furnace slag to Portland cement is another matter altogether. The general practice of the manufacturers who seek to increase their profits by the use of slag appears to be to add to the clinker, as it goes to the crushers, as much crude blast-furnace slag as they consider can be mixed with Portland cement without risk of detection by the ordinary consumer, who buys cement in quantities so small that the cost of its analysis is too great for him to pay. The quantity added may be as much as 30 or 40 per cent., and detection is not easy, or even always possible, for an unskilled observer. Apart from the fraudulent character of this addition, about which no doubt can well be entertained, there arises the question of its effect on the cement. . . .”

“All materials added to Portland cement after the clinker comes from the kilns are adulterants, with the exception of gypsum, which is a recognised addition for a specific purpose in quantities not exceeding 2 per cent. Of the two adulterants which have been specially dealt with—viz. ragstone and blast-furnace slag—the latter is by far the more objectionable, and it should be condemned and rejected by makers and users alike. In this view we believe we are supported by the great majority of engineers and manufacturers.”

As a result of their investigations the Section have adopted the following resolution :—

“That Portland cement be defined as a mixture of two or more suitable materials, intimately and artificially mixed in the requisite proportions, and afterwards properly calcined and ground, to which nothing has been added during or after calcination, excepting that an addition not exceeding 2 per cent. of gypsum is permissible for the purpose of regulating the setting.

“That the following rule be adopted :—

“That if any material whatever, excepting 2 per cent. of gypsum for the purpose of regulating the setting, be added to the Portland cement clinker during or after calcination, the article so produced shall not be sold as Portland cement, but under some other distinctive name.

“That the members of the Cement Trade Section of the London Chamber of Commerce, together with all manufacturers of Portland cement in Great Britain and Ireland who are not members of that association, be invited to sign the following declaration of conformity to the above rule in respect of all Portland cement made by them, wherever manufactured.

“DECLARATION.

“We, the undersigned, hereby agree to conform to and carry out the rule of the Cement Trade Section of the London Chamber of Commerce as set forth in a report made by the Section and adopted at a meeting held on Monday, the 10th May 1897—

“That if any material whatever, excepting an amount not exceeding 2 per cent. of gypsum for the purpose of regulating the setting, be added to the Portland cement clinker during or after calcination, the article so produced shall not be sold as Portland cement, but under some other distinctive name.”

“And we further agree that if at any time any of the parties to this agreement shall by resolution of a majority of those present at a meeting of such parties duly and properly convened in accordance with the practice of the London Chamber of Commerce, such resolution having been duly and properly confirmed by a majority of those present at a subsequent meeting called at not less than fourteen days' notice, be found to have failed to conform to and carry out the said rule, then in such case his or their name or names shall be struck off the list, and notice of the same made public in such manner as shall be resolved.”

The circular contains the names of forty-four firms in England and Wales who have signed the Declaration.

Obituary.

Mr. James Edmeston, who died on the 6th inst., had been a member of the Institute for forty-two years [*Associate* 1856, *Fellow* 1859]. He served on the Council in the years 1868, 1869, and 1876, and was till quite recently Chairman of the Architectural Union Company, owners of the Institute premises. He was one of the oldest members of the City Corporation, and Deputy of the Broad Street Ward.

News has been received of the death of Mr. Herbert Stone Wood, which occurred on the 22nd December last. He was elected *Associate* in 1890, and was awarded the Scientific Masonry Prize in 1891.

NOTES, QUERIES, AND REPLIES.

The Mediæval Campanili of Rome.

From Professor BALDWIN BROWN [H.A.], M.A.—

Mr. Tavenor Perry's Paper on the Roman Campanili opens up several questions of interest. One is the old and still unsolved problem of the date and rationale of the earliest towers connected with Christian ecclesiastical buildings; another, the epoch of erection of the particular group of towers for which Rome is famous; a third, the possible connection of these last with the numerous towers in our own country that are pre-Conquest in style, if not always in actual date. With regard to the first, Mr. Tavenor Perry justly remarks that towers were by no means unfamiliar objects in the Roman world of Imperial times. It is clear, however, that there was no direct continuity in tower-building from the pagan to the Christian era, for there is no evidence of the erection of ecclesiastical towers before, at any rate, the sixth century, and it is noteworthy that no such feature makes its appearance in the two views of groups of early Christian buildings on a Lateran sarcophagus of the middle of the fourth century, or in the view of Ravenna churches in a mosaic in S. Apollinare Nuovo, dating about the middle of the sixth. The reason for the towers is only clear in the case of the Irish group, which were certainly towers of refuge, and in that of the towers on the plan of St. Gall, which are expressly denoted as places of outlook. There are several other theories as to their origin, and the latest authorities, Dehio and Von Bezold, are inclined to go back to the view of a derivation from Islam. Mr. Tavenor Perry gives prominence to the theory that they were from the first bell-towers, and this would follow naturally if the Roman Campanili are accepted as early, for they are supplied with very ample belfry openings. It may be noted that in the quotation from Cattaneo, at the top of p. 219 (JOURNAL, February 26), about cylindrical "bells" of the sixth century at Ravenna, the reference really is to bell-towers, not bells,* and there is no reason to believe that very large bells were known at that epoch. In the time of Charles the Great, however, a bronze-worker cast a bell for which he professed to need a great quantity of copper, and no less than one hundred pounds of silver. This silver he embezzled, and when the bell had been hung in a bell-tower, the clapper of it fell on his head and passed right through his body to the ground—all of which gives an idea of a sizeable piece of work.† There does not seem to be any reason for giving to Italy

priority in the manufacture of bells, for the words for "bell" in German, French, English, and Gaelic are northern, and not Italian, in origin. The Irish were devoted to bells, but their towers were not originally erected for their accommodation.

Mr. Tavenor Perry's beautiful drawings enable the readers of his Paper to form a clear idea of the particular group of towers about which he writes, and it is not to be wondered at that the style of them has led many authorities to place them at a comparatively late epoch. The repetition of divisions, the salience of the string-courses, the multiplication and amplitude of the openings, and the lightness of effect secured by the use in them of slender shafts, would in themselves suggest the twelfth century rather than the eighth, ninth, or tenth. Such a tower as the older (Southern) Campanile at S. Ambrogio, Milan, with its small openings, and plain walls unbroken by string-courses, would, in point of style, seem to accord better with an early date than the Roman examples. Against this natural predisposition the writer of the Paper brings forward some weighty arguments. There is, of course, clear literary evidence that there existed towers of these earlier dates at Rome, as elsewhere in Europe, and Mr. Tavenor Perry contends that in the main the existing Roman Campanili are the same that are thus referred to. We may take it that he has satisfied himself by his technical examination of them that they seem, as a rule, to be of one date, and that he would not accept the suggestion of Mothes that the lower stages may be early, while the upper ones were added at a later period. The contention of the last-named writer, that the use of slender shafts instead of piers to divide the openings is a sign of advanced date, is a good deal shaken by the fact that small shafts of the kind appear to have been used in the Campanile of S. Apollinare in Classe, Ravenna, that has the best claim of any existing tower to be a work of the sixth century, while they are still to be seen adorning the outside of that invaluable monument, the front of the palace of Theodoric at Ravenna, a work of about 500 A.D. We find here, too, the brick pilasters, and what Cattaneo's translator calls "little pensile arches," so characteristic of the Campanile. On the other hand, it must not be forgotten that such small shafts are equally characteristic of the "Pisan style" of the eleventh-twelfth century in Tuscany, and that the bell-tower of S. Martino, Lucca, which cannot be earlier than the rebuilding of that church, about 1070 A.D., has its openings treated in almost exactly the same way as the Roman examples shown in Mr. Tavenor Perry's drawings.

The question of the possible influence exercised on pre-Conquest towers in England is one of great interest. One distinguishing mark of these towers, which separates them from those in the Norman style, is the absence of recessing in

* Cattaneo's English translator, who has enriched our language with so many new architectural terms, speaks in the next sentence to the one here quoted of a "bell" with "great twin doors," and "friezes with little pensile arches," which certainly suggests a "bell-tower" rather than a "bell."
† Pertz, *Scriptores*, ii. p. 744.

the openings. Like the windows in the Roman Campanili, these are pierced straight through the wall, and the pier or shaft that divides them has to be made to sustain the whole thickness of the masonry. The device of doubling the supports, which Mr. Perry notices in the case of the cloisters of St. Paul and St. John Lateran, at Rome, of the twelfth century, was employed centuries before at S. Costanza, Rome, and the baptistery at Nocera; but it does not occur in the Campanili or in the English towers—save, perhaps, in a very modified form at Earl's Barton. The common plan at Rome, as readers of the Paper will have seen, was to set a single shaft in the middle of the thickness of the wall, and surmount it with a capital corbelled out to an extent sufficient to sustain the masonry above. The normal English plan was not the same as this. In all but exceptional cases the mid-wall shaft, either with or without a capital, is placed under a through-stone, or long impost, running through the thickness of the wall, and generally projecting a little on each face. This stone sustains the masonry, and the one shaft is enough for its support below. An exceptional case is the following. A true corbel capital takes the masonry in the belfry openings of the tower of Sompting, Sussex, and is sustained below by a straight mid-wall shaft. This resembles the normal Roman corbel caps, but is adorned beneath with elongated volutes. It needs no through-stone above it, as it spreads to a length of about 2 ft. 4 in., and is sufficient for the work to be done. The belfry stage at Sompting has this further resemblance to the Roman examples, in that it has two double openings on the north and south faces, while our pre-Conquest towers, as a rule, have only one. Here, however, the resemblance seems to end, for Sompting tower is terminated above in a manner unrepresented at Rome, and strongly indicative of German rather than Italian influence. A bracket capital, not so developed as that at Sompting, is used in an opening on the southern face of the tower at Jarrow, Durham, dating posterior to 1075.

The characteristic feature of the belfry openings, in almost all our early towers, is the long flat through-stone which seems in some sense a national peculiarity, though it does occur on the Continent. The through-stones are supported below in four different ways: (1) by baluster shafts that never, I think, except in the examples at St. Albans, have regular caps. These balusters are no doubt ultimately Roman, but they are not common in Italy, and I have never noticed them in Italian belfry openings. (2) By plain shafts without capitals. These are only found in rudely-built examples. (3) By shafts, round, octagonal, or at times oval in plan, of proportions similar to those in the Roman Campanili, but supplied with capitals that are square in plan; or else (4) are corbelled out so as to measure more

in the direction of the thickness of the wall than on the other face. These capitals form an interesting group, as some of them are elaborately carved, and occur in abundance, especially in Lincolnshire and the adjacent counties. Corbelled ones are to be seen at Glentworth, Great Hale, Alkborough, Clee, and other places in the first-named county, and at Monk Fryston, near Selby, Yorks. That on the northern face of Glentworth tower is the most pronounced example of such corbelling I am acquainted with, but it does not extend nearly to the thickness of the wall.

As Mr. Tavenor Perry has so justly pointed out, Italian influence must certainly be reckoned with in connection with our pre-Conquest remains, and his suggestions in this direction are a valuable part of his interesting Paper.

Edinburgh.

The Father of the late William Burn, Architect.

FROM JOHN HEBB [F.]—

A letter from the poet Burns to Peter Hill, inclosing 6*l.* 1*s.*, and authorising him to pay 5*l.* 10*s.* to Mr. Robert Burn, architect, "for erecting the stone over poor Fergusson," dated Dumfries, 5th February 1792 (two pages, folio), was sold on the 7th February last, at the sale of Mr. A. C. Lamb's library, at Edinburgh, for 30*l.* 9*s.* The Robert Burn referred to in this letter was a successful Edinburgh builder, and the designer of the Nelson Monument on Calton Hill, which is described by Groome (a Scotchman) in his *Gazetteer of Scotland* in the following terms:—"On the summit of Calton Hill is one of the ugliest monuments in Edinburgh—the curious butter-churn structure by which the public taste saw fit to perpetuate the memory of Lord Nelson." Robert Burn was the father of the late Mr. William Burn, of Stratton Street, the architect of Montagu House.

The stone erected by Burn in the Kirkyard of Canongate, Edinburgh, is a simple headstone, with the following inscription:—

Here lies Robert Fergusson, poet.

He was born 5 Sept. 1751 and died 16 Oct. 1774.

No pageant bearings here, nor pompous lay,

No storied urn nor animated bust:

This simple stone directs old Scotia's way

To pour her sorrows o'er her poet's dust.

"Modern Architecture."

FROM R. LANGTON COLE [A.]—

Mr. Statham is careful, as a rule, to discriminate in his new book between modern designs and modern buildings, but on pp. 78 and 89 there are exceptions which should, I think, be noted. On p. 78 he refers to "the rings of darker-coloured stone" in the columns of Sedding's Church of the Holy Redeemer at Clerkenwell, and the rings are shown in the illustration. Now, the columns have no rings (or had none recently), and they are not of stone, but of cast-iron, covered with plaster, like the iron girders concealed by the

entablature. It is probably this iron construction, strengthening the beams and columns and increasing the spans, which gives the "quite different" appearance to the interior on which the author comments; and this use of iron in church architecture here, and in Mr. Aston Webb's Huguenot church in Soho Square, might well have been referred to in the final chapter.

On p. 89 is an illustration of Mr. Brooks's design for the Church of the Good Shepherd, Hampstead. This church is, I understand, now known as All Hallows; the building is stopped for want of funds, but, when completed, it will have an open timber roof, so that the special feature noted (the termination of the vaulting ribs) will have no existence, and the design will be varied in other respects as well.

All architects will be grateful to Mr. Statham for his contribution towards a study of modern architecture; but may we hope it is only a contribution, and that a larger work, describing for us some of the notable buildings in our own country and elsewhere, for which there is no space in this publication, may follow it before many years have passed?

MINUTES. IX.

At a Special General Meeting, held Monday, 7th March 1898, at 8 P.M., the Chairman, Mr. W. M. Fawcett, M.A., *Vice-President*, moved that, subject to Her Majesty's gracious sanction, the Royal Gold Medal for the promotion of architecture be presented to Professor Aitchison, R.A. The motion having been seconded by Mr. H. L. Florence, *Vice-President*, it was

RESOLVED, *nem. cou.*, that, subject to Her Majesty's gracious sanction, the Royal Gold Medal for the promotion of architecture be presented this year to Professor Aitchison, R.A.

The Meeting then terminated.

At the Ninth General Meeting (Business) of the session, held Monday, 7th March 1898, at the close of the Special General Meeting above referred to, Mr. W. M. Fawcett, M.A., *Vice-President*, in the chair, the Minutes of the Meeting held 21st February 1898 [p. 237] were taken as read and signed as correct.

A list of donations to the Library [see *Supplement*] was taken as read, and an expression of the thanks of the Institute to the several donors was ordered to be entered on the Minutes.

The Chairman announced that the Council had resolved to increase the value of the Owen Jones Studentship from £50 to £100, and that the holder of the Studentship would be required to make a tour extending over six months, such tour to be devoted to the improvement and cultivation of his knowledge of the successful application of colour as a means of architectural expression.

The following candidates for membership were elected by show of hands, under By-law 9, namely:—

As Fellows.

GEORGE LETHBRIDGE [A.]
EDWARD THOMAS BOARDMAN (Norwich).

As Associates.

LAURENCE HOBSON (*Probationer* 1893, *Student* 1896, *Qualified* 1897, *Arthur Cates Prizeman*, November 1897).

WILLIAM CHARLES HULBERT (*Qualified* 1897).
JOHN ORMROD (*Probationer* 1891, *Student* 1895, *Qualified* 1897).
DUDLEY CHRISTOPHER MAYNARD (*Probationer* 1893, *Student* 1895, *Qualified* 1897).
TIMOTHY HONNOR (*Probationer* 1889, *Student* 1891, *Qualified* 1897).
HARRY JOHN PEARSON, F.S.I. (*Probationer* 1895, *Student* 1897, *Qualified* 1897).
RALPH HENRY MORTON (*Probationer* 1890, *Student* 1894, *Qualified* 1897).
HERBERT SHEPHERD (*Probationer* 1892, *Student* 1894, *Qualified* 1897).
WILLIAM McCULLOCH (*Qualified* 1897), St. Andrews, Fife.
JOHN FREDERICK DUTHOIT (*Probationer* 1892, *Student* 1895, *Qualified* 1897), Dover.
HENRY ALBERT COLLINS (*Qualified* 1886).

The proceedings then closed, and the Meeting terminated at 8.20 P.M.

ARCHITECTS' BENEVOLENT SOCIETY.

Report of the Council.

Adopted at the Annual General Meeting, 9th March 1898.

The Council of the Architects' Benevolent Society, in presenting their Annual Report, have much pleasure in recording the fact that the progress in the Society's affairs during the past few years has been maintained in the year under notice. In view of the many calls upon the means of private individuals during the past year, the Council did not think it advisable that any special appeal on behalf of the Society should be made to the architectural profession; nevertheless, they have the satisfaction to report that many liberal donations have been received by the Society, and that several new names have been added to the list of subscribers.

Although the Society now possesses three hundred annual subscribers, the Council feel that this number is not sufficiently representative of the large body of architects practising in the United Kingdom; they are assured that there must be a large number of architects, not subscribers to the Society, who would be desirous of helping their less fortunate brethren, or their widows and children who have been left insufficiently provided for. The usefulness of the Society would be increased in proportion to the augmentation of its list of subscribers; and the Council would remind those who have not contributed to the funds of the Society that an annual subscriber of one guinea has the privilege of recommending two applicants for grants during the year, and that relief is always afforded to worthy and properly accredited applicants when there are funds available for the purpose. It is earnestly wished that the list of annual subscribers should be increased, and members of the Society might materially help in effecting this object by bringing its aims and work under the notice of their brother architects.

The amount received in annual subscriptions during the year was £456 10s., as against £453 8s. in 1896. Four members have withdrawn, and twelve members were in arrear with their subscriptions when the books were closed for the year; and the following gentlemen have recently become annual subscribers:—Sir Benjamin Baker, Messrs. J. Wallis Chapman, Charles Henman, Delissa Joseph, C. W. Lovett, E. W. Mountford, Alfred Williams, Latham A. Withall, and Alfred B. Yeates.

The Capital Account has been increased by the bequests of £100 each of Mr. David Mocatta and Mrs. Ann Mocatta, and by the following donations:—The Merchant Taylors' Company £21, John o' Gaunt Sketching Club



Heraldry over Gateway, Carthusian Convent, near Burgos.

HERALDIC DRAWING AND ITS ADAPTATION.

By J. D. CRACE [*H.A.*].

Read before the Royal Institute of British Architects on Monday, 21st March 1898.

A FEW words of apology seem necessary at starting. What I originally undertook to do this evening was to read a very short Paper on "Heraldic Drawing," to follow Mr. Birch's much more important Paper; and I had proposed to myself that I would endeavour, in fifteen or twenty minutes, to point out some of the qualities which, in my judgment, should distinguish good heraldic drawing, and to illustrate these by a selection of actual drawings by masters of the art. Unfortunately, Mr. Birch's health has interfered with the performance of his larger share in the task. Finding myself, therefore, late in the day, called upon to extend somewhat the intended area of my subject, I must ask your indulgence if the matter be more loosely strung together than I could have wished.

In any form of art, to produce the due effect, the artist must be quite clear what it is that he aims at; what task does he set himself; to what sense or sentiment does he appeal. Half the failures in art arise from indecision or confusion of mind in the artist as to the method by which he wants his work to appeal to another mind—to impress the spectator. There are, of course, ways innumerable in art for making this appeal from mind to mind—from one man's hand to another's eye; but it is only to be made successfully when the means taken bear due proportion to the result intended—that is, to the particular effect to be produced on the spectator.

For this reason the expression of deep pathos is encumbered rather than assisted by complexity of grouping or great elaboration of colour: these are too sensuous, too disturbing. Simple lines and a simple scheme of colour leave the mind freer to admit, in its full significance, the appeal which produces a thrill of emotion. Take, for example, the picture which among all modern works is still perhaps the most sincerely emotional. I mean Millais' "Huguenot." The lines of the composition are almost gaunt in their simplicity, and the general colour scheme is extraordinarily bold and direct. All the wonderful detail of the background cannot disturb it, so powerfully are the dark figures brought out as if against an

Indian shawl. The interest, the emotion, are secured with the first glance; and thereafter the eye wanders over the ivy-leaves, and the brick wall with its lichens, only to come back to the pale, upturned face, and be moved anew by its beauty and its tragedy. The exquisite detail then serves to encourage the eye to linger on the picture and to dwell on its pathos.

From such a work to the drawing of heraldic devices seems a long step indeed; yet one leading principle applies to both in a degree; it is the necessity of recognising what you have to say, and how to say it simply and directly. In the case of the picture the appeal is to the emotions and sensibilities first, and to the senses afterwards; with the heraldic device the



FIG. 1. FIG. 2.
DESIGNS FOR STAINED-GLASS IN WESTMINSTER PALACE, BY A. W. PUGIN.

appeal is neither to sensibilities nor emotions, but to a simple intelligence, to be rapidly understood. It is no more to be considered pictorial than is a mason's mark or a letter of the alphabet: and its purpose is in a degree similar, for it is to be so combined with other devices as to convey information in a very brief and direct way. The eagles, lions, roses, or fleurs-de-lys of heraldry are not to be thought of as pictorial illustrations of the animal or vegetable creation, but as symbols, generally not even emblems; as much symbols as alpha and omega.

For, after all, the alphabet itself is but an example of symbolic representation from some of the same or similar objects as those which serve the herald as "charges"; but, their purpose having been gradually changed from the suggestion of *form* to the suggestion of *sound*, the original representation has been so whittled and pruned away as to leave only what may convey its sound meaning to the eye in an instant—a flash of time.

Of course, all symbolic representation implies some previous knowledge in the spectator, just as a printed notice implies the ability to read in the persons for whom it is intended. Obviously, however, it needs much less training and less intelligence to recognise the limited meaning of a symbolic device than to put together the same limited meaning of a group of letters arranged into, say, three words. We may certainly assume that, before the days of School Boards, many a thirsty tramp could tell that the house he was approaching was called "The Red Lion" when he could not read a single one of the ten gold letters which were



FIG. 3.



FIG. 4.

DESIGNS FOR STAINED-GLASS IN WESTMINSTER PALACE, BY A. W. PUGIN.

inscribed immediately below the effigy on the sign-board. The tramp may never have seen a real lion; indeed, it is pretty certain that, before railroads, not one Englishman in a thousand had seen a real lion; but it is safe to say that there was not one Englishman in a thousand who would not know that the sort of lion which he saw painted red on that swinging board meant that beer was sold in that house, and that the house itself must be known as "The Red Lion." They would know this if they could not read; and if they could read, they would know it before they were near enough or had time to read the inscription. That is one illustration of the value of the conventional or symbolic representation of the heraldic "charge" in conveying certain limited information at a glance. But we may easily find modern equivalents for the heraldic "ordinaries," that is to say, the coloured division of the shield. There are plenty of persons who, with a fine contempt for most things ancient, would describe heraldry as "out of date," "antiquated nonsense." Now I would take the sporting

“bookmaker” as the type of person with as small a share of reverence for anything out of a stable as can easily be found. Yet on the course he finds the “ordinaries” of the jockey’s jacket a most convenient means of ascertaining, at a glance, the position of the favourite he has bet against, or of the particular outsider whose success may line his pocket. Of course, flags, whether for signalling or for distinction, are actually heraldic. These all go to show how heraldry serves to give, at a glance, certain distinct information. The extent of the information to be conveyed by any form of heraldic device varies, of course, immensely. The traveller by Great Western express glances up at Windsor Castle, and knows that the Queen is there, because the Standard waves over the tower. A yacht lies half a mile from the shore; but we can see her white ensign, and know she is of the Royal Yacht Squadron. The captain of the great steamer coming up the bend by Tilbury Fort belongs to the Naval Reserve, for she flies the blue ensign. Her other flags inform the initiated of many other important facts concerning her. Just in the same way personal heraldry conveys to those who care to know them personal facts, which may be of wide interest, but can hardly fail to be of some. A few years ago a friend of mine bought a small folding ivory retable, of fourteenth-century workmanship, closed by a small silver clasp. On the clasp were two little shields, with just enough enamel remaining to enable the bearing to be traced. While showing me this new treasure my friend said, “How it would add to the interest to know whose it was!” A not very long search revealed the name of the owner of the first shield, his identity being made clear by the arms of his wife’s family on the other shield. They had shared this little “aid to devotion.” The shields were so small that only very expressive conventionalism could have made the “charges” legible. There is a picture in the Devonshire Collection which had always been called a “Van Eyck” till a few years ago, when a careful critic ascertained for whom it had been painted (by Hans Memling) by the little shields in the architectural canopies. In decorative heraldry, whether architectural or other, extreme clearness of expression is required; the more so that frequently the examples are distant from the eye, or in positions where other forms more important to the composition must be so rendered as to claim the first attention. The details have also sometimes to conform to cramped and difficult spaces; and in his adaptation of the form to the space the true artist is soon recognised, whether in heraldic or in pictorial decoration. I shall have occasion to refer to this again, but will ask you to notice the “De Bohun” swan, adapted to narrow tracery, in illustration of this difficulty overcome [fig. 1].

I just now alluded to the close relationship between the symbolic design of heraldic charges and the less direct forms used in expressing ideas by writing. It is much closer than may appear at first sight. I have no doubt that if we had this evening had the advantage of hearing Mr. Birch on his side of the subject, he would have told us to look back to the remote times of Egyptian art, and to see how each member of the long lines of kings or queens of the various dynasties can be distinguished by the “cartouche” bearing the symbols of that sovereign. That “cartouche,” repeated on the cornice of a temple, was almost as heraldic as the shield repeated on the cresting of an English monument; and its object was virtually identical.

The animal devices on the obelisks or temples of Egypt were drawn with a truth and expression which the best heraldic artist may envy. For concise, expressive, conventional drawing, the hawks, owls, vultures, geese, ducks, wasps, beetles, and other objects of creation used as symbols on the monuments of Egypt, graven more than three thousand years ago, have never been surpassed, and should be well studied by the heraldic draughtsman. It is true that they were used to convey the sense of words or sounds: but it must also be remembered that they were used to convey certain information during many centuries when writing

was also in use for other requirements. For monumental purposes the well-recognised symbol conveyed the idea more promptly. The royal emblem, the cobra, meant something quite unmistakable to the king's subjects; nor was it difficult for a people who yearly saw the beetles on the Nile banks, propelling uphill, with infinite care, the little mud ball which contained their eggs, lest these be drowned by the rising waters, to associate that symbol with the care of Providence for the soul—the unseen life. Of course, the one important thing is that the object which represents the idea shall



FIG. 5.—HASTINGS BRASS (circa 1350), ELSING CHURCH, NORFOLK.

be so drawn as to be promptly recognised; and the art of conventionalising is the art of selecting the points which are most characteristic, leaving other details to be filled in or not according to circumstances. It is useless, or even harmful, whether in ornament or heraldry, to multiply detail when it is itself lost, and perhaps even confuses the form. That is best designed which best fulfils its purpose at the distance—or under the conditions—in which it is intended to be seen. On the other hand, where the device is not in a distant position, or is associated with other matter intended for deliberate inspection, more detail and even more realism seem permissible, if not actually demanded.

On this account, in such a case as the design of a book-plate there seems fair ground for ample detail, and an approach to “naturalism” in the drawing and of a playfulness in the treatment if the nature of the design otherwise admit of it, for the book is intended for close and leisurely inspection. A certain freedom in the general treatment, even to the extent of being fanciful (so that the essential meaning is preserved), seems reasonable on the page of a book, when quite inadmissible in the more austere conditions of architectural decoration, always remembering that the object represented should be as far as possible unmistakable. The endeavour to be quaint has sometimes led to the artist leaving the spectator in doubt as to what animal he has intended to suggest. This should never be. That cannot be good art from any point of view. It reminds me of the difficulty which befell an amateur sketching society, as related to me by one of its lady members. Some six or eight ladies formed a little society for sketching from nature. Their sketches were first to be sent to their professional instructor for his criticism, and then to be circulated from one to the other, mutual comment being invited, to be inscribed on the back of each sketch. On one the instructor wrote, “The landscape is fairly done, but the cow is out of drawing!” The next critic wrote, “Surely it is a horse!” The next, more impatient, wrote, “Any one might see that it is a donkey.” But the next member, happening to meet the author of the sketch before writing her criticism, asked her *what* animal she had put in the foreground of her last



FIG. 6.—SIR JOHN HARSICK (1374), SOUTHCARE CHURCH, NORFOLK.

Das Wapen der Pfalzgra-
uschafft bei Reine.



FIG. 7.

sketch, and received the reply that it was a "rabbit." I am afraid that *that* amateur will never succeed at heraldry.

There have, however, not been wanting men, during the last fifty years, who have successfully grasped the problem of sound conventional drawing as applied to heraldry, and fortunately their number increases. Perhaps it is still more important that appreciation of what constitutes good heraldic design has found its way into the headquarters of heraldry. I hardly think it would be fair to the Heralds' College to blame them for shortcomings in design, when in fact they only represented a decadence of public taste and perception which was general; but, being an old public institution, they have taken a long time in coming round. It is difficult, after looking at some of the Heralds' College grants of the last twenty years, to remember that such work as that for which I show the cartoons on these walls to-night was executed in stained-glass at Westminster Hall and Palace, and visible to the public more than forty-five years ago. If I hardly feel justified in selecting the names of living men, I may at any rate acclaim some of those who are gone, though within our own time—Willement, Pugin, John Powell, James West, Clement Heaton, and William Burges. The first named at least recognised the merit of the old work, and did much to call attention to it. The other five were splendid draughtsmen, and all in their several ways real artists.

But, so far as heraldic art was concerned, Pugin was *facile princeps*. His ready mind, full of resource, grasped the facts and conditions at a glance; and the extraordinary rapidity of his hand enabled him to put his ideas into shape, while another man would have been formulating them. Hence the amazing amount of splendidly designed heraldry which we possess in the Houses of Parliament. I doubt if there is any heraldic glass of any time equal in point of design and arrangement to that at Westminster; and, thanks to the courtesy of Messrs. Hardman, I am able to show you some of the original drawings from which it was executed. It is not possible now to distinguish how much is the work of Pugin himself, and how much that of his pupil and son-in-law, John Powell. Let them share the honours of these beautiful drawings, executed with much delicate and faithful care, in spite of the pressure and worry attendant on the carrying out of this vast work at Westminster. It has often been assumed that Pugin's work was all grotesquely Mediæval. But I put it to you that these creatures—these heraldic beasts—are drawn with such a true artistic instinct that, were the accessory detail eliminated, the animals themselves might, with trifling alterations, take their places in Renaissance or Classic surroundings without exhibiting any marked incongruity [figs. 1, 2, 3, 4].

The late Clement Heaton was also a very able heraldic draughtsman—generally for glass—and infused much spirit into his animals. His firm have kindly lent me some of his cartoons; but these hardly do him justice.

James West, again, was a clever and rapid heraldic draughtsman. He executed much decorative heraldry for my father (who was himself a keen herald), and drew many excellent book-plates. Some of his designs are on the walls.

As you well know, William Burges delighted in heraldry as in armour. So good a draughtsman, and so learned an archæologist, could not fail to make his heraldry interesting and often original. He had too sincere an admiration for Greek art, as well as for his beloved "thirteenth century," to disregard truth to nature as a foundation in design. It was in his application of it that he was too much a mediævalist, and I think perhaps he forced the "quaint" side of Mediæval art too much on the attention. For all that, what he touched he made interesting.

I said in the beginning of this Paper that it was of the first importance that the artist should be in no doubt about his own meaning. Perhaps no one subject has, from this point



FIG. 8.—GATEWAY OF BISAGRA, TOLEDO.

of view, tripped up so many designers as the heraldic helm and crest. It is amusing, yet almost sad, to see how completely the heraldic painter of the last century in this country lost all idea of what he was supposed to represent. Of what were the relations between the helm, the crest, the wreath or torse, and the mantling, he seems to have had no idea—not a suspicion. Yet the heralds must have known, or had the means of knowing, all the time.

Although the subject has been dealt with in preceding Papers, I shall venture to touch on it again, because it has so often been a stumbling-block to the heraldic draughtsman.

I suppose that even those who have bungled the matter most have at least known that

the crest was meant to surmount the helmet—its very name infers that much. But how was the crest attached, and what have the mantling and the wreath to do with it?

The mantling was obviously intended to shelter the wearer of the helmet from the sun and weather. Obviously also, it could not be put on after the crest was fixed in place. The convenient way, then, would often be to attach the crest to the cloth which formed the mantling, and which, being placed in position, was laced or sewn to the helmet through the small holes provided for the purpose. The wreath, then, was placed over the mantling and confined it evenly to the helmet, and it also, no doubt, was made secure and laced to the steel.

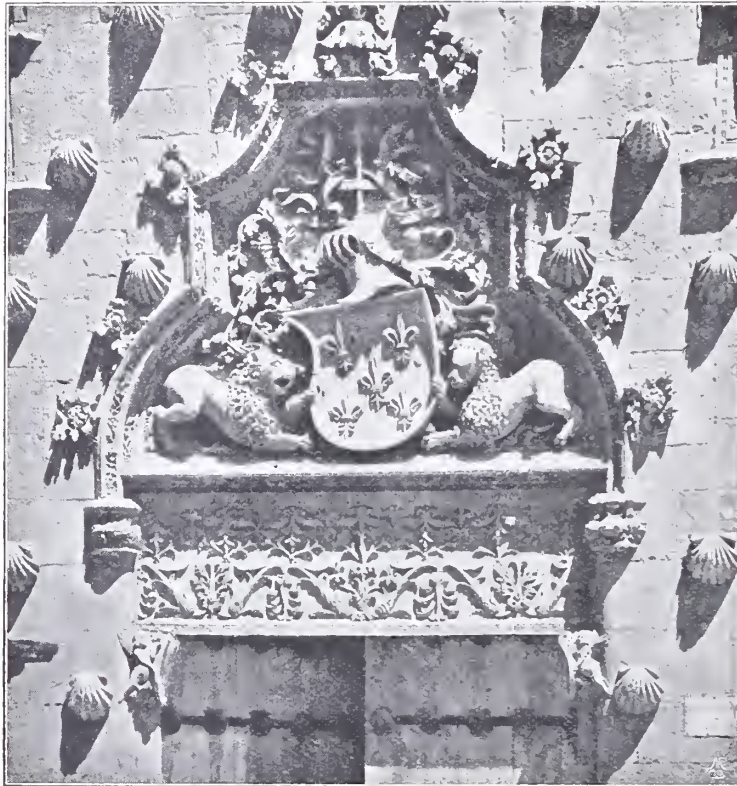


FIG. 9.—OVER DOORWAY OF THE HOUSE OF THE SHELLS, SARAGOSSA.

The attachment of the crest to the cloth alone would hardly have been sufficient for a large or high crest, which was therefore also laced to the steel through holes in the top, similar to those already mentioned as lower down, or sometimes affixed by a spike. In the case of nobles a small coronet or jewelled band took the place of the twisted wreath. The crest on its mantling, which is kept close by "wreath" or coronet, is now secure. I show you a rough home-made model with a toy crest thus mounted, and which I will take apart, the better to explain the purpose and object of each part.

The cloth or mantling varied much in shape, which depended chiefly on the fashion of the day. The jagged form may have originated in accident, or may have been in part due to the necessity of dividing the lower edge when it was lengthened, or possibly from its having been made of skins—I believe it was often partly of leather. But it must be remembered that in the fifteenth century the cloak itself was often worn with a jagged edge.

There is a brass in Elsing Church, Norfolk, where the mantling is cut off plain, and even

with the lower edge of the helm, the front edge being turned back and buttoned over, like the skirts of the old uniforms [fig. 5]. In this case the crest is a bull's head, and the neck is drawn quite on to the helmet, and finished only with a sort of hair fringe. More frequently the cloth falls to a simple point with a tassel behind, the lower edge being slightly scalloped, as in the well-known "Harsick" brass in South Acre Church [fig. 6]; both these are of the time of Edward III. By following the crest and mantling from its simpler to its more elaborate forms, the artist will understand what arrangement he has to deal with, and can vary or develop it ornamentally at his pleasure, without making nonsense of the several parts.

In the later sixteenth and following century the origin of the mantling was duly indicated, but it was elaborated often into a dense scroll foliage. These elaborate scroll forms of the mantling or lambrequin were much affected by the Germans, who have, however, always maintained a love of heraldic device; and indeed, in the most important of their recent public buildings in Berlin—the new Parliament House—the principal front is ornamented with two fine heraldic panels, in which the shields are combined with sculpture of very high artistic merit. They were well illustrated in the *Builder* of 10th August 1895.

The drawing of the charges in old German heraldry is very free and spirited [see fig. 7].

Spain is perhaps the country in which heraldry was most boldly and freely used for the decoration of architecture. Not infrequently the whole wall space between the flanking towers of a city gate is occupied by the royal arms, as at Burgos. In one case—at Toledo—such a space is entirely occupied by the Imperial Eagle of Charles V., carved with extraordinary vigour and effect. The space cannot be less than twenty feet square [see figs. 8, 9].

Magnificent cloths of state, embroidered with the arms and badges in gold and colour on silk or velvet grounds, were also in use in Spain, and must have added much to the effect of any state ceremonial; and in Spain, perhaps, more than anywhere, ceremonial was a matter of no little importance. Such decorations are hardly likely to be exhibited in connection with family functions in these days; but there are municipal and other public ceremonials when a really fine heraldic cloth would make a much more imposing background to a royal or municipal group than is usually presented by the extemporaneous and tawdry finery which is ordinarily the expedient on these occasions. If each of our great cities kept a really fine embroidered cloth of state, and a few suitable accessories, ready to be used on the occasion of royal visits, opening of assizes, laying of foundation stones, and similar functions, to which it is customary to impart some ceremonial form, the function itself would gain in picturesque dignity; and the cost would, in the long run, be less than what is now expended spasmodically on temporary rubbish.

The fact is that well-drawn and well-coloured heraldry, where it can be used without suggestion of ostentation, really affords a very effective means of introducing some brilliancy of colour in positions where such brilliancy is demanded, whether for decorative effect or for the concentration of attention.

In decorative effect how valuable, for instance, is the blazoned shield in the boss at the intersections of rib-vaulting, or on the hammer-beam of a timber roof, or, again, in some of those high chimney-pieces which Mr. Gotch instanced [Vol. IV. p. 265]. The heraldic device affords the architect or the decorator just that ready escape from the monotonous, or the too "general" and impersonal, of which he is so often in want. And, if only he deals with it carefully and with spirit, the opportunity for its use need not be confined to one feature or one material. I have in the room examples of Pugin's adaptation of heraldry to several purposes, and I also exhibit here one sketch design by him for a complete genealogical tree, as the decoration of a large wall panel for the late Earl Somers.

To sum up, in drawing heraldry the essentials are first a clear apprehension of the general principles, so as not to drift into heraldic blunders or confusion. Secondly, very distinct ideas

of the original forms and meaning of the things to be drawn. Thirdly, a frank acceptance of the conventional, so far as that means simplification and direct expression. And, I think I might add, as a fourth requirement, attention to the conditions and surroundings whether of style or position; the avoidance of needless exaggeration of the grotesque, which may easily be carried beyond the point at which it is countenanced by difficulties of material or other conditions; and, finally, a care to make your symbolic writing legible to the future reader.

NOTE BY MR. GEORGE W. EVE, Author of *Decorative Heraldry*.

The influence of architecture on book-plates is extensively visible in the composition of the designs as well as in the treatment of their component parts. This is evident in the earliest examples no less than in their successors down to the present time, when works of this kind are the subjects of so much artistic effort. And such influence might well be expected when we remember that the heraldry with which they were principally concerned had found its most permanent expression in the adornments of buildings and monuments.

Putting on one side interiors and other views which are frankly architectural, and confining ourselves to heraldic design, we find this influence in the first armorial plate yet discovered: that which marked the books which were given by Hildebrand Brandenburg to the Monastery of Buxheim about 1480. It is reproduced in the introduction to Egerton Castle's *English Book-plates*, and consists of a shield of arms supported by an angel, a conventional design that is familiar in Gothic ornamentation, as may be seen, for instance, in the screen of Henry V.'s chantry at Westminster Abbey.

Another point of interest consists in the use of the panel. In the sixteenth century, so distinguished for fine heraldic work, which was characterised by great freedom and strength, the value of a panel as a basis of design was soon recognised, and the works of Sebald Beham, Virgil Solis, and others, executed in this form, were carried out as completely as if they were, in fact, designs for the sculptured wall decoration which had suggested them. Albert Dürer and his school also show in their armorial work a consciousness of their architectural surroundings, but in a somewhat different manner; for although they were generally content with bold treatment of the heraldic facts (without any special imitation of a carved panel), columns and arches (which were sometimes of vines) were frequently introduced in the background. In the elaborate compositions of Jost Amman, with their columns, canopies, and tablets, we have a still more extensive use of architectural details, with the sculpturesque feeling strongly evident. All the Little Masters seem to have, more or less, thought of heraldry as something to be painted or sculptured on a wall or monument.

The treatment of the armorials themselves was greatly modified by the influence of the sculptures; and coats of arms represented in high relief largely superseded the flatly depicted shields of the earlier work; that which was a necessity of carved work being imitated in engraving and in painting. The simple mantling of the illuminated manuscripts, with its nearer relation to the actual helm-covering, was supplanted by the complications of the later form, and became assimilated to the elaborate Gothic ornament which doubtless suggested the development. This form of mantling was, of course, first used in the carvings themselves, and of these there are well-known examples which do not need to be named. Even in Dürer's "Coat of Arms with a cock," in which the cloth-like treatment attempts a representation of a sort of actual mantle, the intertwining parts follow the suggestion of the Gothic. The more purely ornamental form was, however, the general one, and however admirably and gracefully it might be designed, it always retained, in the quality of its flow, something of the solidity of the sculptured stone.

DISCUSSION OF MR. CRACE'S PAPER.

Professor AITCHISON, R.A., *President*, in the Chair.

MR. J. ALFRED GOTCH [F.], F.S.A., in proposing a very cordial vote of thanks to Mr. Crace for his valuable Paper, and for bringing together so delightful a series of examples to illustrate it, said that there had been of late years a considerable spread of the desire for heraldry and for the use of heraldry, and it was most desirable that architects should be able to represent it well. The interest of heraldry did not consist in a multiplicity of quarterings, which appeared to him to be a vain desire for self-glorification, but in the beautiful rendering of the simpler forms of family arms—not a mass of unintelligible decoration, but a design suitable to the place it occupied, and easily read at a distance. People were largely in the hands of the officials connected with this particular art—namely, the Heralds' College; and one watched with much satisfaction the greatly improved methods now being followed in that institution. Some ninety years ago the kind of arms they granted were absolutely impossible of decorative interpretation. Take an elaborate battle scene. How could that be represented decoratively, with its vast amount of detail? Or take the well-known instance of the gentleman who had contrived to represent the Lord's Prayer on a threepenny-piece, and who, when he had a coat of arms granted to him, wished that to form the principal charge! How was it possible to represent the Lord's Prayer in the size of a threepenny-piece in a decorative manner? * He was therefore glad to know that many officials of the Heralds' College had not only a desire for better forms, but the ability to present them, and in course of time even greater improvements might be expected. One quality of heraldry necessarily inherent in it was vigour, because all heraldic creatures belonged to the male sex. One never saw a lioness represented, for instance; but always lions. The only female—if female it could be called—represented in heraldry was a mermaid. For preferring the male they had Spenser's authority, for he drew the distinction between things which were mortal, imperfect, feminine, and things which were perfect, immortal, masculine! Another aspect of heraldry, also of considerable interest, was how to impart interest to commonplace objects. It might be said to be comparatively easy to draw an interesting lion or an interesting pig. One of the designs by Pugin, illustrated in Mr. Crace's Paper, showed a pig of a most in-

teresting kind. But when one had to draw a porridge pot, or a wheel even, the thing was not quite so easy. One of the exhibits, the Spanish cloth of State, showed how that difficulty might be got over. The lower quartering on the right-hand side represented a wheel in perspective in a very simple, pleasing, and graceful manner, and to represent a wheel in perspective would not strike one as being easy to do in anything but a very commonplace manner. With regard to the mantling, several examples on the screen showed that the old designers always recognised that mantling had two sides of different colours, and the strips into which they divided their mantling were twisted and turned so that the white and the other colour balanced each other satisfactorily—an important thing to remember in dealing with mantling in heraldry. With regard to book-plates, there had been a vast number designed in recent years; and owing to the facility with which people found they could be designed, there had been a tendency to sacrifice the first object of a book-plate to the secondary object of making it beautiful. The first object of a book-plate, he thought, was that the owner's name should be at once intelligible. But in many designed nowadays the name was really the last thing one could ascertain. The man's occupation or his favourite hobbies were portrayed, but his name was probably found in some obscure corner after a great deal of hunting. That seemed to him to be departing from the real heraldic spirit necessary to be preserved in book-plates. With regard to the method of treating heraldry mentioned by Mr. Crace, everyone must agree that it was useless and even harmful, whether in ornament or heraldry, to multiply detail where it was itself lost, and confused the form, and that the best design was that which best fulfilled its purpose as a design. Throughout his Paper Mr. Crace had struck the right note, and if his advice were followed they would be able to design heraldry which would not be merely a copy of mediæval work, but quite distinct and peculiar, as it were, to the nineteenth century, and having as much vigour and interest as anything which had gone before it. That could only be obtained and achieved by becoming familiar not only with the elementary laws of heraldry, but also with the anatomical forms of the animals and the objects to be portrayed.

Mr. W. H. St. JOHN HOPE, M.A., in seconding the vote of thanks, said he had listened with the greatest pleasure to the Paper, and he hoped on a future occasion Mr. Crace would embark further upon the question of Heraldry, and deal with that portion of it relating to badges and their treatment. There were several good examples on the screens showing how the artist in old times

* This instance is quoted in books on heraldry, but since making these remarks I have, by the courtesy of Mr. Everard Green, Rouge Dragon, seen the actual grant of arms to the gentleman who wrote on the threepenny-bit. The legend is wrong. The coin does not appear in the arms, nor in its accessories. The deed is commemorated in a more indirect way—by a Bible bearing a (heraldic) plate, and a dove with a quill in its beak. These are borne by way of crest, and not in the shield.—J. A. G.

revelled in his treatment of badges. Anyone who had gone through old wills, inventories, and other documents which some people considered musty, must have been struck with the way in which badges were used by way of decoration in every conceivable manner; on church vestments, altar cloths, and hangings; in domestic work, from the hangings of the hall to the pavers of the floor, the carvings of the wainscoting, the glass, the bosses of the roof, and elsewhere. Pugin had realised that to the full. The examples of his work exhibited really formed a portion of a series of Royal arms and supporters; but taken singly, as they were shown, they did duty perfectly well for badges. In many of the drawings badges were used, and formed an important part of the design. Mr. Crace had very justly remarked upon the disregard by artists of the proper treatment of crests, helms, and mantlings; and to these might be added the treatment of coronets. It was not, he believed, quite the fact that coronets were restricted to persons of noble rank, because, as many of the drawings exhibited showed, knights used coronets on their helms, and a study of ancient seals would show that probably even esquires did the same thing. But these coronets were treated with an infinite variety quite foreign to the modern artist, who had no other idea of coronets than the wretched things drawn for him in books of reference, whereas reference to ancient authorities would show that coronets were treated with the utmost freedom. There was a fine seal, for instance, of the Lady Margaret Beaufort who founded St. John's College, Cambridge, in which her coronet is formed of fleurs-de-lys and Tudor roses; and such simple things as crosses and fleurs-de-lys were very beautifully treated by mediæval artists. He had recently seen a design emanating from a school of art in the provinces, in which a Royal crown formed the principal part, but the fleurs-de-lys were most miserably rendered, and the crosses perfectly contemptible. Clearly the designer had never studied old examples, and was not aware that just as the old men played all sorts of games with their heraldry, so when it came to details such as coronets, they did the same thing. If one wanted a grand specimen to refer to, there were none better than the gorgeous crowns surmounting the badges in King's College Chapel, Cambridge. Every one of them was a masterpiece in its way, and no two were alike, yet each one was a Royal crown of England. Then there was the question of parti-coloured fields, which played a part in some of the drawings shown by Mr. Crace. Reference to old documents showed that hallings, as they were called, or the sets of hangings round a hall, were often built up of a series of striped fabrics, which were powdered all over with badges, and made to look very splendid. Therefore he hoped Mr. Crace would give them a further edition of heraldry

from that point of view, because he was eminently capable of taking some of the references to old documents, reproducing them on paper, and showing what beautiful things they were, and their absolute applicability to modern requirements and modern artistic tastes.

Mr. W. A. LINDSAY, M.A., F.S.A. (Windsor Herald), thought both the lecturer and Mr. Gotch were unwittingly rather hard upon the College of Arms. He agreed with everything they said as to the absurdity of some of the grants of arms that had been made—more in the last century than in this—in which threepenny-pieces and other absurdities were represented; but it should be recollected that whatever faults the then members of the College of Arms committed were due probably to their assenting too readily to what the public asked for, rather than to their proposing anything to the public. For example, he might mention a coat of arms he had often contemplated with horror, which represented the very great and distinguished general, the late Sir James Scarlett. He was represented in the books of the College of Arms with two supporters, one of which was a black horse—a Life-guardsman's horse—and the other was a Life-guardsman in red on the other shield. No herald ever designed that coat of arms and supporters, and it must have been done at the particular request of Sir James himself. No doubt it might be said that the College of Arms ought never to have assented to such a proposal; but still the fault lay primarily, as in this case, with the individual, and in most cases with the public in asking for designs which were neither heraldic nor in good taste. He himself had been asked to propose arms which he considered as objectionable as those he had referred to, and of course he had refused; but it was not always possible, where they were dealing with a public body, to refuse altogether to do what was asked. He had listened with the greatest interest to the Paper, and he hoped that the subject would receive greater attention, for there was no doubt heraldry was a most charming form of decorative art, provided the pure forms of heraldry were adhered to. When heraldry was used for minor forms of decoration, such as book-plates, decoration was the principal object, instead of being a mere accessory, for he must altogether demur to the observation that the name of the person to whom the book-plate belonged should be made a prominent object in the book-plate. Wherever that was done, as great an absurdity would be committed as would have been the case if the young lady, in the story told by the lecturer, had written "This is a rabbit," below her picture! When the heraldic book-plate meant anything at all, it told the name of the owner without printing his name in letters.

Mr. WILLIAM WHITE [F.], F.S.A., observed that the object of heraldry, as Mr. Lindsay had said, was for the purpose of transmitting the name

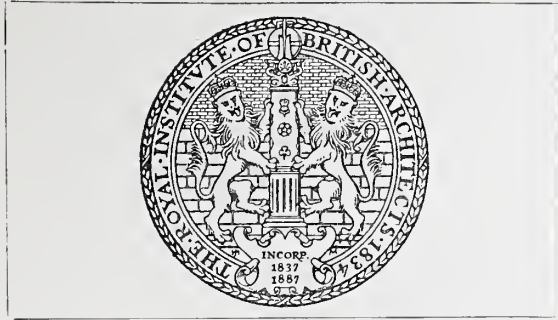
as written in heraldry rather than in letters, as it was from the old shields that they received the tradition of the names; the shields had no name attached to them.* As far as he understood, it was quite a modern invention to introduce the name at all. The difficulty which had arisen from the ill-representation of heraldic forms, heraldic devices, and heraldic principles had arisen from the absolute neglect of the school of heraldry, as not long since was the case with the school of architecture. The only way to revive the knowledge of heraldry was to have popular lectures and popular explanations of it.

THE PRESIDENT, in putting the vote, observed that Mr. Crace's Paper dealt with perhaps one of the most becoming subjects that could be treated of before an Institute of architects, if Addison's translation of one of Martial's Epigrams gave them the meaning of Martial's advice to a father who wanted to bring up his son to a lucrative employment. It ran:—

If of dull parts the stripling you suspect,
Make him a herald or an architect!

MR. CRACE, in responding, said that he entirely agreed with Mr. Gotch's view that vigour is a very essential element in heraldic drawing. He was glad Mr. St. John Hope had called attention to the importance, as a decorative subject, of that division of heraldry which came under the description of badges, which was a subject quite deserving of an article or a Paper to itself. The decorative use of badges was very extensive, and was perhaps more easy to apply than more absolutely heraldic forms. What Mr. Hope also mentioned as to the parti-coloured backgrounds, the striped hangings, was also a subject which might occasionally occupy the attention of those concerned with internal decoration. He should like to say, in response to the remarks of the Windsor Herald, that he had endeavoured to avoid any appearance of criticising the Heralds' College, otherwise than as a part of the general public, in that decadence of taste from which not even the Institute itself was wholly free. He had particularly said in his Paper that he thought the College of Arms only shared that lapse of taste which the British public was somewhat conspicuous for in the first half of this century, and not altogether free from in the second half. He was afraid he could not support Mr. White's remark about the use of the name with the shield being a modern invention. Among the Windsor stall-plates exhibited it would be found that the very oldest had not only the arms of the distinguished persons who were made Knights of the Garter, but their very distinguished names under them in a great number of cases.

* As exception was taken to this statement, I should like to add that the names which appear beneath the banners in the "National Record" of the Knights of Windsor did not appear on shield or crest of those who fought in tournament or battle in the days of old.—W. W.



9, CONDUIT STREET, LONDON, W., 26th March 1898.

CHRONICLE.

Presentation of Mr. Penrose's Portrait.

A numerous gathering of members and visitors witnessed the unveiling and formal presentation to the Institute of the portrait of the ex-President, Mr. F. C. Penrose, F.R.S., with which the proceedings opened at the Meeting of Monday, the 21st inst. The portrait, which has been subscribed for by members of the Institute, is the work of Mr. J. S. Sargent, R.A., and the ceremony of unveiling was performed by Mr. L. Alma Tadema [*H.A.*], R.A., who was a member of the Committee charged with the duty of obtaining subscriptions and making the necessary arrangements.

The President, in opening the proceedings, said the Committee had had the good fortune to get Mr. Sargent to paint the portrait, and as he (the President) had had the pleasure of seeing it, he was in a position to say that it was one of the finest works the Institute possessed, though it could boast of portraits by George Richmond, John Phillip, Frank Holl, J. P. Knight, Boxall, Mr. Oules, Mr. Orchardson, and Mr. Alma Tadema.

Addressing the Meeting before uncovering the portrait, Mr. Alma Tadema said that he considered it a great privilege to be called upon to unveil the portrait of a man he esteemed so highly, painted by another he did not esteem less. He had once taken the liberty of calling Mr. Penrose "our Athenian," and he continued to do so. Mr. Penrose was the man who had pointed out to them that there was life in the straight lines of Greek architecture, and it was appropriate that this portrait should be painted by the artist who showed them that there was life in the lines of the brush. The Institute now possessed a portrait of the distinguished President who during his term of office had been one of the three architects in the world chosen to advise as to the best means of restoring—no, he must not use the word "restore"—of *saving* the greatest modern monument of architecture from further decay after the seismic disturbances of its construction. To have a portrait of such a President must be a pleasure to all; to have such a good

portrait was a matter of much gratification to the subscribers. The Institute was getting such a nice collection that he had suggested that day to a member of the Council that they should seriously think of building a little gallery for them; because though good things were always good things, and remained good things, still one appreciated them better when they were in a suitable position. But that was a matter he must not judge of. He only wished to say that Mr. Penrose's portrait was a valuable addition to the Institute collection, and it was a great addition to the history of the Institute that such a President should be so well represented.

Mr. Alma Tadema then unveiled the portrait, which was greeted with warm applause, and turning to Mr. Sargent, who was present as the Council's guest, tendered him the thanks of the Committee for the beautiful work he had executed for them.

The President said it was his pleasant duty to say a few words about their past President, Mr. Penrose. He was one of those architects who had conferred dignity on their art, not only by his knowledge, talents, and the advances he had made in the theory of architecture, but also by his devotion to the science of astronomy. His name was, and would for ever be, identified with the optical refinements of Greek architecture. It might be recollected that Plato, in one of his Dialogues, complained of architects falsifying realities, for instead of making the lines of things as they are, they make them to look right. Not being a philosopher, he (the President) could only say that he was thankful for those delicate sensibilities that the Greeks possessed, for they made each part of their buildings so delicately and so exquisitely varied that the Parthenon was like one of the works of nature that they could look on for ever without being satiated or disgusted. There were two passages in Vitruvius, on the curvature of horizontal lines in temples, which had bothered the annotators from the time when the Codex of Vitruvius was rediscovered by Poggio, in 1414, till the days of Wilkins, the great architect who built the National Gallery, University College, London, and many other fine buildings. Before Wilkins' time none of the annotators had the least idea of what Vitruvius meant. Galiani had an idea that the curves were made to bulge outwards, but Wilkins read the passage aright—that it had been observed by the Greeks that the long straight lines when seen from above looked hollow, and that when they were above the eye they looked as if they had sagged. Now Wilkins, with an honesty which was perhaps not common in a discoverer, said that he had examined all the principal buildings of antiquity, but he had never observed that curvature. The fact was that all the straight lines in the Parthenon—below the eye—were encumbered with ruins. John Pennethorne, the brother of Sir James, was a learned architect, and

happened to be at Athens after Wilkins' discovery, and the stylobate and the steps of the Parthenon were less encumbered with fragments and rubbish than they had been before; so he set to work, with the means that he had at his disposal, to see whether these theories of Vitruvius were borne out by the facts; and he believed that they were. There was a great controversy about this, and Mr. Penrose offered to go and settle the matter. The Dilettanti Society, to whom they owed so much for their publications on Greek architecture, furnished him with the means, and with his knowledge of architecture, and his mathematical attainments and his instruments, he proved for all time that these delicate curves really existed. A little while ago the newspapers reported that Dr. Galton affirmed that the Greeks were as superior to the present inhabitants of Europe as the inhabitants of Europe are to the negro. Be that as it may, Vitruvius stated, in his fifth book, that harmony was most difficult to those not knowing Greek, as there were many Greek words on the subject for which there were no Latin equivalents, from which it might be inferred that many of the Greek notes were such slight variations from the others that they could not be appreciated by Roman ears. He did not know a more eloquent description of the buildings at Athens than that given by Ernest Renan. After his visit there he said that he had often heard, read, and dreamt of perfection, but he never saw it till he went to Athens. He (the President) could not remember the whole passage, which was as eloquent as most of his writings. Members would be glad to have amongst their excellent collection of portraits this charming work of Mr. Sargent, and were grateful to him for giving them so admirable and striking a portrait of their past President, with all that refinement of feature that so marked the man of science combined with the man of art. The divine art of which Mr. Sargent was so excellent an exponent, gave new delights to life, and fixed for their enjoyment and study those beauties which, from their nature, were evanescent. He could hardly venture on saying all that he should like to say on the divine art of painting. It was given to the few who were blessed with the gift to hand down to them the portraits of the great men and of the beautiful women who had lived in their time, the various striking scenes of comedy, tragedy, and of everyday life, and the lovely phases of landscape that only existed for a moment.

Mr. Sargent briefly acknowledged the kindly references to his work.

Mr. William Woodward [A.] said he was sure he was only giving expression to the feelings of every Associate in saying that there was no portrait upon the walls of the Institute upon which they should look with greater pleasure than upon the excellent portrait of their dear friend Mr. Penrose.

Mr. Crace's Paper.

Among the distinguished visitors to the Institute on Monday evening attracted by the subject of Mr. Crace's Paper were the Earl of Stamford, who was presented to the Chair by Mr. William White [F.], F.S.A.; officials of the College of Arms, including the *Windsor Herald*, Mr. W. A. Lindsay, M.A., F.S.A.; two of the four Pursuivants, Mr. G. W. Marshall, LL.D., F.S.A., *Rouge Croix*, and Mr. Everard Green, F.S.A., *Rouge Dragon*; Mr. G. W. Eve, author of *Decorative Heraldry*, and Mr. W. H. St. John Hope, M.A., whose Paper on "Heraldry in English Mediæval Architecture" read last Session, and that of Mr. Gotch, on the "Heraldry of the Renaissance in England," at the meeting following, will be fresh in the recollection of members. The illustrations exhibited included a series of cartoons from the stained glass in the Houses of Parliament designed by A. W. Pugin and to a great extent probably drawn by John Powell; cartoons of a similar kind by Clement Heaton; sketches for a Genealogical Tree by Pugin; designs for book-plates by James West, and a set of engraved book-plates by Mr. George Eve; a fine set of photographs of Spanish architecture heraldically ornamented, lent by Mr. Alex. Graham [F.], F.S.A.; and about thirty coloured drawings from the Windsor Stall-plates. There was also displayed a magnificent Spanish embroidered cloth of State, work of the latter part of the sixteenth century, kindly lent by Messrs. Duveen Brothers of Bond Street. Specimens of heraldic fabrics and papers designed by Pugin were also shown.

Monsieur Harmand's Paper.

On Monday, the 4th April, Monsieur Georges Harmand, Avocat à la Cour d'Appel, Paris, will read before the Institute a Paper on "Copyright, and its Use for Architects and Artists." Monsieur Harmand, who is a Membre du Conseil Judiciaire de la Société Centrale des Architectes Français, et de la Caisse de Défense des Architectes Français, is a recognised authority on the copyright question, and has been struggling for many years to obtain for architectural works the same safeguards by copyright as possessed by books and other works of art. As Monsieur Harmand is coming from Paris expressly to read this Paper, it is exceedingly desirable that as full a Meeting as possible should welcome a foreign guest. The Secretary will be glad to send cards of invitation to any members who have friends, legal or otherwise, interested in the subject. Monsieur Harmand will read his Paper in English.

Fireproof Staircases.

The article by Mr. William Simpson [H.A.] "The Stair of the London Dwelling House—A Death Trap" [p. 171], has been read with some attention by certain municipal bodies engaged in the re-

vision of the Building By-laws. Whether it will lead to the adoption of Mr. Simpson's suggestions remains to be seen. But the deliberations of the local committees certainly point to an awakening to the necessity of legislative action as to some form of fireproof construction that will ensure safe egress for inmates.

The late James Edmeston [F.].

The following notes of Mr. Edmeston's professional career have been kindly contributed by Mr. Edward Gabriel [A.], who had been associated in partnership with the deceased for fourteen years:—

James Edmeston, whose long and active career was brought to a close on the 6th inst. in his 75th year, was one of the oldest members of the Institute, having joined as an Associate in 1856, becoming a Fellow three years afterwards, and subsequently serving on the Council in the years 1868-69 and 1876. He was one of the promoters, and until quite recently Chairman, of the Architectural Union Company. Under his direction the Conduit Street Galleries were erected, the original intention being to provide accommodation for the annual exhibition of architectural designs and drawings. He took an active interest in the work of the Institute, in January 1860 contributing a Paper "On the Use of Zinc in Roofs, and the Causes of Failure therein," of which the discussion only appears in the TRANSACTIONS of that year, an illustrated copy of the Paper having been presented by the author to each member. In June 1861 he read a Paper on "The Proposed Embankment of the Thames" [TRANSACTIONS 1860-61, p. 280]. He was also one of the founders of the Architectural Association, being President as far back as 1853-54, and a Vice-President during the previous year. He was a Fellow of the Surveyors' Institution, and a member of the District Surveyors' Association.

Mr. Edmeston was the pupil of the late Arthur Ashpitel, with whom he remained for some years as managing assistant, and then commenced his long association with the City, where he built up an extensive practice in connection with various banks, offices, warehouses, and other buildings for commercial purposes. Of late years his wide experience, tact, and judgment made his services in much request in arbitrations, and as assessor in architectural competitions. He was Official Arbitrator to the City of London Court in cases of building disputes, and also one of those appointed under the Board of Trade. The death, in 1884, of his only son, James S. Edmeston, who had been in partnership with him for many years, and who was a pupil of the late Sir Gilbert Scott, was a great blow to him, but borne with fortitude, and he continued actively engaged to the close of his busy life. Recent buildings which he carried out in association with Mr. Gabriel include the London and South-Western Bank, and a large

number of suburban branches, the Blackheath Concert Hall, School of Art, and School of Music, Public Libraries at Tottenham and Kilburn, the Willesden Fire Brigade Station, Willesden Isolation Hospital, Willesden Coroner's Court, and many buildings in the West of England.

For a long period he was Chairman of the Society for the Encouragement of Fine Arts, and upon his resignation, some time ago, owing to advancing years, was elected a Vice-President. He took a deep interest in Freemasonry, and was a member of Grand Chapter and Grand Lodge, having a few years ago held the office of Past Grand Superintendent of Works. Apart from his professional work he took a great interest in municipal life, and was one of the oldest members of the City Corporation, having been a member of the Broad Street Ward since 1868, and being elected Deputy of that Ward in 1880. He was President of the Paddington Conservative Association and on the Committee of the Conservative Club.

The late Sir Henry Bessemer [H.A.].

By the death of Sir Henry Bessemer, F.R.S., which occurred on Tuesday, the 15th inst., the Institute loses one of its most distinguished members. Although his name is identified with the invention of his world-famous steel process, the fields of his activity were wide and varied. He was a member of most of the European learned and scientific societies, and had been an Hon. Associate of the Institute since 1879. He was eighty-five years of age. Members will receive the news of his death with profound regret.

REVIEWS. LXIX.

(186)

SCOTCH ECCLESIASTICAL BUILDINGS.

The Ecclesiastical Architecture of Scotland from the Earliest Christian Times to the Seventeenth Century. By David MacGibbon and Thomas Ross, Authors of "The Castellated and Domestic Architecture of Scotland," Vols. II. and III. Roy. 8o. Edin. 1896-97. Price of the complete work, £6 6s. net. [David Douglas, 10, Castle Street, Edinburgh.]

Of writing many books there is no end. Some books justify their own existence; some seek to justify the existence of books already written; while others find justification nowhere, even although it be sought carefully, and with tears. The book under review belongs, I think, undoubtedly to the order of books which justify their own existence, for it deals in a simple and direct, yet withal comprehensive fashion, with a subject of national importance, and of real interest. It is written, moreover, in a quiet and orderly manner, as becomes a book that is largely encyclopædic in character, and full of architectural, archæological, and historical references. Furthermore,

the arrangement of the matter is good, while the illustrations are not of the too eagerly individual order, but are rather clearly and well-drawn pictorial diagrams, showing not only judiciously selected and extensive views of buildings, but also interesting and useful features of detail or construction, where these are possible and desirable; all of which are commendable as notes of reference and valuable linear records of existing facts, made from apparently actual observation. Earlier workers in the field of Scottish ecclesiastical, as of castellated, architecture are Grose and Billings; and while both have produced excellent and notable works covering a wide area, Messrs. MacGibbon and Ross's volumes are almost entirely comprehensive, and there are few important or characteristic ecclesiastical buildings, even if of small size, which do not find acknowledgment in their pages. From beyond John o' Groat's house, even from furthest Shetland, from St. John's Kirk, Unst, to Kirkmaiden, in the Mull of Galloway; from the Hebrides to Buchan Ness and Berwick-on-Tweed, do they range and record with goodwill and purposelike enthusiasm; for none, surely, save those keenly interested would travel so far, or work with such assiduity.

The only adverse criticism that may be adventured, even if in such a work it be not indeed itself a measure of commendation, is, that in neither letterpress nor illustration, have the authors been visibly influenced by the poetic grandeur or the abounding faith of which the monuments they so tersely describe, are full. The glorious old buildings awaken, seemingly, no responsive emotion, and the volumes testify impartially and critically of the outward appearance and form, rather than of architecture itself. The book is clearly a scientific treatise, lucidly and admirably setting forth its facts, but in no sense is it a volume of art; and neither, as such, can it be now considered. None the less, excellent is each volume; not each better than the other, but each full of sustained interest, and so written that one is able to understand and retain, with comparative ease, much of the whole matter contained in the work. And surely the true test of a real book is, that one looks eagerly forward to each succeeding volume—to the next, and the next—and that when completed, it is a *magnum opus*.

Volume I. has been already reviewed, in the JOURNAL of date 5th November 1896, and now the publisher is again good enough to submit the two succeeding and final volumes, for a similar purpose. The first volume closed with a description of work prior to the thirteenth century, and the high encomium given to it by its reviewer, and his anticipatory hopes for the succeeding volumes, have, in them, been alike justified and realised.

The period covered by the latter volumes—the beginning of the thirteenth to the close of the seventeenth century—is, in its earlier portion, of

all Gothic architecture, that of the most beautiful and interesting work, whether considered in spirit, in mass, construction, or detail; and outstandingly so, is this the case, during the period covered by the second volume. In it, we have a record of the growth and development of the first and second pointed styles, as exhibited in Scottish ecclesiastical buildings. Following a well-written preface, the volume fittingly opens with a description of the Cathedral of St. Andrews, the former ecclesiastical metropolis of Scotland, and the capital of the ancient kingdom of Fife. Over twenty separate illustrations, and many pages of historical and descriptive letterpress, are accorded to this ruin; while by the courtesy of Mr. John Kinross, a plan showing the recently excavated conventual and other buildings attached to the cathedral is given, at once showing the extent, and, in part also, the result of the operations recently undertaken by the Marquis of Bute. The fulness and care with which this building is considered are indicative of a general practice, rather than an isolated instance, of the thoroughness and exactitude manifest throughout the entire work. Thereafter, and following in succession St. Andrews, are Arbroath Abbey, Holyrood Abbey, Edinburgh, Kilwinning Abbey, Ayrshire, Dunblane Cathedral, Elgin Cathedral, Pluscardine Priory, Glasgow Cathedral, Brechin Cathedral, with its ancient round tower; Sweetheart Abbey, supremely beautiful in its deep and weathered red sandstone, its greensward, surrounding trees, and mighty hill of Criffel; then eastward once more to its sister shrine of Melrose, a Cistercian foundation also, and one of richer elaboration and poetic fame, but surely not of truer form. Last of all to be here noted, St. Giles; with yet many another of lesser name and renown, quiet town and village churches, each in its time serving as epochs of faith, and love of art. Of the buildings instanced, save only St. Giles, Dunblane, and Glasgow, all are dilapidated; and one looks in wonder at the havoc and desolation wrought by man, an enemy of fiercer power and more vindictive will, than time itself. Pathetic and sad are the lichened stumps of lonely pier bases—foundations of former grandeur and lofty heights achieved—the broken arches, the unglazed windows, the roofless walls; the very altars are destroyed: and one looks longingly through broken traceries, where even it takes a poet to rejuvenate the glorious edifice, as it came from the hand of the workers; and the dear air looks in wistfully, as if deprived of the prayers that rose up uncurbed to the sleeping arches—

Here the long Miserere wailed to God,
And the Gloria leaped heavenward.

The great central towers of many noble churches are buried even in the ground. St. Andrews and Elgin, Arbroath, Holyrood, and Kilwinning, where

are they? Only Glasgow, Pluscardine, Sweetheart, St. Giles, of these named, remain.

To no church in these volumes is greater space given, than to St. Mungo's Cathedral, which is abundantly illustrated and fully described. Its beautiful lower church, authoritatively said to be one of the most beautiful in the world, is delineated by plans and views. Mr. John Honeyman, than whom, perhaps, none better knows the cathedral, is quoted largely in the text. Mr. T. L. Watson's ingenious exposition regarding the vaulting of the lower church, the sequence and development of the mouldings of its vaulting ribs, is referred to at length; while, again, in the preface to the succeeding volume, the authors seek to withdraw from Mr. Watson's interpretation, and support a theory advanced by Mr. Macgregor Chalmers, who joins issue with Mr. Watson on his views. In this, at least, authors and disputants have surely common ground, that the beautiful architecture, of whatever minute exactness of date and sequence, is shamefully obscured, and well-nigh hidden altogether, by the hideous and unsightly glass which disfigures the windows of the edifice. Probably in no other ancient building is so much wretched glass seen. While one is somewhat critical, it may not be unseemingly, if I venture to correct, not an error in regard to architectural fact, but a misreading in reference to a book of my own, of which the authors have been good enough to speak, as also to refer to me by name, and apparently to prove that I have propounded a wrong theory from certain unsupported data. As a matter of fact the authors and I are entirely agreed; only, in referring to a portion of my book on Crosraguel Abbey, relative to the choir and sacristy wall, they have inadvertently attributed to me a statement which I did not make, and then they most courteously, and at some pains, prove that my assumed statement is wrong.

In the final volume, as in its predecessor, there is an ably written and accurate summary of the characteristic features of the third, or late pointed period. Paisley Abbey, Dunkeld Cathedral, Iona Cathedral, St. Machar's Cathedral, Aberdeen, Rosslyn Church, and many others are described. What at one time was Trinity Church, Edinburgh, is also noticed, and sufficiently illustrated to awaken keen regret that railway enterprise should necessitate the destruction of such living monuments of other days. The closing chapter is devoted to the work of the sixteenth and seventeenth centuries, and if it treats of buildings of small importance, it is none the less of much interest; and in it, as in previous chapters, the historical and social—if not the intellectual—causes influencing, and in part impelling, the architecture of the period, are fully considered.

Interesting is it to note, that Scottish ecclesiastical foundations were often, in part at least,

fortified, and made places of strength; and that in them "sword and Bible seem strangely familiar, and church and tower go hand in hand." The influence of close intercourse and friendship with other countries is noted; and the famous French workers of James IV. and V., the Merliouns, who laboured in the Royal service, is instanced, as also that the dignity of "King's Master Mason" became a Court appointment.

The chronological classification adopted by the authors is probably the best, and it appears to be well observed and sustained throughout; yet, as is unavoidable in a work of wide range, one comes across building of early date, in structures tabulated under a later period; but, on the other hand, as is pointed out, nearly all the large churches of the third period are restorations, and no new churches of great size were undertaken during this later period. The volumes abound in useful facts, interesting dissertations, and certain comparative analyses of the dates and characteristics of Scottish ecclesiastical architecture; but in a country such as the Scotland of the Middle, and even later, Ages, broken as it was by war and internecine strife, it cannot be a subject of wonder if architecture did not find such lavish encouragement as in more peaceful realms; and that the development and changes of its successive stages were sometimes slow in reaching, and in being applied to, outlying districts and places difficult of access, throughout the land. In conclusion, the authors have done their work for time—and, as it seems—once, well, and for all, little within its own scope having been left unrecorded for future gleaners. The topographical and general indexes at the end are of much value for reference, as the books well deserve; and the volumes themselves are of convenient size, well printed, with good margins, good paper, and suitably bound. It may be indisputably accepted, that *The Ecclesiastical Architecture of Scotland*, like *The Castellated and Domestic Architecture of Scotland*, by the same authors, is a work of real merit, and large value; and there is little doubt but that it is, and will remain, the standard work upon the subject.

Ayr, N.B.

JAMES A. MORRIS.

(187)

PARTY STRUCTURES.

Party Structures: London Building Act, 1894. Part VIII. By Sydney Perks, A.R.I.B.A., author of "Dilapidations." Fep. So. Lond. 1897. [The St. Bride's Press, Limited, 24, Bride Lane, Fleet Street.]

With the advent of the new Building Act, our profession was not idle in mastering its details, and Mr. Heathcote Statham published a critical analysis of the Act, which work quite fulfils its title, and besides describing what is new in the Act of 1894, points out differences in respect of the Act of 1855. Following on this, Mr. Banister

Fletcher and Mr. Bernard Dicksee both compiled very useful works on the Building Act. Nor was the legal profession backward in providing information, Mr. Alexander J. David, Mr. W. F. Craies, and Messrs. Cunningham Glen and Arthur Bethune, and Messrs. Griffith and Pember (the latter of whom carried through the Bill in the House) also issued valuable works on the subject.

Mr. Sydney Perks has made a laudable effort to supply a want which, as above shown, does not exist. The merit of this *brochure* is, that it is compact and inexpensive; its demerit, the controversial character of its contents, tending rather to obscure than to enlighten or properly interpret. It is premature at present to criticise an Act which has only been a few years in existence. That it was an honest, though somewhat awkward, attempt of the London County Council to amend the Act of 1855, which had so well served its purpose for over forty years, no one will gainsay. That the Act of 1894 has some inconsistencies—and even contradictions, due to self-evident causes—no one can deny; but it is equally certain that these can only be satisfactorily rectified by judicial interpretation, which must surely be appealed to as time flows on. Meanwhile, it is undesirable to raise questions of a complicated nature which, all who have to administer the clauses of the Act will concur, would be better to allow to lie dormant until the occasion arises for their discussion. It is always undesirable to increase difficulties, to foster or to engender litigation. The duty of our profession is to endeavour loyally to carry out the spirit and intention of the Act, so far as its members reasonably can.

Mr. Perks should have called attention to the fact that a *right* to raise a party fence wall, or to pull down the same and rebuild as a party wall, is only a *right* in relation to *party* structures, and not otherwise (*List v. Tharpe*); and that chimney breasts cannot be removed without a certificate from the District Surveyor (sec. 64, sub-sec. 19).

Respecting sec. 93, which is a new and important section of the Act relative to underpinning, there seems to be no "ambiguity" about it. It applies only where a building owner intends to erect, within ten feet of an adjoining owner's building, a *new* building or structure, any part of which, within such ten feet, extends to a lower level than the foundations of such building belonging to the said adjoining owner. It does not apply where there is an *existing* building, and such existing building is to be underpinned, because this is provided for in the *right* which the building owner has under sec. 88, sub-sec. 6; and I therefore think Mr. Perks has misapprehended this section.

Then, with regard to sec. 91, it is quite clear that the surveyors appointed have to settle from time to time, during the *continuance* of any work to which the original notice relates, any dispute which may arise; and any matter upon which

there is a difference of opinion may be referred under the award for further award with respect thereto; and this procedure, so far as I know, has never been questioned; but Mr. Perks is clearly wrong in stating that the surveyors can, under sections 91 or 93, hear witnesses on oath. The matter in dispute must be settled by the three surveyors, and it is for the purpose of avoiding the expenses incurred in summoning witnesses, solicitors, counsel, and others that the procedure under this section is provided. The Arbitration Act of 1889 does not apply to these sections, but it does to sec. 107, sub-sec. 2, which, as its wording shows, is an arbitration under the Arbitration Act, and a reference to Mr. Glen's or Mr. Craies' work will show that they consider that this is so, and why the distinction arises.

A word as to the raising of party fence walls. It must be always borne in mind that the building owner has only a right to raise a party fence wall or to pull it down and rebuild it as a *party wall* under sec. 88, and that that *right* is given *only* in relation to *party* structures; *i.e.* you cannot raise a party fence wall unless it is intended to make it a party wall; and a party wall must either be for the separation of buildings, or standing part on the land of adjoining owners, and still be part of a building. A misinterpretation of this section may lead to serious difficulties.

A large proportion of Mr. Perks' *brochure* is, as I have said, composed of controversial points expressing his own unsupported opinion. One would have thought that the cases of *Weston v. Arnold* and *Crofts v. Haldane* would have settled the question as to what proportion of the height of a party wall belongs in common to two buildings, and where it ceases to be a party wall for the rest of its height, and sec. 53, sub sec. (b), gives its length; but Mr. Perks "thinks not."

Again, with regard to the valuable work done by the Institute, with respect to their notice forms, Mr. Perks takes exception. The only objection is their price; if this were less they would, I think, be gratefully and universally adopted.

For forty years, in carrying out the Act of 1855, there has been no difficulty in understanding the meaning of the words "necessary works," and it is hard to comprehend why there should be any with respect to the Act of 1894. Unfortunately, we cannot, as Mr. Perks would desire, construe the Act according "to its intention"; we have to interpret it as it is written. But, after all, the whole of Mr. Perks's remarks are summed up on page 22, where he says that "an experienced surveyor would not allow any of the liberties which he suggests can be taken, but would at once insist on an award."

I think the advice given on page 55, not to fill in the name of the owners, on a notice, but to address it "to the owner" of the premises, and then, if no person can be found, to fix a copy of

the same on a conspicuous part of the building, is an unwise recommendation. A recent case, taken by the London County Council to the Superior Courts, upholds my view; it is possible and more than probable that litigation would be occasioned by such a procedure. The notice should be given to the owners; efforts should be made to find them, and evidence should be ready to show that these efforts have been made. When this has been done, and ineffectually, then and then only should the notice be affixed to the premises; and it is quite evident that the R.I.B.A. think the same, because, on their form "A," the address is "To Mr. — of —." If any procedure was afterwards taken with regard to the serving of the notice, a magistrate would decide that in the one case the notice had not been properly served, and that in the other it had been, because no trouble had been spared to ascertain the address or addresses of the several adjoining owners. I admit it is a difficulty, but this is the way to meet it.

With respect to the stamping of an award, the cost is £1 15s. and 5s. for the duplicate or counterpart, and I know of no instance where an estimate of work has been included in a party wall award, and if it were, I think it would be *ultra vires*, and would not affect the question of the stamping.

If the question of light and air is, as Mr. Perks says, beyond the province of surveyors under the Act, as undoubtedly it is, why does he comment on it at all? Section 101 clearly removes all questions of this character out of the Act. Whether it is advisable or not that these questions should come under the Arbitration Act of 1889, it is clear that at the present time they cannot come under the Building Act.

Then Mr. Perks seems to question the power of the District Surveyor to prevent certain irregularities or evasions of the Act. Here, again, he is under a misconception, for if the opening, shown in his illustration No. 15, was in an external wall, and the adjoining owner wished to convert it into a party wall, the District Surveyor would not allow it to be done whilst the ancient light existed. If the owner of the ancient light declined to allow the window to be closed, so as to make the wall a party wall in conformity with the provisions of the Act, the District Surveyor could and would object to the adjoining owner raising his building as shown; and so with regard to other matters referred to in the pamphlet. Where works are not in conformity with the provisions of the Act they cannot be executed.

The Act being a consolidation of so many Acts, it is a praiseworthy object to endeavour to dissect its various parts and to try to throw some light upon the meaning of the various sections, and the intricacy of their verbiage, and for so much I think we may thank Mr. Perks.

H. H. COLLINS.

NOTES, QUERIES, AND REPLIES.

The Round Towers of Great Britain.

From E. W. HUDSON [A.]—

These have been described, and their origin and uses treated of and discussed, as much as any other ecclesiastical subject, by architects and antiquaries; and as they are akin to the subject of Campanili, and desire for collected information was expressed by a speaker at the Meeting of the 21st February, perhaps I may be allowed to say that, in the *Dictionary of the Architectural Publication Society*, there is a list of books, pamphlets, and papers upon the subject—vol. vii. p. 76, to which reference can be made.

In 1831 two Papers were published by the Society of Antiquaries; one by Mr. Samuel Woodward, of Norwich, the other by Mr. John Gage, F.R.S. (*Archæologia*, vol. xxiii.), illustrated by eight quarto copper-plates, of English round towers, most of them in Norfolk and Suffolk, with details of arches, mouldings, &c., drawn to scale by Mr. J. C. Buckler. Reference is made to others in Berks, Essex, Cambridge, and Sussex; the total in England is said to amount to at least fifty, the highest being under sixty feet, the diameters varying from eight to fourteen feet, and the thickness of walls from two-and-a-half to five feet. In nearly every case they are attached to and form part of the church.

Mr. Gage thinks that there is no affinity between these English and the detached Irish examples, and that they were not introduced into East Anglia by Fursæus the monk, who came thence and built monasteries here; in fact, that, though of Christian origin, none of them are of the Saxon period, but the oldest, even, is of the Norman period, and only one dates prior to the twelfth century. They are built of flint, sometimes having bands of thin brick or tile; the face battered for the whole height, or, at least, up to the commencement of the upper stage. In most cases the floors were of timber, but there are exceptions; the windows are mere slits, except in the higher stage. Many of them contain bells, but the unsuitability of shape probably caused their discontinuance.

Their objects have been variously given, as (1) places of refuge or sanctuary; (2) depositories for relics, records, and valuables; (3) belfries; (4) sepulchral monuments.

To select one or two from the Dictionary list: Mr. Geo. Petrie's work, *The Ecclesiastical Architecture of Ireland anterior to the Anglo-Norman Invasion*, published in 1845, deals with Irish remains, and Suckling's *History of Suffolk*, 1846; Gage's *History of Suffolk*, 1838, contains particulars, steel engravings, and woodcuts of many in that county.

On the subject of the Irish towers, a Paper was

read at the Institute by Mr. G. M. Hills, on 11th January 1858. Remains of more than a hundred are said to exist there, and about twenty are almost perfect. They are much loftier than the English towers, ranging from 60 to 130 feet high.

It is not unreasonable, perhaps, to suppose that the idea was taken from the round towers of Ravenna, such as S. Apollinare and S. Giovanni Bat. At Brixworth, Northants, the well-known square with round tower, fifteen feet diameter, attached, bears some resemblance to them, and is shown in Britton's *Architectural Antiquities*, vol. v., plates 2 and last, both in elevation and perspective; also details of the triplet opening with its two mid-wall columns, and flat stone carrying the semi-circular tile arches of the opening.

MINUTES. X.

At the Tenth General Meeting (Ordinary) of the Session held Monday, 21st March 1898, at 8 p.m., the President, Professor Aitchison, R.A., in the chair, the Minutes of the Special and Ordinary Meetings held 7th March 1898 [*ante*, p. 263] were taken as read and signed as correct.

The Right Hon. the Earl of Stamford, who was present as a visitor, was presented to the Chair by Mr. William White [F.], F.S.A., and welcomed by the President.

Mr. John Ormrod [A.], attending for the first time since his election, was formally admitted and signed the Register.

Mr. Wm. Woodward [A.] having requested that a note of any communications which had passed between the Council of the Institute and Her Majesty's Office of Works with respect to the new Government Offices at Whitehall, might be inserted in the next issue of the JOURNAL for the information of members, the President replied that, the matter being confidential, the Council were unable to accede to his request.

A subscription portrait of the ex-President, Mr. F. C. Penrose, F.R.S., painted by Mr. J. S. Sargent, R.A., having been formally unveiled by Mr. Alma Tadema [H.A.], R.A., was presented to the Institute, and the gift acknowledged by the President.

A Paper by Mr. J. D. Crace [H.A.], entitled HERALDIC DRAWING AND ITS ADAPTATION, having been read by him and discussed, a vote of thanks was passed by acclamation to the author, and to Mr. G. W. Eve for notes and illustrations to the Paper, and to other gentlemen for drawings, cartoons, and heraldic hangings, &c., kindly lent for exhibition.

Books received for Review.

Specifications in Detail. By Frank A. Macey, Architect. So. Lond. 1898. [Messrs. E. & F. N. Spon, 125, Strand.]

Bell's Cathedral Series:—

Winchester. By Philip W. Sergeant.

Lichfield. By A. B. Clifton.

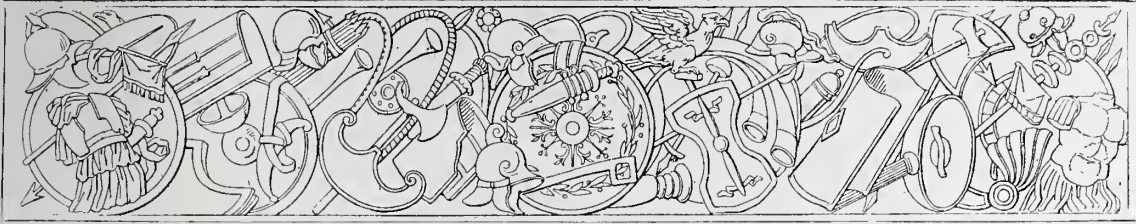
Norwich. By C. H. B. Quennell.

Peterborough. By Rev. W. D. Sweeting, M.A.

So. Lond. 1898. Price 1s. 6d. each. [Messrs. George Bell & Sons, York Street, Covent Garden, W.C.]

An Architect's Experiences, Professional, Artistic, and Theatrical. By Alfred Darbyshire, F.S.A., Author of "The Booke of Olde Manchester and Salford." [J. E. Cornish, Manchester.]

The Law and Practice of Compensation, with the text of chief Statutes relating thereto, and forms and precedents. By H. C. Richards, F.S.A., M.P., Barrister-at-law, and John P. H. Soper, B.A., LL.B., Barrister-at-law. So. Lond. [Frank P. Wilson, 6, St. Bride Street.]



ARTISTIC COPYRIGHT—WITH SPECIAL REFERENCE TO ARCHITECTS.

By GEORGES HARMAND, Avocat à la Cour d'Appel, Paris.

Read before the Royal Institute of British Architects, Monday, 4th April 1898.

IF I thought that I might come and try to explain to you how important for artists, and especially for architects, would be full protection for their works, and possession of all the rights which should belong to them for the works they have created, it is not that I supposed that copyright would be unknown to you; nor that you could be in doubt as to its utility for artists in general; nor that you could deem architects to be the only artists undeserving of copyright on their works. I am sure that you are familiar with this question, and that we shall readily agree upon the consequences as well as upon the utility of such a right, when granted to architects.

I had the honour to meet your distinguished President at the fourth International Congress of Architects at Brussels, and I felt a very sincere pleasure in expatiating upon the skill with which he practised the art in which he has obtained so illustrious a fame. I have been so affected, too, by his kindness, that I must beg him at once to accept my cordial greetings. I had also the pleasure last year in London of meeting Professor Kerr (of whom I have read a very interesting book, *The Consulting Architect*) and Mr. Spiers; and I remember the interesting talk I had with them, that gave me the idea of reading this Paper.

In the first place, I shall try to give you an idea as to the state of public opinion concerning the question in some countries of Europe, and especially in France and Belgium. I am sure that when you know that architects, in the greater part of Europe, enjoy this right, and that others keenly desire to possess it, you will be convinced that it is of the greatest importance for your profession to have the same privileges, and to share the same aspirations. Unity in the protection of your art is the best means to its development and its triumph.

That architecture is an art I shall not try to prove to you. It is a proposition that nobody will gainsay. From the remotest antiquity it has been a wonderful art, to which humanity has owed its first sense of the Ideal and the Beautiful; for I think (and I do not doubt that you agree with me) that architecture was the first art revealed to mankind, and that in the beginning it united in its manifestations painting and sculpture, both connected with the decoration of monuments. What we can also assert is, that for a very long time architects, like other artists, and also writers, did not think of claiming copyright in their works. But this is not a reason against the right. It has been observed with much aptness that as long as men had not discovered a practical way of mechanically producing numerous copies of a work, copyright was in fact a right of very small importance, whose possession, if conceived, was not sought for, being in fact of no noticeable advantage. I could easily show you that in antiquity—in Greece as well as in Rome—authors thought

of their glory, and were resolutely decided to claim it for their works. Virgil speaks of plagiarists, and despises their audacity; Horace has expressed in his Odes his pride and pleasure in the judgment that posterity would pass on his works. Authors in those times realised perfectly well the importance of the right of maintaining their name on their works, looking at it as the mark of their personality, the consecration of their repute, and even of their glory. One of your French brethren, well known to many of you, M. Charles Lucas, in a note sent to the Literary and Artistic Congress, held in Milan in 1892, clearly pointed out the fact that from the most remote antiquity architects had been in the habit of putting their names on the monuments they erected; and, if not their names, had frequently left a trace of their personality clear enough to be considered as a signature. So M. Charles Lucas mentions the statues of very ancient architects set in the monuments built after their drawings, instancing, in ancient Chaldea, that of Goudea as the sometime priest, governor of a province, and architect of the Tello's palace, more than 3,000 years B.C.; in Egypt, in the time of Rameses II., that of Baken-Khonsou, high priest of Ammon, and architect of the Thebes Palace (1500 B.C.). In Greece it often happened that the monument was called by the name of its architect, as the Agora of Hippodamos in the Piræus, or the portico of Agnaptos in Olympia.

He mentioned also, in a very similar way, the tombs of some architects in very ancient cathedrals, and even in some newly restored ones, as the tombs of Robert de Luzarches, Thomas and Regnault de Cormont, architects of the Cathedral of Amiens; that of Libergier in the Cathedral of Reims; that of Pierre de Montreuil, in Saint-Germain-des-Prés in Paris, and of Matthew Fernandez in the Cathedral of Bathala, Portugal; and in recent times the inscription set in Canterbury Cathedral in memory of one of your brethren, George Austin.

To the same purpose, M. Charles Lucas indicated that the busts or the statues of many architects were set in conspicuous places in their important buildings—as the statues of Bachelier in the Capitole at Toulouse; of Louis in the great theatre of Bordeaux; the busts of Felix Duban in the École des Beaux-Arts; of Henri Labrouste in the Sainte-Geneviève Library; of Louis Duc in the Palais de Justice, and of Théodore Ballu at the Hotel de Ville; and here in London, in the Houses of Parliament, the statue of Sir Charles Barry, one of your most distinguished architects of modern times, and even in the new Law Courts, the monument erected to the memory of George Edmund Street. Such monuments, statues, busts, or tombs, are very exactly demonstrated by your learned Hon. Corr. Member to be the acknowledgment of those artists as authors. Hence you may see that from the earliest times such a consecration has been granted to architects.

It is with great satisfaction that I can inform you that, in England, many years before such a thing happened in any other European country, laws had been promulgated for the protection of artists and authors. But, although authors were quite aware of their right over their works, without any legal acknowledgment of that right till printing had been discovered, we shall not see painters or sculptors claiming protection before engraving had been improved, and had become an easy process of reproduction. The publication of the designs of architects have been, until quite recently, very expensive. So has that of drawings made from buildings, *which are but a reproduction, on the ground, of the designs*. So that only a few monographs of very important buildings, or the complete works of a few very great architects, were published; and even such works were issued at a high price, or in limited numbers, if compared with the number of pictures or sculptures now reproduced and the low price of the common reproductions. But a cautious observer may see that very important advances have been made in recent years. And I might name magazines, art reviews, and especially architectural periodicals, which contain numerous engravings and plates made by photographic processes,

which reproduce drawings of architects and views of monuments. I need not quote their names or titles, they are present to your memory; but I may add that it is in England that they were for the first time done better and at a cheaper price. Hence the hour is not far from us when it will be easy for an architect to give a full reproduction of the works he likes most in his complete work, or to show the full reproduction of the buildings he likes the best to remember. As soon as it is known that the reproduction of an architectural work is practicable and inexpensive, many will be anxious about the copyright, and, for the sake of their own memory, their consideration, or even their glory, will strive to secure the preservation of their drawings and the guarantee of their authorship. I shall try to show you how such a wish may find a basis in the law.

But let me assure you, as I am only a foreigner among you, that I will avoid all criticism of the law of your country; nor will I presume to explain to you what part of such and such a bill or law, and what paragraph you should claim for your protection. I am sure that you know your own law better than I do, and that the Royal Institute has lawyers quite able to show you the right way to the protection you deserve. However, let me tell you that in your laws there are some which speak of architecture, and protect the artist who shall invent or design, engrave, etch, or work in mezzotinto or chiaroscuro, or from his own work, design, or invention, shall cause or procure to be designed, engraved, etched, or worked in mezzotinto or chiaro, any print of any architecture or plan; and which grant to the lithographer the same protection as to the engraver, and to lithography the same protection as to an etching of the same subject. I cannot think that architects would be unprotected if they would claim the protection mentioned in such laws.* Perhaps you will be astonished that it is only in that form that I can express my conviction as to your copyright—more I cannot tell you; for when I had the opportunity of talking with a few distinguished members of your profession, who did me the honour of welcoming me so kindly last year, they did not seem to place much confidence in their copyright.

You know, I believe, that after congresses had been held by the International Literary and Artistic Association in some towns of Europe, in which the desire had been expressed by many men prominent in literature and art for a unification of the various legislative measures relating to copyright, a diplomatic meeting was held in Berne, in 1886, and a convention agreed upon between the most important nations in the world, among which were Great Britain, France, Italy, Spain, Belgium, Germany. The Convention, in its fourth paragraph, granted copyright to books, etchings, and other literary works; to dramatic and dramatico-musical works, and musical compositions without words; to drawings and works of painting and sculpture; to engravings, prints taken by lithography, and illustrations; to geographical maps, plans, sketches, and plastic works relating to geography, topography, *architecture*, and sciences in general; and finally to whatsoever production belonging to literature, science, and art, that could be published by any process of printing or reproduction. As you may have noticed, architecture was named among the branches of literature, art, and science protected; but it was very illogically placed between topography and sciences in general. Of course, a more reasonable place would have been among the works of painting, sculpture, and engraving. The naming of it, however, is the most important point.

But some of the nations which are bound by the Convention do not fully protect architecture in their laws; and among them Germany. By its law of 1870, forty-third paragraph, the German architects are protected against piracy, for their drawings not published, or when published in a book; and by the law of 1876, third paragraph, architecture is excluded from

* See *Stat. Revis.* Vol. II.: Geo. I. to Geo. III. 1714–1800, p. 369, ch. xxviii., par. I.; p. 501–2, ch. lvii.—Vol. VIII.: 10 & 11 Vict., 15 & 16 Vict. 1847–52, p. 1028, par. 14.

protection, in so far as buildings are concerned. Hence it happens that, in the German law, as long as an architect has not reproduced in a building the designs he has drawn for the purpose of making them into buildings, he is protected and enjoys copyright; but as soon as he has erected a building on these plans, he loses his right. I fear that such a result will cause architects who are lovers of art to lose courage.

But also, if any architect who has made his plans and drawings in a country where he has full copyright has occasion to erect a building in Germany, as it is impossible for him to have more right than the German architects could have, he will not be protected in Germany, though he will have full protection in his own country. Also, it follows that, if a German architect comes to a country where architecture is fully protected, and builds there, he will not be protected like the architects of the country in which he builds, for he cannot have, out of his country, more right than he has in it, if the law in this other country, as in France, gives to foreigners the right which architects enjoy in France, provided that they are protected for the same purpose in their native country. Such being the situation, not only German architects, but the architects of other countries, such as France and Belgium, at the time when the Berne Convention was to be revised by a diplomatic conference held in Paris in 1896, thought it wise to ask the different delegates of the nations bound to the Convention to amend its fourth paragraph by putting architecture in its right place, near painting and sculpture, and to declare that copyright was granted to architects against any piracy of their drawings as well as of their buildings. The delegates of the majority of the countries agreed, but the opposition of the German delegates prevented any improvement. At the same time, one of the delegates of Great Britain declared that he could not agree either, as architecture was not protected by his law, except with respect to drawings and plans. Whether this be true or not I cannot determine. It is for you and your lawyers to elucidate the question.

If by mischance it be true, let me tell you what efforts have been made across the Channel to repair this injury. I have already spoken of the International Literary and Artistic Association, which was inaugurated in Paris in the year 1878, under the distinguished presidency of Victor Hugo, and among whose honorary presidents are the illustrious painter W. Bouguereau and the celebrated musician M. Massenet; in Italy, Giovanni Visconti Venosta; in Spain, Nunez de Arce; in Switzerland, Numa Droz; and whose present president is Me. E. Pouillet, ancien Bâtonnier of the Ordre des Avocats de Paris, one of the most important legal authorities on copyright in Europe. This Association has made the greatest efforts to get full protection for architecture, and in many Congresses held by the Association all through Europe, from 1880 (Madrid) to 1897 (Monaco), it has been asserted in many resolutions that architects ought to be protected by the same means as other artists, for they have the same right as they to copyright; and at the same time, at the International Congresses of Architects held in Paris (1867-1878-1889), and, lastly, in Brussels (1897), resolutions were passed; also at the National Congress of French Architects, in 1894, at Lyons; at the Annual Meeting of members of the Société Centrale d'Architecture de Belgique, in 1893; and in the Eleventh Session of the Federazione delle Società Italiane degli Ingegneri ed Architetti, which was held in Genoa in 1896. So you may see what strenuous efforts have been made, both by the International Literary and Artistic Association, and by different Societies of Architects. Surely you deserve to succeed; and that is my most sincere wish.*

And then, would it be true or not to say that your law does not protect architecture, or

* Another diplomatic conference will take place in 1906 in Berlin for the revision of the Berne Convention. Many societies of architects will take part in it, and endeavour to obtain protection for architecture—including

the Société Centrale des Architectes and the Caisse de Defense Mutuelle des Architectes in France. This will be a good opportunity for architects of all countries to join their efforts.

rather the buildings of architects? Let me tell you what copyright is, and for what reasons you ought to keep it if you have it or earn it.

Copyright is the privilege of the artist, as of authors in general, of reproducing his work by any means—by printing, engraving, etching, or by any other process, like lithography, or by any sort of photographic printing, or by photography directly, or by any of the processes connected with the graphic or plastic arts, or by making it public in any way for exhibition. Nobody, without the author's consent, can reproduce or publish his work or any part of it during the time for which the right is granted by law. After that time the right has lapsed; from that moment everybody can copy or reproduce the work, but not before.

It is important to notice that the greater part of the laws in the world make no difference between executed works, whether they be by men of genius or only by men of talent, or by mean and simple draughtsmen and writers. Genius is not required; genuineness is the sole condition. So authors of popular songs can be protected as well as Byron, Walter Scott, Wordsworth, or Tennyson; engravers are protected whether they have worked for tailors and milliners, or have reproduced a picture by Landseer, Millais, or Alma Tadema. For it has been laid down in the Berne Convention that works should be protected without any regard to their importance. Presently I will show you how judiciously this rule has been laid down in judgments which have been delivered in France and Belgium, according to the principles of the French law of 1793, or the new one now in force in Belgium since 1886.

What has been granted to artists in general, and what painters, sculptors, designers, and engravers of every kind are in undisputed enjoyment of, is it reasonable to refuse to architects? As we agreed, a few moments ago, that architecture was an art, I need merely say that architects draw like other artists; they have the same tools, pencils, brushes, and colours; the same ways of expressing their ideas on paper, the same rules of composition, and of harmony in the composition. Like painters and sculptors, they use colour and form. So you would be extremely surprised if there were a difference between their drawings and yours. Copyright is the right of reproducing a work which is called *the original*, or a part of the original. For if a painter has drawn a triptych, and if the three pictures are gathered in one frame, they are protected as well united as singly. For the same reason it would not be possible to copy a figure from a frieze or a bas-relief, any more than it would be to copy the whole work. Also, it is as impossible, without the author's sanction, to copy a work from a reproduction, as from the original. Hence, if the means of expressing his ideas are the same for the architect as for other artists, if the rules are the same, if when the artist has got his copyright, his full work and every part of it are protected, do you think that artists, painters, and sculptors ought to do what is *new* in order to obtain copyright? We may answer "no," with assurance, if by what is *new* you mean something that has never been expressed before.

They may be protected with respect to a picture or a group of statuary, showing Adam and Eve in Paradise, though for many centuries this subject has been continually treated. The same applies to any work dealing with subjects from Sacred History or Ancient Mythology. So what is asked from artists? Merely to be genuine; to have, in expressing their subject, a personal note, no matter how many times the subject has been painted, or carved on wood or on stone, even in marble. Sculptors and painters, however, cannot change human features, human gestures, dresses, attitudes which are identified with particular emotions; and yet they are protected without dispute, every time that it is apparent that they have worked individually on the subject that they have chosen.

Is there any difficulty in applying such a criterion to architecture? For my part, I see none. And, to give you my opinion in a right way, I will translate here a few lines of the judgments I have referred to above. The first I met with is a French one. It was delivered

in 1855 (April 30th) by the Tribunal de Première Instance de la Seine, and was confirmed by the Cour d'Appel de Paris (5th June 1855). The judges held that "copyright is granted to every work that comes within the sphere of art, and that the work of an architect in some cases, according to its scope of thought and the merit of its execution, may be, and ought to be, considered as a work of art." In another judgment, from the Tribunal de Commerce of Liège, confirmed by the Cour d'Appel of the same city, delivered in 1883, at a time when the French law of 1793 was applied in Belgium, the judges held that "it was just to distinguish, in the architectural profession, work which is drawn for ordinary purposes and comes directly from the common teaching of all schools and academies, and work which is the result of special studies, exceptional science, and which, for that reason, wears a marked character of individuality; that a production of that kind was evidently a creation, and that such a creation, when coming within the sphere of the Fine Arts, was without any doubt protected by copyright."

Though such judgments were strongly affirmative, the criterion was not sufficiently exact. It was defined much more clearly in the last judgment that I will quote, delivered in Antwerp on the 25th October 1893. The judges held that "in order to be considered as author of a protected work, it is not necessary for the artist to produce a work entirely original, all of whose parts have been created and combined by himself; but that the man shall be considered as the author, who has composed and traced a drawing and a plan, and has added his share of individuality to elements gathered from works whose copyright is out; that it is, indeed, the gathering together of various elements in a certain way that makes of such a work an original work, an artistic creation according to law, and that it is such a work the law protects. That it is of no importance that the different parts composing the monument designed by the applicant have been known before; the gathering together of those parts, their arrangement in a new special order, being only to be considered. That this is the only thing, in fact, which constitutes the result of the intellectual activity of the author, his personal and artistic mark, and consequently the individuality of the work considered."

Such a decision has a very great interest, and you will readily perceive that it is such a personal effort that is duly protected by copyright; and we will but say again, that for the very same reasons are writers protected. For are they obliged to discover new words, new ideas? If so, it would be very difficult, if not impossible, for the most gifted writer to be protected. It is only asked from them to write about what they see or think with usual words, only under the condition that they will think for themselves, and not copy other writers. I can see no reason why the same right, under the same conditions of genuineness, should not be given to architects.

And about patents, are they granted only to people who discover quite new things, like the phonograph or the telephone? Of course not; a patent is granted even to people who have taken parts of anterior patents, whose right is out, and have combined them in a new manner in order to get a new *result*. In art, as well as in architecture, we say a new sensation, a new feeling; and what is so just in other domains of art, and in literature, will seem to you as just, for the same reasons, with respect to architecture. Perhaps it may interest you to know by what arguments such protection has been refused to architects in Germany and contested with them in other countries. For, in German law, there is a special principle which I cannot find in yours. In Germany, the legislator thought that in a building too large a share, in regard to art or idea, was given to raw materials. Perhaps you will be surprised that the quantity of stones, bricks, or marble employed should be taken into consideration. I suppose that the legislator had forgotten that a small chapel or a funeral monument may

contain more art than a whole cathedral, and that the question of quantity was not considered when judging a work of art.

Some people hold that an architect could not be protected, since he builds his monuments in open squares or along the streets, with their frontages publicly in the view of passers by. But such people agree, on the other hand, that an architect deserves protection for such parts as are not seen from squares or streets. Such a proposal has a bad beginning, but ends well. Then, if we observe to such people that the same argument would deprive a sculptor of protection whose statue was placed in a public square, or in any private one where it could be freely seen through iron railings, but would be obliged to grant him protection if the statue was hidden by boughs and trees growing in the square, what could they answer?

In such a way, an architect would be protected for the inner frontage of his building, in the yards, and for the decorative parts in the house, rooms, and staircases, as obtains in the Mexican law. But, in such a system, what could be thought of its application to the Oriental style, in which you know that external frontages are quite bare, and inner frontages and courtyards alone richly decorated? Or in the Renaissance style, in which the same arrangement is as often employed?

Others have thought that an architect, being necessarily obliged to think primarily of housing his client, of procuring him a shelter, before thinking about art and decoration, is not as free to follow his own ideas as a painter or a sculptor. Again, if pictures are intended for other uses than wall decoration, if they are painted on some useful thing, as on those wonderful Italian clothes-chests, so delicately painted, carved, and gilded in the time of the quattrocento painters, which you can marvel at in the South Kensington Museum, such people would be driven to conclude that pictured boxes like these, for instance, are but boxes, and the copyright of the artist would be lost for having painted his picture on a piece of furniture. And in sculpture (if it be admitted that the uselessness of things of art is the basis of copyright) the wonderful "Canephora" at the Erechtheion near the Parthenon, would not deserve copyright, because they are pillars or columns as well as statues. And also Benvenuto Cellini would have been deprived of his copyright for his marvellous figures chiselled in iron or gold, if he had worked on a breast-plate or a helmet, which would protect or cover its owner. The argument will not hold water.

Others have considered that an architect cannot carry out his work single-handed; that he is obliged to use associates in his building, such as workmen to cut the stones, or carve the wood, or paint the walls, the ceilings, &c., and thus that he is not the sole author. But if this argument be sound, what is the case with the musician? He also has associates, and when he had composed a score, he would get no copyright because he could not play the whole orchestra at once. But such an objection with regard to a musician has never been thought of. I do not see any reason for it applying solely to an architect.

There being no sound reason, therefore, for denying copyright to an architect, you may care to know how it will belong to him, when he has built for his client. This is a very important part of the question.

We have already said that the architect makes his designs, and agrees with his client for a reproduction of them, on the site belonging to or leased by the client. Those plans, elevations, sections, drawings, &c., of the exterior and inner fronts, and of the decorative parts of the fronts, and of the rooms and staircases, all put together, could be expressed by the words, "the drawings of architecture." Thus put together they represent the original work of the architect; complete, they are sufficient to give another architect the means of making the building, supposing the architect-author becomes ill or dies. Now, what would the client need, when he gives orders for a building? The use of it, the possession of it, with the

pleasure of its beauty if the building have artistic qualities. But does he ever think of reproducing his home in any way by engraving or photography? We can assert no, without any hesitation. Most frequently he would not know what would be the best way of reproducing the different aspects of the building, or of choosing the right engraver, or the right artistic point of view. In my opinion nobody but the architect is interested and able to decide on such a point.

Let us see what happens as regards copyright in sculpture and music. When anybody buys a bronze or marble statue, or an opera score, he never thinks of reproducing in bronze or in marble the statue he has bought, or of giving public concerts when playing his score; everybody knows and agrees that he has bought the pleasure of looking at the statue, or of playing the score for himself at home, and nothing more. So what is admitted in the case of sculpture and music, without difficulty might well be admitted in the case of architecture. The owner will use the building as completely as the statue, he will have the right to enjoy it, to destroy it, or to sell it, without any care for the copyright. And I cannot see of what he would be deprived, if the house were engraved or photographed in any way; for, in similar manner, the statues may be possessed by other people who put them in their drawing-room and enjoy their beauty. It is necessary to say that if a client wished to have the right of reproducing his building by engraving or any other process, the architect would agree without any difficulty, and for such an authorisation he would ask a free remuneration; in the same way the architect might agree that the building should never be reproduced. But, in such cases, the architect knows what right he gives to his client, and can make whatever terms he likes, so as to let the client reproduce only if he (the architect) agrees with the engraver or gives him his directions. Such a result is just, according to the interest of art, and the protection of the respect and self-esteem of the author. In making his reproductions the architect naturally would never trouble the owner by coming into his house either to take measurements or for any other purpose. Like the painter or the sculptor, the architect, in order to exercise his copyright, will do the reproduction after his own drawings, or the photographs he may have obtained before delivering the building to its owner. I maintain that there is no difference between architects and other artists, and what I would grant to architects has for many years been readily granted to painters and sculptors. Hence I say that the architect is not obliged to give to his client his original drawings; he has but to give to him copies of the drawings or plans that may be of future use to his client. In this way I hope I give satisfaction to Professor Kerr, who, in his interesting book, admits that the architect ought to deliver to his client drawings of the concealed or inaccessible parts of the building. As the architect has only to deliver reproductions of his drawings, be they copies of his drawings or the building which is a reproduction of them, there is no difficulty about his keeping the originals in his possession.

And if the architect delivers only copies of his drawings, I think that it will be a warning to his client that he intends to keep the copyright for himself. Thus the architect would be prudent to put on every copy that he delivers to his employer an indication that he has drawn it as a copy, before putting thereon his signature and the date of delivery. Consequently, if the employer has treated with the architect only for a reproduction of his drawing, *i.e.* the building, he cannot have any right to repeat the building at any other time, on any other site. For it is of great importance to remember that the fees which have been given to the architect are given only for a reproduction, as they are calculated on the expense of the building. A new building being a reduplication of the expense, it is a matter of elementary justice that the architect should not be deprived of his percentages thereon, without his specially expressed consent. Even in the case of the client asking for drawings,

so that he may order a reproduction to be executed on another site by another architect—which may happen if the building is to be erected far from the architect-author's home, or when he is ill, or has died—the rule will receive its just and true application. The charges of the architect-author being calculated on the estimate of the building, any repetition of the building would give to the author the right of claiming new fees. But since there would be no security for an architect, if he had to make a claim for his new fees only when he knows that the building has been repeated; and since it is just that the employer should be obliged to warn the architect before repeating the building, we must conclude that the client ought to obtain from the architect-author permission to repeat the building, for we have agreed that any reproduction of the original work was to be allowed by the author in possession of the copyright. By the same rule, we can assert that the client has not the right to allow his relations or friends to repeat the building on their own grounds, even if he does so gratuitously. For he cannot grant to others what he cannot do for himself; this is a principle of justice in any law. As we have seen that the architect may keep his original drawings, there is no objection to his right of signing them. The signature is the guarantee of his authorship. By signing them he assumes the responsibility of what may be bad or wrong in his work, but also he keeps all the merit or glory that could come to him in future from the value of his work. This is a very important part of copyright.

Just as he may sign his work, so can he prevent anybody from putting another signature than his own to his work, or his work from being reproduced without mention of his name as author. As regards the drawings, it will be always easy to grant him such a right; as we have seen, he has them in his possession, having delivered to his client only copies of his original drawings, and in principle we have agreed that he has delivered to his client a building. But, as regards the buildings, perhaps it will seem to you very difficult for the signature of the architect-author to be for ever kept in front or on any part of the building. This is natural; but if you assume that buildings are mere reproductions, the important thing will be that the signature is assured, and is placed on the original drawings, as well as on any engravings or other prints or photographs made of them. You may also notice that the architect will be glad to ask for the suppression of his signature as soon as the owner of the building may have changed or injured the building by adding to it or destroying any important features. Hence I think that it is not of great importance that some judges in various countries of Europe have held that it was not possible to consider, as a part of the architect's copyright, the right of forbidding the owner to destroy the stone on which the architect may have cut his signature. This liability could not exist without a special condition in the contract between architect and client.

Though it has been decided in favour of painters and sculptors that their works may not be exhibited if their signatures have been destroyed by the owners of pictures or pieces of sculpture so damaged, and as it is a matter of fact that in some cases it would be more to the interests of architects not to be indicated as authors of buildings half destroyed and rebuilt with dubious taste, we have but to consider that it is possible to ask the owner to keep the signature as long as the building is safe. As the most important point is that an architect can always print reproductions of his drawings under his own name, and that no objection has ever been made to this right, we have but to hope that, according to the progress of science, it may soon happen that the reproduction of the original drawings of an architect may be bought at little or no cost, and be often used. Consequently, it is no more possible for the client to have prints or photographs of his building without the architect's consent than to rebuild it on another site.

I may also briefly state to you that there is no difference between private buildings

and public ones, even when they are built for the use of state, municipal, or government services. States and municipalities are only bodies composed of single people, and those entities can have no more rights than the people who compose them. But it might be good for the general education of the nation and for professional teaching, if students could draw from your works, *when erected for public use*, on the condition that copyists should get no right or pecuniary profit from their drawings without the author's consent, and also that in no case should they show or exhibit their drawings without conspicuously attaching the indication of the author's name. Such a right has been granted to authors without opposition; no one can quote any part of their works without indicating the author's name and the title of the work from which the quotation is taken. With regard to your works, I am sure that you would know if a work is genuine enough to deserve the copyright, just as you know the difference between Greek, Roman, Egyptian, or Indian monuments; and as we have found a sure and practical criterion, it will be only a question of fact to determine what works may be protected. In the matter of patents, it is no more difficult than in architecture or any other art to answer such a question; and as right is granted in the case of patents, I cannot see why it should not be granted in the case of Architecture.

It occurs to me that when architects perceive that they can work and create for their own profit, and have reward for their pains and efforts, they will strive more after genuineness, and architecture as well as graphic or plastic art will progress, to the greater glory of Beauty. Then you will have the same independence in art as painters and sculptors; and as a responsibility which is not required from painters and sculptors rests upon your shoulders for the buildings that you erect, it is but just that you should enjoy as soon as possible the pleasure of being acknowledged as artists.

So, if there is by mischance no copyright now for your buildings, I hope you will soon succeed in earning full protection, especially as I know that a new Copyright Bill is being prepared.

In conclusion, I propose to summarise the principles I have had the honour to develop before you:—

(a) The architectural drawings, plans, sections, elevations, &c., of the exterior and inner frontages and of the decorative parts, ought to be considered as the original work of the architect.

(b) The architect ought to enjoy copyright in the same manner as painters, sculptors, and other artists.

(c) The building is only a mere reproduction, on the ground, of the architectural drawings submitted to the client by the author, who grants to the owner the possession of the building and the use of its artistic qualities, without any share in the copyright.

(d) There is no difference between private and public buildings with regard to copyright.

(e) However, for the sake of general education and professional teaching, it is right that laymen as well as students in architecture should draw, sketch, or study from *public buildings*; but these drawings, sketches, or studies should never be reproduced for the benefit of the copyist without the consent of the author, nor be exhibited without the indication of the name of the architect-author.

As such resolutions have been passed by many architectural societies and congresses, I hope that you will adopt them; and you will agree with me that the more frequently they are passed by your societies the more influence will they have on lawyers' minds; and no doubt, one day, you will succeed in obtaining the same protection as painters and sculptors.*

* Resolutions to this effect have been passed at the Annual Meeting of the Société Centrale d'Architecture de Belgique (1893), and partly by the International Congresses of Architects, held in 1867, 1878, and 1889 in

If I could learn soon that you have succeeded I should consider that my pains have been well rewarded, and should be grateful to you for enabling me to have the pleasure of seeing justice once more acknowledged on earth.

DISCUSSION OF MONSIEUR HARMAND'S PAPER.

Professor AITCHISON, R.A., *President*, in the Chair.

PROFESSOR KERR [*F.*], in proposing a vote of thanks to M. Harmand for his very suggestive Paper, said that if looked at only as an academical argument it would be found to be full of information and suggestiveness with regard to other subjects than that professedly in view. If architects in this country could obtain anything in the nature of copyright, it might be of very great service in establishing their claims upon public attention. There was a great difference, however, in respect of architecture between one country and another; and there was all the difference in the world between the appreciation of architecture in France and its appreciation in England. The radical racial difference must not be forgotten. The Latin race possessed the faculty of art in a way Teutonic nations could not pretend to; and therefore when the lecturer spoke of the architect's "glory," one was bound to tell him that the architect's glory would not be recognised in the English Courts of law, and even that architects' copyright would fare very badly at the hands of forensic gentlemen disposed to put forward all their strength in examining an architect as to the points in which he claimed merit. The difference also between architecture and the other matters the lecturer referred to was very considerable. The view that would probably be taken of architectural copyright in a Court of law would be this: the Judge would say that what the law of England, which was especially founded on common sense (the common sense of the multitude, as distinguished from the common sense of experts), recognised as the subject of copyright, of patent rights, or of protection of any sort, was "commercial value," and nothing else. "Show me," he would say, "what damage you have sustained in pounds, shillings, and pence, and then I will tell you what I think of it. But if you have only suffered damage in respect of self-appreciation, of *amour propre*, I am afraid the jury would not understand it." At the same time, architects would do well if they could establish something in the nature of protection of architectural design, and he therefore strongly commended M. Harmand's

discourse as conducive to an understanding of the rights and wrongs of the matter. One argument the lecturer put before them was certainly a very ingenious one, if it were not a legal fiction. Primarily, M. Harmand said the architect's design was a thing on paper: the building was a "reproduction of the design." That was quite a new idea; but he (the speaker) did not think it a correct one, or one that would be recognised in the English Courts. The point had been before them in a somewhat different form, when the question of the ownership of drawings was exhaustively argued, and all the Judges were of opinion that what the architect supplied to his client in consideration of payment was his best services in designing, and that the paper drawings were the record of those services. Thus it was that they declared that the paper drawings could only belong to the employer; that he was the proprietor of the results of the architect's services, and those results were, so far, the drawings. He was himself, personally, of opinion that that conclusion of the Judges would never be shaken; but one way in which they might sometimes with justice try to shake it would be to emphasise the distinction of M. Harmand. The present principle was that the building was the work of art, and the drawing merely a representation of it. Then the lecturer pointed out that the work of the architect was to be considered as a creation, to be considered to be his property just as much as a poem was the permanent and indestructible property—if it were worth preserving—of the poet. But he did not clearly understand what the lecturer said about the difference between the French judgment of an architect's rights, and the German judgment. It appeared that in the German law, so long as the architect had not reproduced any building from his drawings, he was protected, and enjoyed copyright; but as soon as he had erected the building he lost his right. Architectural drawings would be protected too, in England, provided they were registered. It should be observed that the lecturer emphasised the idea that copyright was the privilege of the "author," and that the architect, as the author of

Paris, and in 1897 in Brussels; by the Congresses held by the International Literary and Artistic Association, in 1880 (Madrid); in 1891 (Neuchâtel, Switzerland); in 1892 (Milan); in 1893 (Barcelona); in 1894 (Antwerp); in

1896 (Berne); in 1897 (Monaco), on the motion of MM. Georges Harmand, Charles Lucas, Bartaumieux, Pesce, and Parodi; and by the National Congress of French Architects held at Lyons in 1894.

an artistic design, was therefore entitled to copyright of that design. There was a great deal of force in that argument, and it was well worth considering; it was only to be regretted that it might make no impression upon the English intelligence. As to patents, a patent was a privilege—a monopoly of a saleable article—which was granted to the inventor of that article in consideration of his making his invention known to the public. That would militate against the German idea, if such claim applied to the question of architectural copyright, because, according to the primary notions of patent rights, the right only came into view when the patent was openly and clearly divulged to the public for the benefit of the public. In that view of the case, they did not advance the matter at all by drawing a comparison between patents and copyrights. A patent, obviously, only applied to something useful, in the saleable view of the case—of something to be protected as a property producing revenue. Then there was a very good principle alluded to by the lecturer when he said that an architect drew his designs and agreed with his client for the reproduction of them on a given site. Those plans, elevations, sections, &c., all put together, represented the “original” work of the architect. That was perfectly true. But what the lecturer meant was that the owner of the building—the owner, according to English law, of those drawings—was not entitled to reproduce the work in the form of another building. He was afraid they should never get that principle into the English mind. It would be considered a monstrous idea that, if a man built a house in the country, and his friend liked it so much that he asked that his builder might copy it, he should not be at liberty to consent; and then if the architect were to interpose and talk of his “glory,” where would he be? Coming down to a low level, there was one respect in which they could all feel that something like copyright was the architect’s due. When an architect was employed to design a house, and he did his best, and then found that two or three house agents in the neighbourhood employed emissaries at a fee of 5*s.* apiece—that sum had been actually named to him—to copy the design of that building and reproduce it all over the neighbourhood—in such a case, an architect ought to have a remedy. Young architects were especially aggrieved in this respect. As M. Harmand said, it was of great importance to remember that the fees given to this architect were only for one reproduction of the design, and were calculated upon the expense of the building. Then, among the points summed up: First, “the architectural drawings, plans, sections, &c. are the property of the architect.” Architects joked about their originality, but it was perfectly plain that there is a very great difference between the man who knows how to design and

the man who does not; and therefore the one who designed the building was clearly entitled to be considered as its meritorious author. Then, secondly, the architect ought “to enjoy copyright in the same manner as painters, sculptors, &c.” There, again, he could not agree with the lecturer, because painters, sculptors, and all such artists must be and were viewed by our legal world as, so to speak, commercial producers of goods that were saleable. The architect was not so; his drawings were not saleable except for being used to build from; he suffered no such wrong as the others would by a reproduction of their works. Then the lecturer suggested that an architect who was particular about his merits and the manifestation of them and the record of them might sign all his drawings very carefully, and might even make an arrangement with his client that the client was to have nothing to do with the copyright. If anyone chose to try that on in England he would soon see how it answered. M. Harmand had put himself to the trouble of coming over from Paris in order to give them this treat, for it was a treat, so far as his arguments went, and English architects should be particularly obliged to him; therefore he had the greater pleasure in proposing the vote of thanks.

MR. JOHN SLATER [*F.*], B.A. Lond., in seconding the vote of thanks, felt sure that no one who read M. Harmand’s Paper could fail to acknowledge and appreciate the talent the author had displayed in bringing it before them. It did seem absurd that a painter, who painted a portrait or a view, could claim copyright in his work, while an architect, who was only obliged to put his design on paper because there was no other way of getting it carried out, should not have copyright for the building. The decision quoted by Professor Kerr, and with which all were familiar, that the architect’s drawings became the property of the client because they are what the architect is paid for, seemed more than ever absurd; and, if it were carried to the logical conclusion, the only thing to do would be for architects to make their drawings so bad and so simple that no one would care to have them. In that way they might convince their clients that it was not the drawings they were paid for, but the design of the house. Professor Kerr said that the reason why a painter or a sculptor could claim copyright in his production was because he had produced something saleable; but did not the architect do that in his building? Was not a really well-designed and perfect building just as saleable as a picture? and was not that the architect’s work, just as much as the mere drawing, &c., put upon paper? He was quite sure that not only the architects of this country, but those of every country in the world, would be only too happy if the efforts made by M. Harmand to get copyright for architects thoroughly established should succeed, and would owe him a very deep debt of gratitude for his efforts.

MR. JOHN HEBB [F.] said that at present, looking at the decision in reference to the property in an architect's drawings, it would be quite useless to attempt to set up any claim for copyright in a design. It was also very doubtful whether architects themselves would desire it; architects did not object to being copied; as a rule they were rather pleased to see that their designs were imitated. It would be found that Mr. Norman Shaw's designs were very commonly copied, and it was said that his designs had had such an influence upon the younger members that they had almost effected a revolution. Mr. Mountford, in the same way, had been copied, and he did not think he considered himself injured in any way; in fact, was probably rather pleased to think that he was setting a good example, and that the younger members of the profession were inclined to follow him.

MR. E. W. MOUNTFORD [F.] said he should like to ask the lecturer whether he was aware that one firm of architects in the country did go so far as to patent one of their own designs, and whether he had made any inquiries as to their care in taking out that patent, as to whether it was satisfactory to them, or whether it had any effect in any way upon any other architects.

MR. E. W. HUDSON [A.] said that M. Harmand had paid them the compliment of supposing that they were all versed in the subject, and desirous of obtaining improved copyright legislation for their drawings; but he thought there might be some who for sentimental reasons (that really did appeal sometimes to a Briton) were not so anxious for it as he assumed. He (the speaker) supposed they were more or less, wittingly or unwittingly, in their designs borrowing from ancient work the ideas of those who had gone before, and therefore felt that it was only fair that they should, if they were inspired to produce anything worth looking at, give it freely, as they had freely received from the past. But then, on the other hand, if they were dissatisfied with their own conceptions they should not desire to copyright them; and, again, they might feel, even if they were considered to be the most beautiful inspiration, that high art was somewhat degraded by being copyrighted. Judging by the alacrity with which drawings were given out for reproduction in illustrated architectural journals, it might be concluded that copyright was the last thing architects were seeking. Yet, it was true that in the same pages they did find objection made to the unacknowledged use of designs by unscrupulous builders, and questions asked as to their rights of redress. As Mr. Hebb remarked, possibly some would be flattered by knowing that their designs were thought worth repeating, remembering what Molière said:—"*Les plus excellentes choses sont sujettes à être copiées par de mauvais singes.*" And therefore they might feel that what was

being copied had certainly some excellence. M. Harmand congratulated England on being the first country in Europe to arrange for copyright. That might be so in some respects, but he thought the general opinion "was that they had followed the French in establishing any design rights at all; and it would be well if they adopted their simple, sensible arrangement for securing them." But he thought that remark applied more to efforts to protect designs for productions having commercial rather than architectural value. However, England had had copyright for some considerable time now—literary, musical, dramatic—and, in a smaller degree, artistic, since Hogarth's Act of Parliament (in 1734), in the matter of engravings; and Dickens was most eager, when he first went to America, to convert our cousins in the United States to more honest views as to literary piracy. But what had architects done in the matter of copyright? Not much, he believed. Some members present would remember how, in 1877, a Royal Commission upon copyright was sitting, and the then President of the Institute, Mr. Charles Barry, was *permitted* to give evidence, but not, however, before the Council had written to the Commissioners stating that architects wished to be heard on the subject. Mr. Barry made a very strong stand, and proposed that the right to reproduce a building should be reserved to the architect for twenty years, and any reproduction, in whole or in part, to any scale, whether by the original client or any other person, should be forbidden. But the Commissioners' Report, presented the year following, practically refused to entertain the proposal, and did not suggest anything at all for the benefit of architects. The Royal Academy also sent a memorial, and that he believed received better attention; but, soon after, a meeting was held at the Grosvenor Gallery, where some of the most eminent artists were present, and they were then apparently very unsettled in their minds as to whether it was desirable to apply copyright to anything more than mere engravings, lithographs, photographs, and so on. In fact, that works of the highest art really should not be patented. As far as any alteration in the law for architects, matters had slept, and he supposed architects had not much hope of legislative help, because, as Professor Kerr said, Judges were generally against them, especially in the matter of ownership of drawings, lawyers not being able to get rid of the notion that drawings should be handed over to a client like any commodity paid for. But there was one thing with regard to drawings which seemed to affect the legal mind, viz., the original drawings were parts of the contract; they were signed by the builder, and it might seem to a lawyer that it was not quite the thing to refuse them to the "owner," one of the contracting parties. Where a lawyer com-

pletes a deed for a client he must hand it over to him on demand, and he did not see why architects should insist on claiming those drawings. The artist stood on a somewhat different footing; his picture was generally his own handiwork entirely. Architects' drawings were often made, not by themselves, but by assistants—under their direction, it was true, but nevertheless by other hands; and it was a matter of fact that injunctions had been sought for by some architects to prevent another architect from exhibiting successful competition drawings as entirely his own work. In fact, the law of copyright in England seemed in such an uncertain state that it was difficult to tell whether a remedy did or did not exist in the matter of designs being repeated. The Act regulating the matter at the present time,* he believed, secured the right to the authors of copying, engraving, and multiplying their designs in the same way as other artists, for the term of their life, and to their successors for seven years after their death, if they are registered; with the forfeit of any contraband copies and a ten pounds penalty; but the specific words "architectural designs" did not, he believed, appear at all, but merely as an explanatory footnote by the Editor,† in which he says "*An architectural design is protected under this word.*" M. Harmand had referred to the Berne Convention (1886) between the ten States‡ now forming the existing Copyright Union (to which Monaco had been added), and he mentioned also some of the laws of the different nations of Europe, particularly Germany and Belgium, and gave some of the decisions of the Courts there. Then there was the Conference at Paris in 1896, proposing certain enlargements of international rights, which the British delegates approved. It seemed that in Western Europe they had lately been doing a great deal in the matter of seeking artistic copyright; but, so far as he could see, some of the existing foreign laws gave with one hand and took away with the other. For instance, by the Austrian law (Article 4) it was piracy to reproduce designs of architecture; but the law in Hungary (Article 68) provided that "The insertion of drawings and diagrams in a literary work, when they only serve to explain the text, are not to be considered infringements; provided that the author, or the source, be expressly indicated." Then, in Denmark, no one had a right "during thirty years to make use of original designs of architecture for any other construction without the consent of the party interested; nevertheless that consent should be regarded as having been given when a design should have been published by the party inte-

rested, or with his approbation." In both these cases the door seemed open to dispute and litigation. In Russia, where one would expect to find the least consideration for architects, there were more enactments than elsewhere. Painters, sculptors, architects, engravers, and makers of medals, and artists engaged in other branches of fine arts, had, besides the ordinary *droit de propriété* afforded by general laws, enjoyed during the whole life of the author special rights (*propriété artistique*), which consisted in the exclusive right of publishing and reproducing their works by any possible means suitable to one or the other of the Fine Arts. That copyright continued for fifty years from the decease of the artist; and, further, the use of a plan or elevation by another person was forbidden, and so were copies of designs for constructing a public or a "particular" building forbidden by any process whatever. But (and here was the seeming contradiction) the copy of façades, of plans, of details, even of buildings already constructed, was not an infraction of copyright. Now, by copying plan, façade, elevation, and details one would get a reproduction of the building, although the general idea of the statute seemed to have been that "it is not lawful to construct a building on the lines of another designed by someone else." The judgment at Antwerp, referred to by M. Harmand, seemed to allow piecemeal borrowing; only, he told them, it provides that the "copyright of the building must be out," which made a difference. In Switzerland there was a sort of negative arrangement, and one would suppose that the architect was not always employed to carry out his designs, because it was enacted (1883), "Unless a stipulation to the contrary exists, the person acquiring architectural designs has the right to reproduce and carry out the work thereby, and the architect must, by a special covenant, take care that nothing else is done with the plans *sold (vendus)* which he desires not to allow." "Let the designer beware," seems the keynote here. Here was the lawyer's *habendum* clause; that is to say, when people paid for the design they had the right "to have and to hold" it. The main point was, were architects satisfied with the law as it exists, or did they really desire radical amendments? Supposing they had a Beresford Hope to push their claims before the House of Commons, what should they ask for—what term of years? Would it be fourteen, twenty, thirty, fifty years, or for their life plus seven, thirty, fifty or more years? And then, what other amendments should they desire? Registration of course should be a simple and inexpensive matter, and the procedure for penalty should be easy; but a £100 penalty would be no satisfaction if their commission on reproduction came to £100. Then, as to demolition of the pirated building, *cui bono*? If they considered the

* Fine Arts Copyright Act, 1862 (25 & 26 Vict. c. 68), promoted by the Society of Arts.

† Copinger on Copyright.

‡ England, France, Germany, Belgium, Spain, Italy, Switzerland, Hayti, Liberia, Tunis.

matter also internationally, there was another question, whether they would be able to claim redress from the tribunals of another State subscribing to a Union without having also complied with the interior requirements of their own State, and *vice versa* for foreigners. It got somewhat complicated as it went on; and their own Judges were somewhat at variance on those very points. If they decided that copyright was desirable, Professor Kerr's remarks upon M. Harmand's recommendations would have weight. It seemed to him that an Act of Parliament was greatly needed to prevent rich amateurs from laying their destroying hands upon those magnificent buildings which were being hopelessly ruined, and over which, he was happy to say, there was no copyright, but as to which one would fain obtain a perpetual injunction.

THE PRESIDENT expressed his personal thanks to M. Harmand for taking all the trouble to come from Paris to read his interesting Paper to the Meeting. There was one great difficulty about architectural copyright, for he believed that to obtain protection it was necessary for the copy to be exact. He was afraid that a colourable imitation could not be protected. In small buildings that were wanted to be repeated, the want of this protection was very hard upon the architect. There was a sort of scale of payment, which, for small buildings requiring a great deal of consideration and design, was quite disproportionate to the time and skill expended upon them. This was especially the case in small labourers' cottages, built either singly or in pairs. It seemed rather hard that, when a man got a mere nominal sum for doing a single labourer's cottage, or a pair of them, the owner of those cottages should be able, not only to copy them all over his estate without paying a single penny for them, but that he should also be able to lend or give the designs to his friends and neighbouring landowners. The real difficulty in their way was, that it was very easy to make such trifling alterations as might take them out of the law of copyright and leave the architect helpless in the matter. Another point in the discussion must be mentioned. Nowadays they heard of nothing but drawings. Drawings, however, were quite a late invention. Every considerable building that had been built from the sixth to the eighteenth century had been built from models. Santa Sophia and St. Peter's were so built. He did not say that drawings were not used as an aid to the architect, but the design was judged by

the model, and the architect was asked (for he was himself the contractor as well, up to a very late period) to execute the building according to the model for a certain price. Now that seemed to have gone out of fashion altogether, but he certainly agreed with Sir Christopher Wren that it was quite worth while laying out a small sum of money on a model for a large building, for a model was much more generally understood by the ordinary public than drawings.

M. HARMAND, in responding, said the subject was one that few apparently had thought much about, and he felt that he had roused some interest in it, both in those who agreed with him, and those who disagreed. He hoped when they had thought more about it they would see the justice of what he advocated, and gain more confidence in it. One speaker failed to see what damage an architect sustained by his designs being copied by another. For his part he thought (and he often had to advise his clients on the subject of copyright in Art) that the damage to an author who was copied was two-fold. In the first place, if another had been employed in his stead, he lost the remuneration which would have been his had he been employed; and secondly, his work could not be as well reproduced when copied by another who lacked, perhaps, his thought and skill. A great musician, Rossini, whose compositions had been so terribly mutilated by street musicians, when he came across such a musician playing his score, would buy the instrument rather than the musician should continue to offend his ears. In that way he filled two houses full of instruments, and he had room for no more; but still his score was played against his will, and played dreadfully. Architects might see their building erected by a copyist from their creations, but very badly done, because the copyist lacked the skill of the designer, and they would be naturally indignant that their work which had been thought out with care and pleasure, should have been so badly rendered. In that way a man sustained an injury by being copied; and this led to the desire for copyright. Damage to an artist who was badly copied was capable of assessment, and was well worthy of consideration, taken in conjunction with the loss of money that might result from it. He hoped that in a few years, if they should meet in Paris in 1900 for another International Congress, English architects would have thought more on the question, and by that time perhaps he would have more of them on his side.

THE HISTORIC DEVELOPMENT OF ARCHITECTURE.

Abstracts of Lectures delivered this year at the
Glasgow School of Art.

By W. J. ANDERSON [A].*

II. (LECTURES IX.—XII.)

THE ninth lecture of the session was delivered on 17th January, the subject being "The Decline and Fall of Roman Imperial Architecture" (A.D. 138-338), which succeeded the culminating Romano-Greek period of Hadrian. In every matter which could be separated from construction, in painting, sculpture, contour, and ornament, there could be no question of the decadent characteristics of the period, and yet, constructionally, it seemed the strongest period of the Roman work; as if the Romans, tired of mere combination of Greek and Etruscan elements, had in more mature years revealed an individuality and called into full play the constructive skill which, not alone in architecture, distinguished the race which had conquered and administered the world. Owing to a fire about 191 A.D., a large part of Rome had to be rebuilt, and this, with other causes, such as the victories over the Parthians, brought about one of the great building manias, without which the Eternal City has never long remained. Among works of the period illustrated were those of the Arches of Septimius Severus and his palace, the Stadium of the Palatine, the Forum Pacis, the reconstruction of the Pantheon portico, and the Baths of Caracalla. Of the last-named particularly, plans were given, with details of concrete and metal construction, heating and water supply, as well as photographs of the peristyle, with details of the mosaic floor and marble facing; also the cross-vaulted tepidarium, as it has been restored in the drawing by Professor Cockerell. From Titus's time, the object of the erection of the baths would appear to have been that of securing the loyalty of the populace, which the later emperors, in view of the growth of Christianity and other unsettling tendencies, believed they had good reason for distrusting. But the tepidarium of the baths which Diocletian built in this spirit was soon diverted from its purpose of comfort and luxury, and, in the irony of historical circumstance, came eventually to form a fitting Christian temple, the church of St. Mary of the Angels. How in other ways, of which this was but the symbol, the traditions of Pagan art and Christian uses were reconciled was, regarded broadly, the subject to which attention had now to be directed. The ultimate conclusions of Pagan Roman architecture were illustrated by photographs of Palmyra and Baalbec, which exhibit a phase of decadent Roman, anticipating many of the tendencies of the later Italian Renaissance.

* For abstracts of the earlier lectures of this course see *ante*, page 138 *sqq.*

In beginning the next lecture, the lecturer said that the task had hitherto been to conceive the nature and the significance of the material house which the Roman emperors prepared, and which, after the lapse of more than a thousand years, came to be reoccupied by their true successors. Meantime, it was essential to see how the house of the Romans was broken up and transformed by a force, which changed the current of Roman thought, planted the most fructifying seed of all in the garden which Rome had so well cultivated, and left the nations of Western Europe with the germ of a new civilisation, which was yet to transcend what Rome had accomplished. The architectural point of view was at this stage of more than ordinary historic value. (1) Because it had been possible to gather from the buildings of the first three centuries so perfect a picture of the Roman life; (2) because, from the churches of the fourth century, together with the Roman buildings of the earlier centuries, one could reason backwards to the unlegalised conventicles of a period when Christianity was in every way hidden from view; (3) because in those buildings of the fourth century it is possible to mark how far the new purpose and motive is coloured by the Pagan life, and how far by the Christian Scripture or tradition; (4) because, by the evidence of structure, it is plain that in different countries Christianity is proved to have partaken more or less of the pre-existing Pagan religion, and assumed a type which in some cases persists to this day; (5) because there are revealed the arrangements and church order of a period so much more closely related to the foundation of Christianity, that many are of opinion it should regulate our modern services. Under the fourth head it was shown that in North Africa the early church frequently retained characteristics of the Egyptian temple, and particularly in this, that the "mysteries" were withheld from the people and practised behind the iconostasis. On the other hand, in Rome, whose Pagan religious character was tolerant or even sceptical, and whose political character democratic, an open or Republican spirit may be read into these churches, from the earliest period to the present day. In their plans they appear to derive from the Roman house and the basilica, and the arrangement of worshippers in the typical early church of history presents various analogies pointing to its development out of usages which would naturally grow up in the Roman private house. Under the fifth head the arrangement of fittings at San Clemente, Torcello, and San Lorenzo, with the basilican churches of St. Peter and the reconstructed St. Paul, were illustrated and adduced as examples by which the early church plans could be restored; arrangements, especially of choir and communion table, which appeared infinitely more suitable for our own day than the conventional model of a bad mediæval tradition. Passing on to the earliest examples of Christian architecture in this country,

attention was drawn to the numerous Celtic examples of the West of Scotland, the plans and scant details of which suggest some obscure relation with North African churches, and at least reveal a ritual of the same exclusive nature. The beehive cell, the square chancel with solid screen pierced by a door, and the sloping sides of openings, characterise this phase of architecture; also the use of the returning spiral and interlacing strap-work in decoration. In the later examples, as at Egilsey and Brechin, identity with the Irish practice is established, and much of the design is of a high order. In the Anglo-Saxon work of England, the Celtic influence has dominated the plan and arrangement, while Roman work has determined the nature of the details and ornament, especially in the south, where they are so helplessly adapted as to indicate that by themselves the Anglo-Saxon settlers sadly lacked artistic skill or taste, and stood to the original Celts much as the Dorian conquerors to the Mycenaean tribes of Greece.

The succeeding lecture was concerned with Byzantine and Romanesque architecture, and, in the first place, the conditions surrounding the change of the capital to Constantinople were summarised. The nature of the materials at disposal, and the want of pozzuolana for concrete, led to the development of a brick style, and the use of the dossier. Internal decoration by mosaic and slabs of marble, in which the Roman practice was continued, appeared to have brought about, in the hands of Greeks, a feeling for low relief in carving and sculpture in sympathy with such decoration; and perhaps also by the fact that the sculptures had frequently to be taken out of a slab of no great thickness. Hence the incised character of their ornamental sculpture, which was highly symbolic in motive. Most important of all was their domical vaulting, and their treatment of the dome on pendentives, perhaps the earliest known example of which, however, is that in the side halls of Caracalla's Baths at Rome. The magnificent interior of S. Sophia at Constantinople was shown, and its construction indicated by diagrams. The conclusions of Cattaneo, in so far as he has restored the importance of the Byzantine influence in Italy from so early a date as the fourth century, were given, and examples shown at San Lorenzo, San Clemente, and succeeding waves of influence at Ravenna, Torcello, and St. Mark's. Constantinople, during these dark ages, was the centre from which light radiated, but its beams illumined only small and broken parts of Western Europe, and among Celts and Germans generally an almost independent development was in progress during this formative period of European Christian civilisation. In the Romanesque styles this development takes visible shape, for these are structurally but the outcome of the early Christian building-traditions, tinged here with revived Roman, and there with Byzantine influence at second hand,

leading on ultimately to the Norman of Normandy and England. The Lombard variety was illustrated by Sant' Ambrogio, Milan, and San Zeno, Verona; and other branches of the Romanesque by the Cathedral of Pisa, San Michele, Lucca, and San Miniato, Florence.

The twelfth lecture was entitled "Gothic Architecture in the Making." With the help of a series of diagrams illustrating seven stages in the development of the buttress, the gradual structural evolution of the Gothic principle was indicated from the Italian basilican model to the Romanesque and Norman fabric, and from that to the type of Amiens or Beauvais. The shaft in its relation to the ordering of the arch was treated in a like manner, and traced from the simple column to the subdivided and clustered shafts of endless variety; the use of the light detached or monolith shaft, confined in England to the transition and Early English period, being remarked. The relation of Romanesque work in Germany and Normandy was illustrated by the churches of the Apostles and St. Gereon at Cologne, with the abbeys of St. Stephen and Aux Dames at Caen. By sketches of details from Canterbury and early churches, such as Barreton, Kent, the typical ornaments of the Norman period were pointed out, and the cathedrals of Gloucester, Peterborough, and the magnificent nave of Durham, its exterior aspect, and its Galilee described. To illustrate Scottish work and its close relation with Anglo-Norman, the churches of St. Regulus at St. Andrews, Dunfermline Abbey, Kirkwall Cathedral, and Leuchars Church were chosen. Attention was directed to the superimposed windows suggesting numerous stories, which characterises Norman work, and which is retained far into the Early English period, and, in the form of decorative arcading and panelling, never disappears from English Gothic. The Scottish transitional work was described as of the greatest interest in its decorative quality, few examples in England surpassing Jedburgh or Dryburgh Abbey, whether for beauty of proportion or refinement of moulding or sculptural detail.

(To be continued.)

NOTES, QUERIES, AND REPLIES.

Party Structures [p. 282].

From SYDNEY PERKS [A.]—

I should be obliged if, in justice to myself, you would find room for the few notes below on Mr. Collins's remarks upon my book.

I clearly state that my object was to deal as a surveyor with the difficulties of surveyors in carrying out Part VIII. of the London Building Act. Mr. Collins says there is no necessity for such a book, as we have the excellent works of Messrs. Statham, Banister Fletcher, and Dicksee; but if Mr. Collins had referred to these books he

would have seen they all bear the date of 1894, whereas the Act came into operation in 1895 ! Consequently these gentlemen were quite unable to give their experiences of difficulties that would occur at a future date ; I know of no other book written by a surveyor on this subject.

Mr. Collins quotes me as stating that there seems "ambiguity" about section 93. I do not do so.

Mr. Collins is again incorrect in his reference to Mr. Glen's opinion, as to the Arbitration Act not applying to differences arising under section 90. See Mr. Glen's note to section 91.

I state the difficulty I have had with reference to the meaning of the words "necessary works." I do not ask for the Act generally to be construed as to its intention ; but I think one has a right to ask what was the intention of the Act as to the meaning of certain words ; but may I quote Mr. Collins : "The duty of our profession is to endeavour loyally to carry out the spirit and intention of the Act." Again, "Unfortunately, we cannot, as Mr. Perks would desire, construe the Act according to its intention ; we have to interpret it as it is written."

I think any reader of page 21 of my book would understand. I only ask for a definition of the words "the nature and particulars" according to the intention of the Act, and refer to the corresponding section in the old Act to enforce my opinion.

Mr. Collins is again incorrect in his reference to my remarks and diagram on pages 14 and 15. I refer to an opening in a party wall, not an external wall.

Mr. Collins, I am glad to see, does not state that my objection to the Institute Notice is unfounded, he only raises another objection.

The French Embassy, Albert Gate, Knightsbridge.

From JOHN HEBB [*F.*].—

The lease of the house on the east side of the Albert Gate entrance to Hyde Park, erected by Mr. Thomas Cubitt, and formerly the residence of Mr. George Hudson, the railway king, who purchased it in 1847 for £15,000, with a portion of the amount of a testimonial subscribed for him by his admirers, has been recently acquired by the French Government, who have rented the house as a residence for the French ambassador for several years, for upwards of £25,000, which, the house being leasehold (and built on land belonging to the Commissioners of Woods and Forests), may be considered to be a good price.

At the time the two houses flanking the entrance to Hyde Park were built, they were considered to be extravagantly lofty, and as they were for a long time unlet, they were dubbed by the wits of the day "Gibraltar," because, as it was thought, like that fortress, they would never be taken—by a tenant.

In Mr. J. R. Planché's Easter extravaganza, *The Birds of Aristophanes*, produced at the

Theatre Royal, Haymarket, 13th April 1846, there is the following allusion to these houses :—

Enter an ARCHITECT.

JACKANOXIDES. Here comes another. Pray, sir, what are you ?
ARCHITECT. An architect.

JACK. And what come here to do ?

ARCH. Offer my service to erect your city,
On a new plan approved by the Committee
For the Embellishment of the Metropolis.
I've measured every inch of the Acropolis ;
Been up the Pyramids ; and, what is more,
Reached actually, in one day, the fifth floor
Of a new mansion near the Albert Gate.

JACK. Impossible !

ARCH. Sir, had it not been late,
I should have mounted to the attic story !

JACK. That story would have covered you with glory.
You would have gained, by every one's concession,
The very greatest height in your profession.

The buildings, however, are not of an extraordinary height, compared with other buildings in the vicinity, being not more than 83 feet high to the top of the cornice, or only 3 feet beyond the maximum height now permissible. Hyde Park Court, the huge block of residential flats overlooking Hyde Park to the westward of Albert Gate, is 124 feet high to the top of the parapet, and has a lofty mansard roof in addition. Queen Anne Mansions, opposite the St. James's Park Station of the District Railway, are 140 feet to the top of the parapet. Beside these giants the mansion at Albert Gate appears a pigmy.

Erratum.—The reference to the Parthenon in Mr. Alma Tadema's speech at the unveiling of Mr. Penrose's portrait [see p. 277, 4th line from bottom] should read : "saving the greatest monument of ancient and modern architecture from further decay."

MINUTES. XI.

At a Special General Meeting held on Monday, 4th April 1898, at 8 p.m., Mr. Alex. Graham [*F.*], F.S.A., *Past Vice-President*, in the Chair, a recommendation of the Council that Professor Aitchison, R.A., *President*, be requested to allow himself to be nominated as President for the ensuing year of office, and that consequently By-law No. 26 be suspended, was moved from the chair, and seconded by Mr. John Slater [*F.*], B.A., whereupon it was unanimously

RESOLVED, that Professor Aitchison, R.A., *President*, be requested to allow himself to be nominated as President for the ensuing year of office, and that By-law 26 be suspended for one year.

The Special Meeting then terminated.

At the Eleventh General Meeting (Ordinary) of the Session, held at the conclusion of the Meeting above referred to, the President, Professor Aitchison, R.A., in the Chair, the Minutes of the Meeting held on Monday, 21st March 1898 [p. 284], were taken as read, and signed as correct.

A Paper by Monsieur Georges Harmand, Avocat à la Cour d'Appel, Paris, entitled ARTISTIC COPYRIGHT, WITH SPECIAL REFERENCE TO ARCHITECTS, having been read by the author, the same was discussed, and the thanks of the Institute accorded Monsieur Harmand by acclamation.

The proceedings then closed, and the Meeting separated at 10 p.m.

REVIEWS. LXX.

(188)

WINCHESTER CATHEDRAL.

The Cathedral Church of Winchester. A Description of its Fabric and a Brief History of the Episcopal See. By Philip W. Sergeant, late Scholar of Trinity College, Oxford. 8o. Lond. 1898. Price 1s. 6d. [Messrs. George Bell & Sons, York Street, Covent Garden, W.C.]

The fact that Winchester has a secular history of such importance that many of the chief events

the building to Wykeham, leaving only the credit of the west front to Edington. But a careful study and comparison of the work of the latter with his acknowledged work at the great church of Edington, in Wiltshire, his native parish, leads to no other conclusion than the one that the famous Bishop actually conceived the general design subsequently carried out, and partly modified, by Wykeham. And as a special interest attaches to this work, inasmuch as it indicates the commencement of the Perpendicular style, we

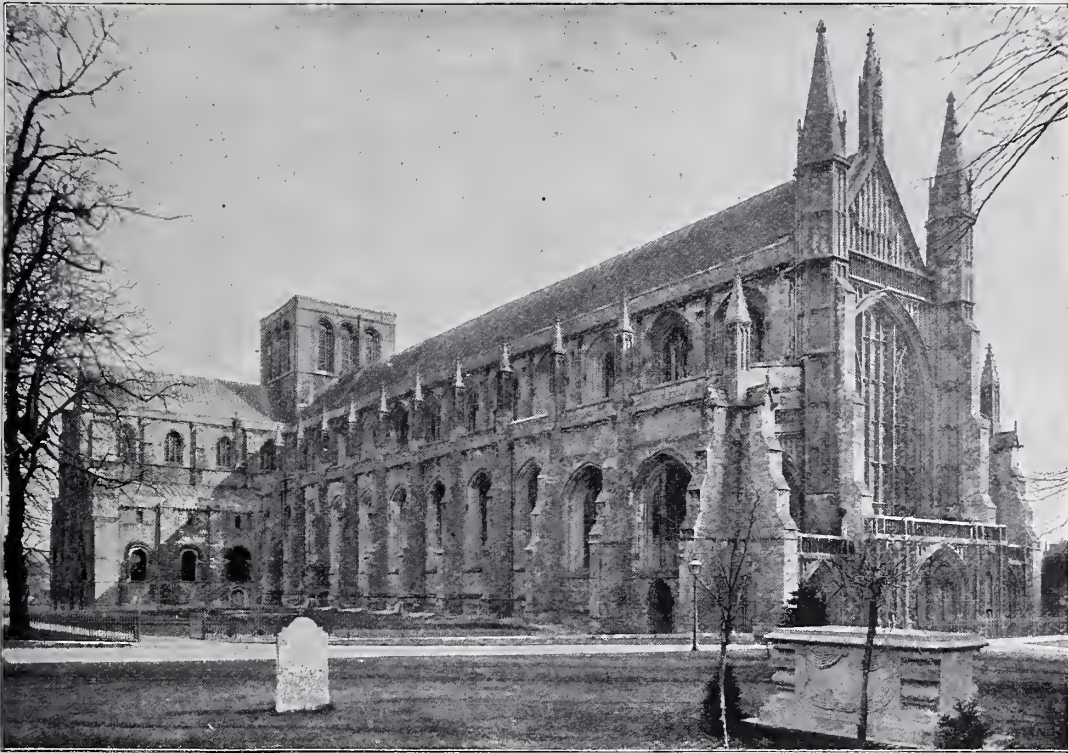


FIG. 1.—WINCHESTER CATHEDRAL.

of English history are closely associated with it and its Cathedral, has led to the accumulation of a great mass of literature. With so many sources of information, it is a comparatively easy task to compile facts; but it is another matter to reduce them to a concise and popular form, and Mr. Sergeant is to be congratulated on his success in this direction. A perusal of his book brings two main points into prominence, viz., the justice done to the memory of Bishop Edington (or Edington), and Mr. Sergeant's exceptional ability in dealing with the architecture of the Cathedral.

The author hardly makes enough of the first point, for it has been too long the custom to attribute the conception of the transformation of

must concede the credit of this departure to Edington. Moreover, if we are to judge by the similarity between the inserted windows on the east side of the north transept and those at Edington Church, the Bishop's work was not confined to the west end. The subject has been so fully dealt with by Mr. C. E. Ponting, F.S.A., that further comment here is unnecessary.

A protest must be entered against the quotation of the legendary reason given by Edington for refusing the offer of Canterbury: "If Canterbury is the higher rack, Winchester is the better manger." It is considered by those best able to judge, that such self-seeking was altogether foreign to the Bishop's character.

As to the second point, Mr. Sergeant is so

observant, and has so good a technical knowledge, that it should be easy for any one, especially the student, to become well acquainted with the history and architecture of the Cathedral with this book in his hand. No higher praise can be given than to say that the aims of this series, as set forth in the Editor's preface, are here better carried out than in any other that has been under notice. Some minor details are open to correction, and it is natural in a work of this nature to find some omissions; but, on the whole, Mr. Sergeant is chary of foisting his views on the reader, an example that might well be followed by other authors of works of this class.

We do not find any allusion to Canute's munificence as recorded by William of Malmesbury:—

At Winchester, he displayed all the magnificence of his liberality; here he gave so largely, that the quantity of precious metals astonished the minds of strangers; and the glittering of jewels dazzled the eyes of the beholders. (B. II., c. 11.)

The date of the rebuilding of the Tower, which fell in 1107, is not given. This rebuilding was apparently in the year 1200. "Inchoata est et perfecta Turris Winton. Eccles."* And such items of interest as the following should not have been omitted; for a traveller, who visited the Cathedral in 1643, says he is delighted "with the brave old mother Cathedral, fair and long, and St. George on horseback on the top of her flat-bottomed steeple to be sentinel, and give notice of her governor's prerogative prelatry of

that high noble order in the court."† He speaks of a great sum of money having "been very lately bestowed" in beautifying "the roof of her choir." His notes, too, on the stained glass would have supplemented the particulars given by Mr. Sergeant:—"In the Lady Chapel were three windows of stained glass, a genealogy of Jesse; in the south aisle was the history of the Nativity, in the north the history of the Revelation."‡

Mention should also have been made of the great find of sculptured work prior to 1833:—"The pavement of the chapel immediately behind the high altar having lately been removed and lowered, it was found to have been almost entirely composed of the relics of figures, niches, and other fine carvings, all painted and gilt."§

But little else escapes the author's notice, and even such a minute detail as the "fylfot" on the stole of Bishop Edington's effigy comes under review. The course of the transformation initiated by Edington is clearly described, and the well-known plate from

Willis's book should make it quite plain to the ordinary reader. It may be stated with regard to the west front that, in the opinion of the late Mr. R. Pink, Edington intended to flank his design with flying-buttresses. It is singular that the writer, in common with others, will confuse "vaulting" and "groining." This should be



FIG. 2.—WINCHESTER CATHEDRAL—NAVE, LOOKING WEST.

† He means the Bishop is Prelate of the Garter.

‡ *Gentleman's Magazine*, vol. lviii., part I., pp. 479, 487.

§ *Ibid.* 1833. Part I., pp. 395, 399.

* *Ang. Sacr.* i. 295.

corrected, as it is misleading. And why does the author consider the tomb of Bishop Wilberforce "out of place in its Norman surroundings"? Surely he would not have had it Norman too? And he must be aware that the crossed legs of an effigy are not now considered to imply a crusader, actually or in intention. A misprint requires noting. It was J. D. Sedding, and not J. W., who made the design for the restored altar screen.

These books might be better arranged in some respects. It would be preferable to separate the monuments from the general description, and an index would be a great help. It is hard to see why the City Cross, Thomas Thatcher's tombstone, and the West Gate, should be included in "Other Institutions connected with the Cathedral," a heading which deals with the College, Hyde Abbey, St. Cross, and the County Hall.

The illustrations are excellent, and are well chosen to illustrate the text. Among them are drawings by Messrs. R. Blomfield, H. P. Clifford, and W. B.

Robinson. It is a pity the plan does not indicate the respective dates of the architecture.

A. NEEDHAM WILSON.

(189)

WINCHESTER CATHEDRAL RECORDS.

Documents relating to the History of the Cathedral Church of Winchester in the Seventeenth Century. Edited by W. R. W. Stephens, B.D., F.S.A., Dean of Winchester, and F. T. Madge, M.A., Minor Canon, and Librarian of Winchester Cathedral. 8o. Lond. 1897. [Simplin & Co., Stationers' Hall Court; Warren & Son, Winchester.]

This volume is published by the Hampshire Record Society, which is doing good work in thus

making available documents and other records relating to their county, a really complete history of which has yet to be written.

The first collection published by the Society dealt with the MSS. relating to the establishment of the capitular body of Winchester in the sixteenth century, and was edited by Dean Kitchin (before his translation to Durham) and the Rev. F. T. Madge, and it is certainly satisfactory to find the present Dean carrying on the work so well begun by his predecessor.

In the volume now issued the documents are arranged in three groups:—

I. A.D. 1636 to 1642. — These relate to the disputes between the Chapter and the Mayor as to his jurisdiction within their precincts, also to the correspondence with Archbishop Laud as to the new statutes, and, from the summary of these, compared with those granted by Henry VIII., we learn that the attempt of the Prebendaries to restrict the powers of the Dean were ineffectual.

II. 1642 to 1660. Dealing as they do with the troubled times of

the Civil War, these are perhaps the most interesting. We find the King on his way from Edgehill to London, and again in the following year appealing to the Dean and Chapter for pecuniary aid. Deserving of study, too, are the records of the spoliation of the Muniment (Chapter) House by Parliamentary soldiers in 1642, and again in 1646; of the patient recovery of many of the documents lost, by the Chapter Clerk, John Chase; and the account of the dispersion of some of the treasures of the Library, which escaped the fate of the muniments, only to fall into the hands of a dishonest guardian who sold them.



FIG. 3.—WINCHESTER CATHEDRAL—NAVE, LOOKING EAST.

Fortunately some of the books were afterwards recovered, but the famous Benedictionary of St. Ethelwold and the Tropy of Ethelred are still in other hands.

III. 1660 to 1683.—The documents included in this group are of a more miscellaneous character, but such as might be expected when the capitular body found themselves once more in possession of the cathedral and precincts. Among them is a contract signed by Hubert le Sueur for casting the bronze statues of James I. and Charles I. still in the Cathedral. It is witnessed by Inigo Jones.

The Editors have, in the Introduction, given a comprehensive outline of the general scope of the work.

N. C. H. NISBETT.

(190)

PAINTING AND DECORATING.

Painting and Decorating. By Walter J. Pearce, So. Lond. 1897: Price 12s. 6d. Chas. Griffin & Co., Limited.

This volume is particularly interesting and useful, because it has been compiled by one who has had much experience both in his craft and as an instructor of others. And though, in this review, we may have to object to some things, yet the book is one which should take its place among the technical manuals to which architects, as well as painters and decorators, may refer. But, as the volume is produced by the publishers with the evident desire that it may be accepted as a standard text-book upon the subject with which it deals, we should have liked to notice its contents with more detailed observations; for, while we find much that is useful, there are also some remarks and many illustrations about which we cannot speak with so much praise. We are encouraged, however, by the author's preface to offer such suggestions as we may.

In the first place would there not be a likelihood of a larger circulation among those for whom it is primarily intended if the price were, say, 5s. instead of 12s. 6d.? Perhaps this might be more possible if such unnecessary and unlovely ornament as the gilt and commonplace stamped lines as well as the ill-designed monogram were omitted from the outside of the cover. It may seem trivial to make such a remark, but there is surely no reason why as much care and thought in these little matters should not be given even to the production of "Scientific and Technical Works" as to the preparation of what some call "Art Publications." We become rather tired of stock patterns and colours of bookbinding, and begin to long for some refreshing invention which shall add interest to the externals of the collection on our shelves.

The Introduction contains some good advice of a general kind, and states that one of the main causes of decadence of good craftsmanship in the trade has been the lack of a proper

perception of what is requisite, and the adoption of a striving for superficial and unnatural effect, embodied in the phrase: "what looks well."

"The wholesale provision of manufactured decorations, designed and coloured for anywhere in general and nowhere in particular, has fostered this spirit of lazy acceptance, and dwarfed the faculty of critical perception of what is suitable for given positions and uses."

And there is reference to things which have

"done much to discourage the practical interest of the craftsman in his operations,"

and have

"set up that destructive standard of comparison, cheapness, which is another foe to thoroughness and good workmanship."

This is a healthy attitude, and one which architects may well encourage by seeking for painters, of whatever kind, who will work not merely for them, but with them. Unless a body of men work together as mutual co-operators, unitedly aiming at one result—that is, good work in every branch—satisfactory issues will never follow.

The chapter upon the "Philosophy of House Painting" contains under cover of this very theoretic title many practical hints. After finding that the three chief reasons for which house painting is done are "preservation," "cleanliness," and "beautification" ("beautifying" would have been better), we are led from these—classified as "General reasons"—to the "Special reasons," and the "Practical application" of both. That "the separation of art and work is quite a latter-day innovation, the two being really indissoluble," most of us will agree, and go further, and say that the men who did the great works of the past probably never indulged in the childish and empty babblings about that invented meaning which is now given to the word art, a word which is becoming a blot in our vocabulary from excessive misuse. Mr. Pearce's definition is a good one; he says that "art means the act of doing work, provided the doing is scientific, right, and true." The result, rather than the act, is, we think, intended. His definitions are not quite final; definitions seldom are, for science, though, if it is to be true, it must be exact, is not, as stated, "exactness, viz. truth," but rather we might perhaps more correctly say that true science is a knowledge of truth, and that true art is the wise, beautiful, and right application of true knowledge. If it be this, as we certainly think it is, then it is time we changed that cart-before-the-horse phrase, "Design with beauty, build with truth;" or, better, make it, "Design in truth; beauty will build itself." It was necessary to dwell thus long on this section for reasons which will appear when we examine a later chapter.

Passing over the chapters II., III., IV., which, though well worth reading, are of more interest to the operative painter than the architect, we are introduced to the subject "Materials." For a

complete manual of materials used in painting we are here referred to Hurst's *Painters' Colours, Oils, and Varnishes*. The three subdivisions of this chapter are on pigments, driers, and painters' oils, and under the latter heading are sections which deal with media, plasters, and stoppings, and comparative prices of materials. Much is said about the different characteristics of various pigments, their composition and production, and their value as permanent or fugitive colourings. On the "Derivation of Pigments" is a section which notices the three classes generally of

"mineral, both natural and artificial; organic, both animal and artificial; and vegetable, as indigo. Each of these classes will not prejudicially affect others of the same class as that to which they themselves belong. The first may be regarded as permanent, the last as fugitive. The more preparation a colour requires in its manufacture the less able are we to rely upon its permanence. Simple pigments are most to be depended upon; and whenever we can produce our tints from ochres, earths, &c., we may be sure that it is best to do so, for economy as well as durability."

Certain pigments must not be used for tinting whitening, the basis of distemper colours, as they change their hue in a few days. Size and glue, the binding media for distemper colours, are treated under the heading "Oils." In the two chapters, one on "Paper and other Hangings" and another on "Hanging Paper," about seventeen varieties of wall papers are considered, many of which we should be glad never to hear of again, some because they seem always bad in design or colour, or both, and others because they are cheap imitations and substitutes for real things, and therefore shams and to be avoided. It matters nothing whether they are hand or machine printed, or hand-painted. There are, of course, some, but few, really good ready-made wall decorations of this kind. The hints on measuring for paper, edging, hanging, pasting, and matching are of much practical use. We next find a chapter on the four subjects to which the author has expressly devoted much space, because they have, as he says in his preface, "hitherto been but superficially handled." These are plain painting, colour-mixing, distempering, and the technique of decorating. They are well worth careful reading, as they contain much valuable information well handled. The same may be said of other chapters, especially that on staining.

It would perhaps be an advantage if a future edition contained a little more definite information on the subject of the media which may be used for tempera work. Especially is this asked because of the hope that, with a fuller knowledge of its use and colouring capacities for decorative painting, this colour medium may be much more used—not, as is too much the custom now, almost exclusively for tinting plastered wall and ceiling surfaces, and wall papers figured with machine-printed designs or not. It might not be out of

place to state a few reasons for this hope. To begin, there is practically no limit to the colour hues that may be obtained in distemper. If properly used it is more permanent than oil-colouring, but its properties and peculiarities must be studied and understood, and applied as carefully as is necessary when dealing with oil painting. It is cheap; it can be rapidly worked. Greater purity of tint may be procured in this than in oil work, and these tints are more to be relied on, as they are not affected by oxidation to the same extent as colours in oil. If, as was the case, all painted work up to about the fifteenth century was done in tempera, surely we might venture to use it more when we know that some of this, executed four, five, or six hundred years ago, is now as fresh in colour, and as clear in design, as when it was first completed. But any desire for progress, for development of power and beauty in their work, on the part of architects, can be of small avail unless they find a body of men among the painters who are ready and willing to help them in their desire for better things. They must be men, all of them, who are ready to study the principles which combined to produce the good work of the past, in order that the same may be applied to the needs and aspirations of our own day. They must not be effeminate creatures who go to the past with a desire to learn how to imitate the then customary application of these principles either to save themselves the trouble of thought, or else because, with perhaps more honesty but equal weakness, they own their incapacity and neglect to study the means by which they may be rid of it.

The chief disfigurement of the volume is in the several coloured plates. They will do more harm than good to those who see them, much more to those who study them as examples. We read about scale, colour, contrast, and other like things in these pages. There seems a peculiar absence and disregard of the value of scale in these plates; there is not even a mathematical scale given by which we may gauge the relative sizes of any parts. There is in them both colour and contrast, but we prefer to look on the former as a contrast to other colour schemes we have seen, and upon the latter as a means of giving stronger colour to our predilection for perhaps less forcible exponents of what is in itself an admirable principle.

We have endeavoured justly to take the measure and estimate the value of this book. There is a short and helpful chapter which gives us information concerning the various ways in which we may apply similar methods to the practical question, How much will so much painting and decorating cost?

There is now something to be said about three chapters which, among others, have not been specifically mentioned. It is necessary to notice

them. Inclination suggests that their presence be ignored. But this latter course might be mistaken for an admission which approved, unconditionally, of the substance they contain. Nothing of that kind is intended. They are upon Imitative Painting, Graining, and Marbling.

The chapter first named of these three opens with, "Where doctors differ," &c. But surely this old saw does not apply here! There can be no reference to the difference of doctorial opinion where the question is one so simple, and its concern—truth. If doctors begin to differ on such a matter—to doubt truth to be truth, and lies lies—we surely have arrived at a most pitiable and hopeless condition of existence.

"The whole question," to quote further, "of the artistic legitimacy of purely imitative graining and marbling is now being discussed, as it has been periodically discussed in all ages. Twenty years ago the authoritative answer was given that it was inadmissible, a sham; but again its utility has thrust it to the front."

The utility of what? The utility of imitations and shams, hypocrisies, and insincerities? Or the utility of a method by which woodwork or any other material may be treated so that it may look less dull and uninteresting than mere paint? Or so that it shall show less signs of wear and tear? so that it shall last long and perhaps seem cleaner than it is? Or to make a cheap material give the lie by appearing to look like an expensive one because of the crafty cleverness of an imitative parrot artizan?

It is honest enough to attempt to improve the look of the thing provided it be legitimately done, but such an attempt should surely not be directed to the making of a mask which shall proclaim that thing to be other than it is! If a thing is worn, torn, and dirty, it is time for it to be repaired and cleaned. It is lawful to treat a material so that it may last longer, but not so that it may seem, and be mistaken for, another material better than itself.

Graining, as work done in imitation—so far as imitation is possible—of the natural graining of different materials is not a legitimate use of the fund of suggestions for design—not copyism—to be found in nature. But it is permissible if it is strictly limited to a conventional adaptation, and application, of the characteristic elements in natural things which may, or can, be used as hints or subjects for design.

In this last word lies the whole question. It must be design, a contriving by thought and imagination to evolve something beautiful out of the material, offering suggestions, in things we see; but never an endeavour to repeat these things exactly as they appear and are, so that the thing repeated may seem the thing that is.

We are asked, "What is graining? Is it an

attempt to deceive the observer? What is the result? Why is it done?" Very pertinent questions these! Let us find the answers. We are given a somewhat categorical reply.

"Graining is an attempt to represent the superficial appearance of something other than the material painted. It cannot deceive the observer who has a knowledge of woods—it conveys to the mind the abstract idea of wood."

Would it not be more accurate to say that a representation of wood conveyed a concrete fact than an "abstract idea." Then, further, "it is used, artistically, because it conveys this idea of material." Now this is just the matter upon which opinions are at variance: to convey the idea of material which does not exist in reality in the appearance, substance, or presentation, which is the cause of that idea. What is a sham, a deception, a simulation, an untruth, a lie, but that which conveys an idea which is directly or indirectly contrary to reality, to truth, to fact? Some of these customs, now opposed, seem to find their sole sanction in certain colourings of the contemptible and vile Machiavellian philosophy. Many of the arguments which have been examined are not consistent with the dictum laid down in the chapter on the "Philosophy of House Painting," wherein we are told, "art means the act of doing work, provided the doing is scientific, right, and true." This dictum is the author's principle, but those arguments are the usual resort of less fervent and disinterested idealists. Alexander Pope is quoted to support graining! Thus—

"First follow Nature, and your judgment frame
From her just standard."

Yes, follow her practice, which is consistent with her principles, and remember that Keats said—

"Beauty is truth, truth beauty--that is all
Ye know on earth, and all ye need to know."

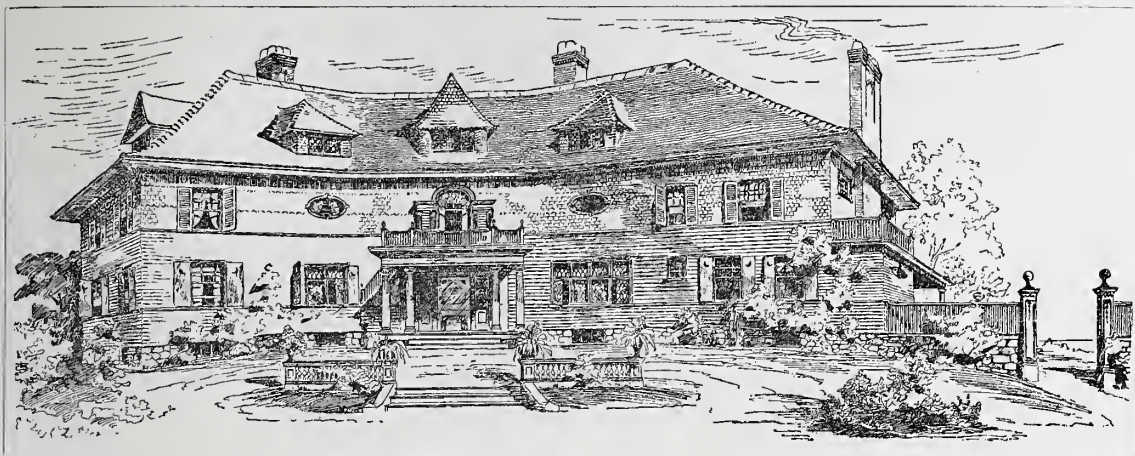
The *Dunciad* must come to our aid as well:—

"Art after Art goes out, and all is night;
See skulking Truth to her old cavern fled,
Mountains of casuistry heaped o'er her head!
Philosophy, that leaned on heaven before,
Shrinks to her second cause and is no more."

But to conclude. "The man whom Nature's self had made to mock herself, and truth to imitate," is the man we can best do without, in the sense—not of the original—in which are applied these words. Let us therefore be true, not imitate truth; act, not simulate it. None should like imitative "graining," because no code of true morality can sanction, nor reason vindicate, its use.

The book, however, is an interesting one, and contains much that will be found useful.

HUBERT C. CORLETTE.



House at Setauket, N.Y. (Messrs. Lamb & Rich, architects.)

A STUDY OF DOMESTIC ARCHITECTURE IN THE EASTERN STATES OF AMERICA IN THE YEAR 1896.

WITH SPECIAL REFERENCE TO QUESTIONS OF PLAN, CONSTRUCTION, HEATING, DRAINAGE, &c.

By A. N. PATERSON [A.], M.A., *Godwin Bursar* 1896.

Read before the Royal Institute of British Architects, Monday, 18th April 1898.

THE first colonists carried with them to America not only the language, the laws, and the flag of the old country, but its architecture also. In what is now known as "Old Colonial" the visitor from England finds reproduced, with such modifications only as ensued from the general adoption of wood instead of brick or stone, the buildings of the time of Queen Anne and the first Georges. More than the language, perhaps, if not so much as the flag and laws, has the architecture been changed since those days. Influenced by new conditions of climate, of materials, and of class relations, and impelled by a constant and steadily increasing influx of wealth and demand for comfort, America, guided in later years at least by a body of able and highly-trained architects, has produced a type of house characteristic and original. While in many respects similar to, in more it differs from, our own. From an artistic point of view it is not less interesting; the best examples, if they do not surpass, are at least quite equal to the highest standard of work in this country. Regarded from the point of view of *convenience* and *comfort*—as is required by the Godwin Bursar—the type is distinctly superior to that common in England, and capable of teaching not a few lessons to those engaged in meeting the requirements of householders on this side of the Atlantic.

INFLUENCE OF CLIMATE.

Of the new influences which have modified the practice in America, the most important has probably been that of climate—the extreme variations of summer heat and winter cold: for to both of these extremes is ultimately due—paradoxical as it may sound—the more *open* type of plan which at once strikes the student as characteristic of the American house. The summer heat renders the American more susceptible to the other extreme; his "heat-producing centres" are not in such good working order as ours, as it was expressed by one of their medical men, and the cold in its turn being excessive, a general and complete system of heating has become an essential feature of domestic comfort, and therewith has modified in many directions the arrangements of plan.

PLAN.

Cellar.—In the first place the installation of a heating apparatus requires, as does also the malarial tendencies of the climate in many parts of the States, a cellar; and the cellar—while by no means general with us—is an indispensable feature in the American house in town and country. Being required by the heating arrangements, the cellar also plays a most important part in determining the character of the drainage scheme, while it may also be utilised to a certain extent for storage, though in general there is little room left for this in the completely equipped house—from the modern American point of view—when the whole of the extensive machinery in connection with the elevators, dumb-waiters, electric lighting, and ventilating plant, in addition to the heater and drainage, has been installed.

Draughts.—Again, the system of open fire-place heating in Great Britain tends, of its very nature, whatever be its advantages, to produce draughts, both within the room itself, and more particularly between room and hall, corridor and staircase, when, as is generally the case, these latter are not heated independently. Hence one of the first necessities in English house planning is to reduce to a minimum, consistent with convenience, the doors and other openings, and so to arrange them that draughts may be avoided. In the American house all parts are heated alike, and are kept at the same, or nearly the same, temperature, so that draughts are reduced to a minimum. The double door of generous width becomes therefore the rule rather than the exception, and these are generally, on the sitting-room floor at least, and except where special privacy is required, left open. A large double door with its leaves hinged, and constantly open, would be very much in the way, and hence the almost universal adoption of sliding doors.

The Hall.—In the smaller house this equable temperature has one effect of great importance, as it permits of the enlargement of the hall at the expense of the other sitting-rooms, which may be reduced in size, and also in number to two or even one. The increased importance of the hall, and the liberal allowance in number and size of door openings, combine to produce the *open* nature of the American house plan, which even a casual glance at a few examples on paper suffices to bring out as a prominent characteristic of the type. In actual use, as the result of the open vistas in all directions, while it takes away from the feeling of privacy dear to the Englishman, it gives a marked effect of spaciousness even to the smaller house. It is, as indicated, the direct result on one side of the system of heating employed; on the other, during the heat of summer, and with the furnace no longer going, this openness of plan has the advantage of allowing a thorough circulation of air entirely desirable under such circumstances. The same arrangement, in fact, which in summer cultivates draughts, in winter represses them. The natural heat during one part of the year renders openness desirable, the artificial warming during the remainder of it renders it possible, and in result it becomes the typical characteristic.

Verandahs.—More self-evident, as the result of climatic influence, is the large development of the verandah in all suburban and country residences. This characteristic feature in plan and elevation is, indeed, a first necessity. During several months of the year the piazza may almost be said to be the only habitable portion of the dwelling, and as, in consequence, it takes the place of the whole of the family sitting-rooms (with the exception of the dining-room) during summer evenings, a proportionate amount of accommodation and floor-space must be provided. The disadvantage which, in this country, would result from the overshadowing of the windows does not follow there, owing to the clear and penetrating nature of the light at all times throughout the year.

Bedroom "Closets."—Not so evident in its connection with climate and the heating

system is another typical feature—and an excellent one—of the American house plan, that of the bedroom closet, yet it is possible that to these are at least partially due its existence. In an English house of the middle class it may safely be said, I think, that a fire in the bedroom, and in the absence of other sources of heat, is an exception, except, perhaps, in the severest weather. It follows that during a great part of the year the room is too cold to be occupied by its owner except when in bed. The various members of a family have in consequence to be contented, during those hours of the twenty-four that are not passed in sleeping, with a share in the accommodation provided by the family sitting-rooms. That this is not the case in the United States is a generally recognised feature in the social life there. Bedrooms being as generally and naturally warmed as family rooms, they become secondary and independent sitting-rooms or snuggeries. This being the case, it is conceivable that clothes and clothes receptacles in the way of wardrobes, chests of drawers, &c., would become regarded as undesirable features in the room, and the natural evolution of the cupboard as an indispensable adjunct follows. In passing it may be noted that probably to the same cause may be traced that wonderful piece of furniture, on which so much American ingenuity has been bestowed, the folding bed. In the smallest class of house, where the bedroom is the sitting-room, and in the boarding house, where it is regularly used in this capacity, the desire is natural that the bed should take less space and conceal its ordinary functions behind the elegant exterior of a quasi cottage-piano or bureau! The “closet,” then, is a feature that cannot be overlooked in considering the American house plan of to-day. In the smallest suburban house no bedroom is complete without it, even if the accommodation has to be cut out of the floor-space of the room. In the larger house they are frequently of considerable extent, and are fitted up elaborately with drawers, trays, shelves, hooks, and more ingenious appliances for storing, each in its proper place, the various articles of wearing apparel. As already said, the whole forms a most excellent and convenient arrangement when properly made use of. An undoubted, and, to some extent, natural tendency exists, I noticed, to utilise it as a place to stow away anything that may for the moment be wanted out of sight, from soiled linen to portmanteaus. The accumulation that results renders the convenience doubtful, the desirability of it as a feature in a plan of questionable merit. Even with this tendency, however—for which the architect can scarcely be blamed—the matter may be largely put right, and frequently is in the better and more complete houses, by the provision of a separate closet opening off the bath-room or neighbouring corridor, with a window to the outer air, for all the soiled linen of the household—and possibly a shoot to the laundry—as well as sufficient storage room for trunks and other impedimenta, leaving the bedroom cupboards for the orderly arrangement of each individual occupant's clothes.

Service Rooms.—To class relations rather than to climate is due another marked feature in the American house plan—the simplicity and directness of the service arrangements, together with the extensive use of labour-saving appliances of all kinds. One of the leading architects in the States, and one largely occupied in domestic work, made the remark concerning this, that the one feature in the English house plans as published which rendered them inapplicable to American practice was the isolation of the servants' quarters, with the long routes that in consequence had to be traversed, especially between the kitchen and dining-room. Professor Kerr's dictum as to the separation of the two communities of family and servants, however applicable it might be in the old country, he declared to be impossible in the new. There, the number of domestic servants is fewer, their efficiency less, and, in consequence, everything must be done towards simplifying and saving labour. The care which the architect devotes to this point will be more evident when we examine in detail some of the plans which follow, and it will be seen that here, too, we have a typical and—in view of

the increasing difficulty of the domestic-servant question in this country—a valuable feature in the American house plan. Further matters of detail which might be referred to now will be better appreciated when studying the individual instances. These fall into the natural divisions of town, suburban, and country residences.

The Town House.—The main problem involved in the satisfactory planning of the town house, that of securing sufficient light with a restricted frontage, is, in one respect, at least, not so difficult of solution in America as in England. The restrictions of site are not less—in New York the average city lot is 25 feet by 100; but the much greater brilliancy of the light renders it possible to cover a more extended area while depending on front and back light only. A further assistance is rendered by the openness of plan and absence of corridors already commented on.

Self-contained Houses.—Of the various types of town houses we shall first take one or two examples of the self-contained residence. Within recent years a marked change has been effected in the general type of plan. The “Old Colonial” arrangement, still seen in thousands of instances in the “brown stone fronts” of New York and Boston, was, with little change, that to be found in the older squares of London: a half-sunk basement, with a parlour to the front and kitchen offices to the back, a steep flight of steps from the street (in America the “stoop”) giving access to the main door on the ground floor, with its narrow hall or lobby and still narrower stair, and with front and back rooms communicating with each other by double doors. Apart from the ugliness and inconvenience of the lobby and stairs, the unprotected flight of outside steps was ill-adapted to the requirements of a country subject to prolonged spells of snow in winter. Accordingly, in the arrangement now prevalent, both in new work and, by alteration, in the old, and generally known by the terms “American basement” and “English basement” (in the former the kitchen is on the ground floor level, with the dining-room over, in the latter the dining-room is on the level with the kitchen below), the “stoop” is done away with, an entrance hall and reception room are obtained on the street level, or sometimes even a step or two below it, occupying the position of the old parlour, and the stairs are thrown back to the centre of the house, with, in some cases, a cupola light over. A completely sunk basement underneath contains the heating chamber, &c. Such is the arrangement of the self-contained house of average size; the city palace, as it might be called, of the wealthy, conforms more to the European model, with American characteristics confined to matters of detail. The pair of houses now being built at Madison Avenue and Seventy-second Street, by Messrs. Kimball & Thompson, architects [fig. 1] illustrate both of these types. The large house, with its frontage to the Avenue of over a hundred feet, and its corner site, is subject to little or no restriction as to light, and is planned on spacious and symmetrical lines, with the evident end in view of stately and lavish entertainment; the small house, with frontage of 18 feet only, is a typical “English basement” arrangement. Both show, as do in greater or less degree all the subsequent plans, the *openness* of arrangement already referred to. In the former, the bowling-alley may be noted as a somewhat unusual extension of the entertainment provided in a private residence. The two upper floors contain the bedrooms, the principal bedroom with its “closets” and dressing-room occupying the same area as the drawing-room, with, in addition, a large ball-room on the top storey. In the smaller house may be noticed, besides the characteristics already referred to, the hall and staircase, on both entrance and upper floors, lit *only* from the front and back, and also the invariable service pantry between the kitchen and dining-room. The bedrooms on the second and third floors are front and back, with the bath-rooms and w.c.’s in the centre. These latter are lit and ventilated only by a glazed well with skylight at the roof level, an objectionable arrangement at the best, but one common enough in the States, where, however, it must be added, the system of general heating largely overcomes

what would otherwise be a defect. Hot-air inlets or radiators being excluded from the w.c., and the apparatus ventilated by an air-shaft led into the kitchen or other generally heated flue, the air direction from the rest of the house is always inwards; and from practical experience, neither in such apartment nor in the lobby outside and with the door left open was there any trace of objectionable odour. The basement here being devoted entirely to kitchen offices, a sub-basement has to be provided for the heating chamber, drainage, &c. Its floor is 20 feet below the street level, and in a wet subsoil, so that a complete system of open drains had to be laid under the floor, connected with a gathering well in the centre of the boiler room, from which the water is raised by a small electric pump, and thence delivered to the main sewer.

Groups of Houses.

—An ingenious group of six small self-contained houses, erected to the designs of Messrs. Little & O'Connor, on a corner block, 100 feet square, in New York, is illus-

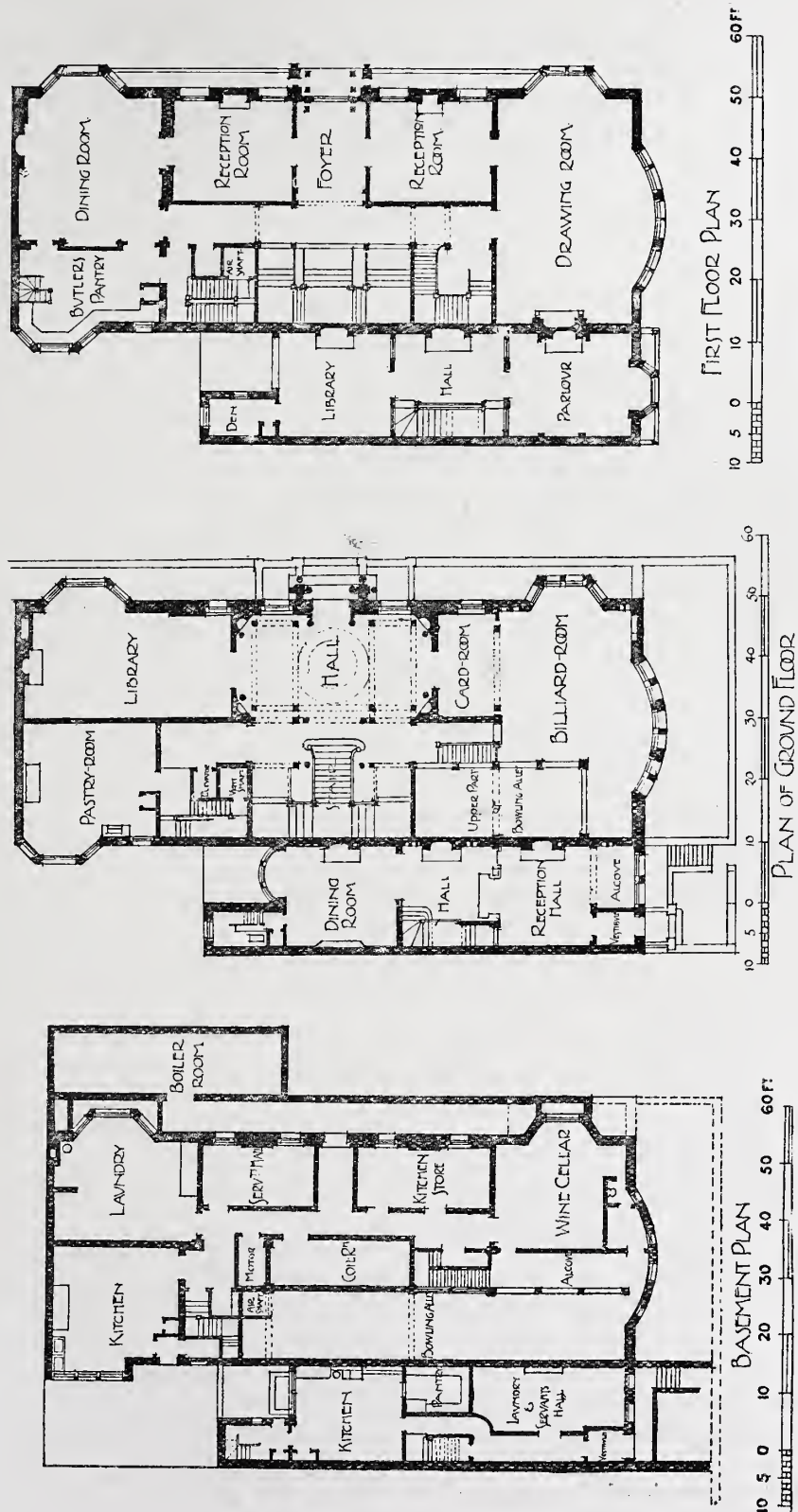
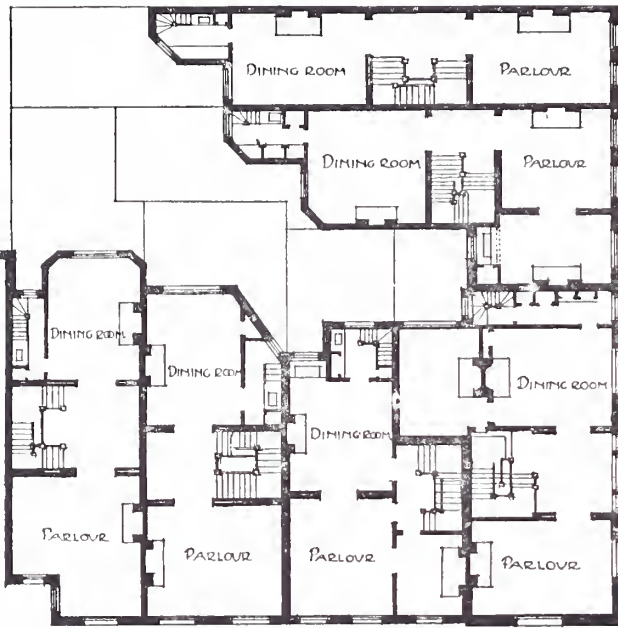


FIG. 1.—PLAN OF TWO HOUSES, MADISON AVENUE AND SEVENTY-SECOND STREET, NEW YORK. (Messrs. Kimball & Thompson, architects.)

trated in fig. 2. It is one of several such blocks recently erected by them, so arranged as to give

each house its "backyard," and what is of greater importance, an ample supply of sun and air from the back. Of such independent groups of houses many interesting variations are to be seen in New York.

Washington Examples.—As regards the self-contained residence, the other cities visited, with the exception of Washington, offered little variation in plan from the types already noted. The capital, however, well described as the "city of magnificent distances," having been laid out from the beginning on a regular plan—which has been likened, from the lines formed by the streets, to a wheel laid over a grid—furnishes a great variety of wedge-shaped and other special forms of building sites. Space is at the same time much more liberally distributed to the individual lots. The climate approximates more nearly to that of the Southern States, and renders necessary, in consequence, an even more airy and open type of plan. As the result of these influences the city house



PLAN OF FIRST FLOOR

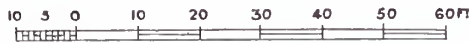


FIG. 2.—BLOCK OF SMALL SELF-CONTAINED HOUSES, NEW YORK. (Messrs. Little & O'Connor, architects.)

of Washington has generally much of the "suburban" character as well as certain special features of its own. The Davidson house [fig. 3] offers a typical example from a number

designed by Messrs. Hornblower & Marshall, architects, Washington. It is not a particularly large or important house, but in it the *art* of planning is admirably exemplified, the very awkwardness of the site being turned to advantage, and that with due regard to the scale, proportion, and a certain symmetry in the disposition of the apartments. Washington is in a brick country, and in most of the later examples of domestic work this material has been employed in a natural and simple manner, and with a fine reticence in design, which, as yet, can scarcely be said to characterise markedly American architecture in other centres.

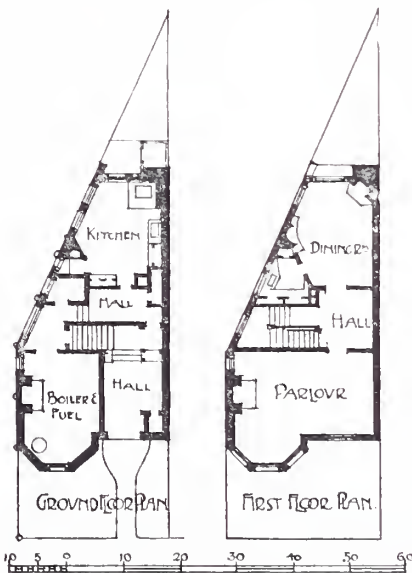


FIG. 3.—DAVIDSON HOUSE, WASHINGTON. (Messrs. Hornblower & Marshall, architects.)

The Apartment House.—The apartment house is, as is well known, a characteristic feature of modern life in the United States, and particularly in New York, where, owing to the enormous value of land, and the almost entire lack of "suburbs," it forms the only style of dwelling procurable by those of comparatively moderate means. "The Wellesley," Eighty-first Street [fig. 4], is a building of this nature, which I had the opportunity of visiting when almost completed, in company with one of the architects, Messrs. Little & O'Connor. It is

seven storeys in height, and occupies an area of 120 by 100 feet, while so planned as to form, with three other identical buildings, a complete block four times the size of that now erected. Entering direct from the street is the public hall, with porter in attendance, a clerk's office, and ladies' boudoir, and cloak-room, for the use of callers and visitors, furnished, as might be expected, with an "elegant" cheval glass. A passenger elevator takes us to the upper floors, on each of which are four houses of six apartments and kitchen offices, all entered through an inner vestibule from the upper public hall. The reception rooms are all arranged *en suite*. By a separate goods entrance on the ground floor, and thence by electric dumb-waiters, supplies are delivered directly into the kitchen of each house, the opening from the shaft to the kitchen being closed, as required by the Building Act, with an iron door. From the basement, where the whole of the machinery is in charge of a resident "engineer,"

heat is laid on to all rooms by means of steam radiators, and also a freezing mixture pumped to the refrigerators in each house, so that, with the fires adapted for gas only, neither coal nor ice need be included in the domestic supplies, and the lifts are freed from the transport of such objectionable materials. Each house is supplied with separate metres for gas and electric light, but these are likewise lodged in the basement in care of the attendant. The doors throughout are sliding, to secure economy of space, which, indeed, is the ruling motive throughout, both in plan and construction. On the roof are situated the washing-houses, one for every three houses, so that each may secure its use during two days of the week. These are

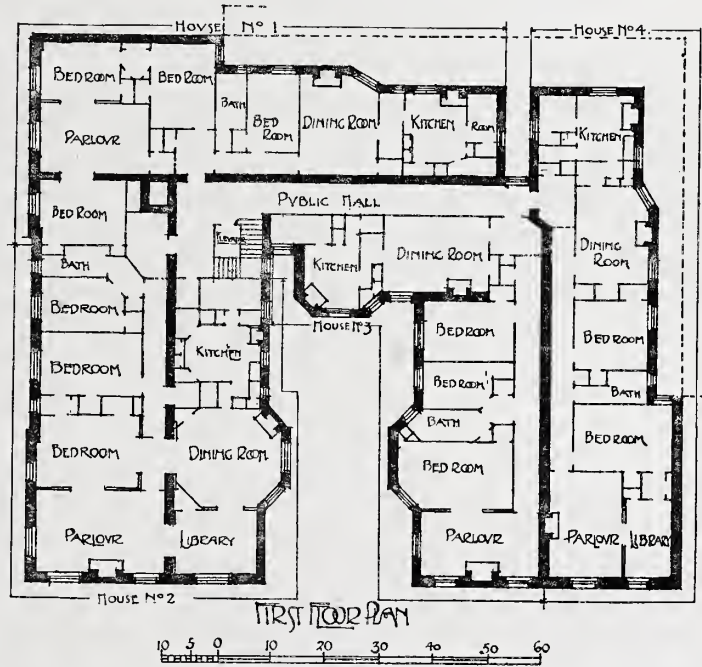


FIG. 4.—WELLESLEY APARTMENT HOUSES, EIGHTY-FIRST STREET, NEW YORK. (Messrs. Little & O'Connor, architects.)

supplied with enclosed steam driers, while the remainder of the flat roof is divided into sections for open-air drying, each section being surrounded and covered in with wire-netting. The dumb-waiters are continued up to the roof for the delivery and return of the linen. While the plan is admirably arranged to secure as free entrance as is possible of sun and air, it is natural to find that, with the exception of the ground floor, with its special advantage of convenient access, the rents rise in direct proportion to the rise in elevation. Those of the houses described were not at the moment obtainable; but I was provided, by the courtesy of the proprietor and architects, with a schedule for a similar block in the neighbourhood, though not quite so modern and complete in design, and with slightly less accommodation. There the rents varied from 1,200 to 1,450 dollars—£240 to £290—for from five to six rooms and kitchen—giving a total of about £7,000 for the block—and this far "up town," at a distance of about five miles from the business centres. This, it must be remembered, of course, includes the enjoyment of the common services of the clerk, porter, engineer and boudoir, with taxes, and supplies of heat and freezing mixture *ad lib*. The larger and more famous

apartment houses, such as the "Dakotah" and "Vancorlear," designed by M. Hardenbergh, architect, the former of which I visited, are but larger and more sumptuous editions of the type just described.

Workmen's Houses.—One more phase of domestic architecture in the city must be briefly alluded to, that of houses for the working classes; of these on modern lines, New York, at least, is much in need. Than the airless, backyardless tenements with which the lower portions of that city are crowded, each on its lot of 25 by 100 feet, and of which in actual buildings it covers fully 80 per cent., nothing could be more vicious from a sanitary point of view. Efforts to better matters have recently been initiated, among others, on the lines proposed by Mr. Ernest Flagg, architect, who has published a pamphlet on the subject. His improved plan deals with areas of 100, 75, and 50 feet wide respectively, by the usual 100 feet deep; but even with the enormous ameliorations introduced, his central court is only 30 feet wide, and his side wells—open to the front and a half contributed by each adjoining tenement—18 feet, while the buildings, if with no more than six storeys, would be at least 60 to 65 feet high. Such conditions as regards light and air, though effecting a very revolution on the previously existing state of affairs in that "land of freedom," would not be tolerated in this "class-ridden" little kingdom, where, as provided in the Buildings Act of my own city of Glasgow, with all its crowding, a free space of three-fourths the height of its wall is required opposite every dwelling-room window. In the other cities visited, where the geographical restrictions as to area, with which New York is hampered, do not exist, the condition of affairs is vastly better, and in Philadelphia in particular, the "city of homes," as it is proudly called, there are miles of admirably planned two-storey and basement "model" houses. These, however, are more of the nature of "lower middle-class" dwellings than actual workmen's houses, and it is only by virtue of low ground annuals, and an extended trolley-car service, that they are rendered possible. In New York, a large "Workmen's Hotel" or model lodging house was, at the time of my visit, in course of erection for Mr. D. O. Mills to the design of Mr. Flagg. It is of the same type as the Rowton Houses in London, and as these are well known here, I propose—in view of the limited time at my disposal—to omit the description of the American example.

The Suburban House.—For an illustration of the Suburban House at its best, in Eastern America at least, one turns naturally to Boston, with its magnificent suburb of Brookline. Distant about four or five miles from the centre of the city, but connected with it nearly all the way by a series of parks, the character of the surroundings is little changed on entering the suburb. On the sloping hillsides, covered with fine turf, and amid frequent groups of trees, each house is surrounded by its own lawn and flowering shrubs, bordered only by the footpath of the public road, and generally without railing or fence of any kind. The houses, mostly of large size, are constructed of every material; but the great majority are timber-framed, and covered with matchboarding or shingles. The varied but subdued tones of the latter, left in its natural colour or stained, with the brightly painted woodwork and stucco facings, the brick or stone chimneys and gable ends, impart a charm of brightness and gaiety to the whole surroundings. Just such an effect is again to be met with in the Melrose and Oak-lane districts about Philadelphia, or, on a smaller scale, at Rowland Park, near Baltimore. Of one of the Brookline houses, that of a banker of Boston, of hospitable memory, designed by Messrs. Hartwell, Richardson & Driver, of Boston, I am able, by their courtesy, to give a complete set of plans [fig. 5]. The house stands in about half an acre of ground, and has nearly 100 feet frontage. While the view is open and pleasant all round, the ground slopes rapidly to the back, and the outlook thence affords, south and west, a magnificent panorama of the city and harbour. Hence the placing of the principal drawing-room and circular

piazza on that angle. The construction is timber framed and clapboarded, with shingled roof. The plan readily explains itself, and admirably illustrates the special characteristics referred to on an earlier page, the free and open nature of the arrangement, the wide door-

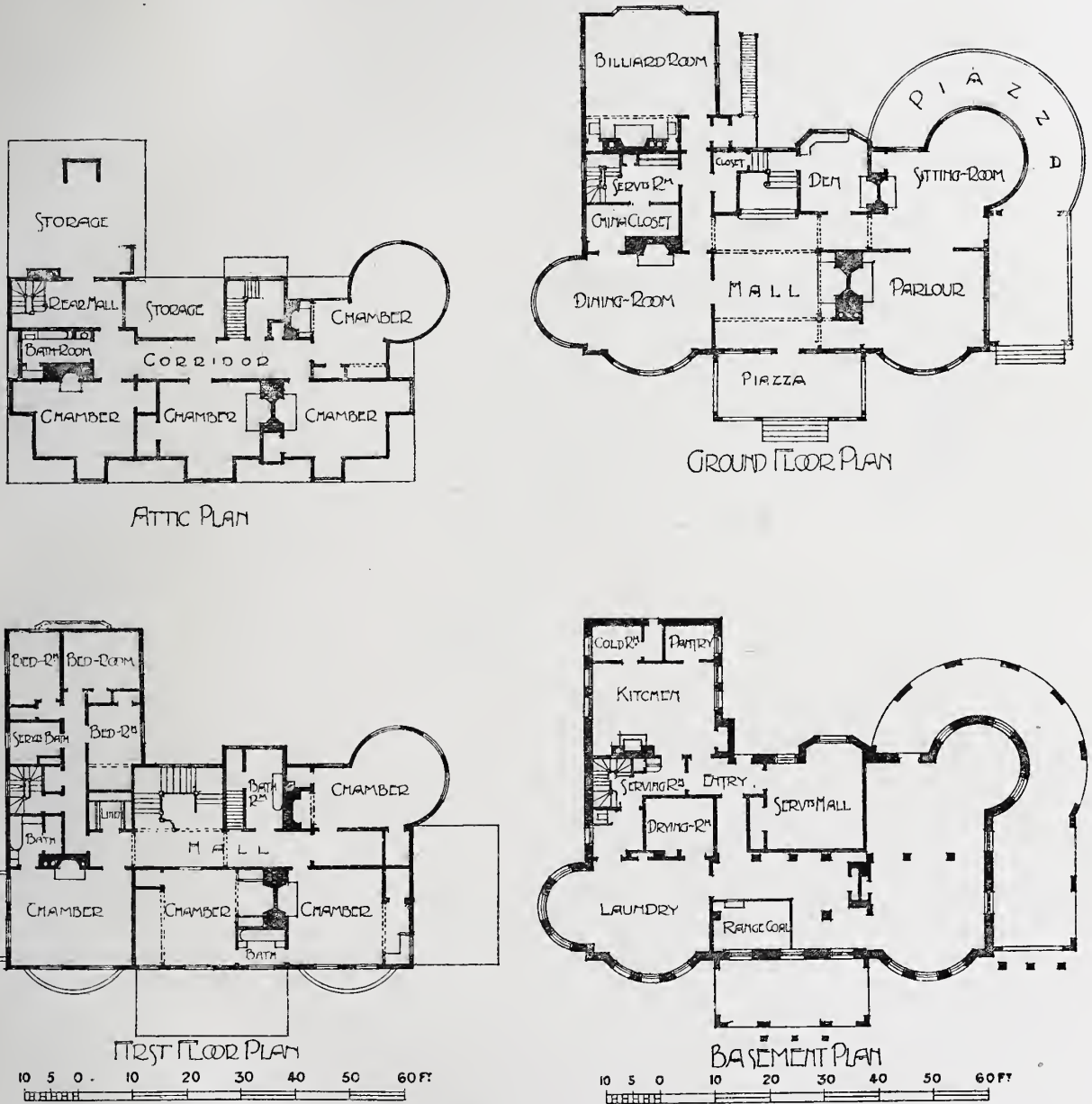


FIG. 5.—PLAN OF HOUSE AT BROOKLINE, BOSTON. (Messrs. Hartwell, Richardson & Driver, architects.)

ways, affording vistas in all directions, the carefully planned service arrangements, the extensive bedroom cupboards—the family bedroom in the south-east angle has two—and an immediately adjacent bath-room. The billiard-room is isolated in the south-west wing, and similar seclusion on the floor over is obtained for the servants' sleeping-rooms, in close connection with the service stair. The large central hall, with generous chimney-corner—the

fireplace of brick carved delicately in flat relief—and wood panelled walls, is freely used as a sitting-room, though opening directly into the front porch.

The Country House.—The Country House proper, as it is understood in England, the family home, of which the town mansion, if it exist at all, is but an offshoot and temporary convenience, may be said, with rare exceptions, and these mainly in New England, to have no existence in America. Such may be found also, it is true, among the “Old Colonial” mansions of the Southern States; but the country house of the wealthy American is in general a place for summer resort, a *pleasaunce* rather than a home, and to study the type one must go to a fashionable watering-place, and above all others to Newport. There may be gathered some idea of the variety of the American plutocrat’s tastes in domestic architecture.

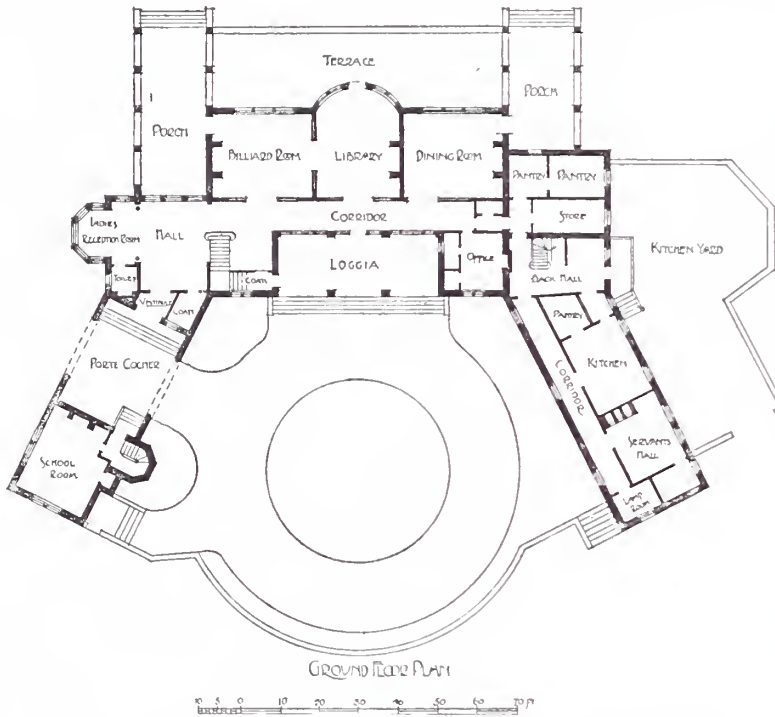


FIG. 6.—SHAMROCK CLIFF, NEWPORT. (Messrs. Peabody & Stearns, architects.)

its octastyle Corinthian portico, is naturally taken, at first sight, to be a museum or local court of justice. Nor is the Italian Villa unrepresented, nor the unmistakable *Beaur-Arts* rendering of the same motive; while the crescendo of extravagant outlay reaches a climax in the latest of the number, the stately mansion of Cornelius Vanderbilt, a second Chatsworth, with its four hundred rooms and total cost of four million dollars, its wrought-iron gates weighing three tons, its white marble gate piers and porter’s lodge—in reality housing the boilers and heating apparatus—situated within fifty yards of the *porte cochère*. Yet many of the houses, individually, are full of interest both in plan and design. By the courtesy of the architects, Messrs. Peabody & Stearns, of Boston, I am able to exhibit [fig. 6] the ground plan of one of the most typical, Shamrock Cliff. Its general disposition, with the “drive-way” passing through and under one of the projecting wings, and its suite of reception-rooms with terrace and porches overlooking the sea, is at once picturesque and stately. On the upper floor the family bedrooms and guest-rooms occupy the centre, the nursery accommodation the whole of the left wing, and the servants’ quarters the right

Newport suggests, indeed, nothing so much as an outdoor museum of the styles, historical and otherwise. In the miles of avenues which intersect in every direction on Prospect Hill, may be seen, mingled with typical American framed houses, weather-boarded and shingled, stained and painted in every colour, gabled and turreted as to roof and spreading wide with piazzas, *François-premier* châteaux from the Loire, half-timbered and tile-hung cottages from the neighbourhood of Hampstead Heath, contrasting with sober grey stone manor houses from the West Riding of Yorkshire, and backed by a white marble palace—on a half-acre lot—which, with

wing. The walls are of stone throughout, lined with brick, and the roofs are covered with Italian tiles. While the main part of the building is only two storeys in height, the end of the left wing rises in the form of a lofty and massive tower, with open gallery under the wide spreading eaves. The total length of the buildings measured across these wings extends to 172 feet. In the country house of Mr. Chas. J. Bonaparte, near Baltimore, by Messrs. Wyatt & Nolting, we have a return to the more simply domestic feeling, with, at the same time, a certain spaciousness and dignity which suggest the south. The great reception hall, continued across the whole width of the house, but divided on occasion by curtains, while only possible under such climatic conditions as those of a southern, or at least border, State, gives an air of nobility to the whole design. A similar effect is produced in the elevation, and the position of the hall well marked, by the great projecting portico, with Ionic columns rising through two storeys and crowned with a pediment. In the house at Ridgefield, Conn., by Messrs. Adams & Warren, we have an example of the small country house, simple, well-arranged, compact, yet with the characteristic American spaciousness shown in the airy central hall, not only on the ground floor, but on the upper bedroom storey as well; while a still smaller example by Mr. Alex. McIntosh well illustrates an American bungalow or small summer retreat.

CONSTRUCTION NOTES.

As might be expected with a progressive people like the Americans, upon whom the old ways sit lightly, since tradition in craft as in art is but a thing of yesterday, fireproof construction is now very widely made use of in all kinds of buildings, including domestic work. The steel framed construction by which alone the "tall buildings" are rendered possible is to-day a factor of the greatest influence, and one, I believe, of more general effect than the American architects recognise. The tall buildings themselves offer an interesting subject for consideration, but one that must be set aside as beyond our present scope. Suffice it to say that this system of constructing a building on the principle of a steel cage, divided horizontally into layers, as may be convenient, with no internal supports to speak of, and the whole sheathed with an apparently—but utterly sham—constructional skin of granite, stone, brick, or marble, is influencing in a hundred ways, though often unconsciously, the architect's point of view in plan and design, in domestic as in other buildings. Take a solitary instance of this. The stone corbelling under the projecting oriel, a feature constantly recurring in the *François-premier* houses of New York, is in nine cases out of ten a sham. The window mullions, themselves probably formed of stone sheathing round a steel core, are carried by steel cantilevers bolted at the back into the girders of the floor below, and the correctly designed and jointed corbel courses with difficulty carry their own weight. But what will you, says the architect, with stone at a dollar-and-a-quarter a cube foot? And the same excuse is sufficient for cornices, designed as for stone, and executed with steel, concrete, or wood framing, covered with copper or galvanised iron, and painted. Yet the same house must have its marble, mosaic, and hardwood finishings, at a cost ten times that which would have sufficed for making the construction honest. The influence, in short, seems to me to be wholly pernicious from the point of view of sound architecture, and the architects, while they admit it, find the prevailing tendency in most cases too strong for them. The details of the steel framing system for walls have already been frequently described, and need not be further commented on here. The system of sheathing which accompanies it is not, in the principal cities at least, confined to steel framing, for in nearly every case the outer wall surface is of this nature. The walls themselves are built of brick, by the various building laws, of specified thickness according to height, and without reference to the covering, which is but a skin, be it of stone, Tiffany brick, granite, or marble, of from 4 to 9 inches in thickness.

Securely tied to the wall behind with iron or copper batt-bolts, or in the skeleton frame carried from storey to storey by projecting flanges, it has not even its own weight to support, and the elaborate architectonic treatment of bold rustication, corbelled courses, columns, pilasters, and vousoired arches borrowed from an earlier architecture of solid and honest construction, becomes, in such cases, much the same in nature as a set piece on the stage.

For roofs, floors, and partitions, fireproof construction is now generally adopted in all important domestic work in the cities, but in detail it differs little from that common in more important buildings in this country. Floors for houses, however, being generally of less area and subjected to lighter strains than those of public buildings, lightness and cheapness become important desiderata in their design, with a consequent abandonment of the elaborately constructed terra-cotta arches between the girders common in this country. In this connection, floors with tension members are coming much into vogue. In the construction of flat roofs an extensive use is made, in combination with other materials commonly employed here, of "roofing paper" or felt, laid in several thicknesses and bedded in tar. Most commonly the outer skin is of copper, laid either directly on the concrete, or on wood and felt, in sheets 12 inches by 24 inches, and with soldered joints. This material is also largely employed, as already mentioned, for sheathing cornices, wood or iron-framed bay windows, &c., sometimes with excellent results artistically, and, with galvanised iron or tin as an alternative, for aprons, ridges, and flashings, where lead would be used in this country. Partitions are commonly built of hollow blocks of porous terra-cotta. Tiles of similar type are used for casing structural steel-work, and in some cases instead of lathing on the internal wall face. Thin fireproof partitions, finishing from $1\frac{3}{4}$ inch to $2\frac{3}{4}$ inches in thickness, are much in favour from the saving in space effected. These are mainly constructed by using channel or flat bars, with expanded metal lathing or burlap between, plastered with hard setting mortar on both sides.

For country and suburban houses, timber framing covered externally with clapboarding or shingles, is the method of construction almost universally employed. The half-sunk basement storey containing the heating apparatus is of stone or brick, as likewise are the chimney flues and stacks, with occasionally the whole of the gable containing these. Not infrequently the favourite boulder-built type of walling is carried up in the form of rough piers supporting an overhanging upper storey or verandah roof. It comes with rather a shock to find in such a case that the apparently massive rough-hewn pier may be, like the more elegant columns and pilasters of the city front, but a sham after all, an affectation alike of strength and rusticity, with a steel stanchion for core to do the actual work. An instance of this which came under the writer's observation was, however, it must be admitted, in the near neighbourhood of New York. The timber framing of the outer walls is, in the great majority of cases, extremely simple and slight to our notions, and, as seen in the course of construction, the buildings suggest nothing so much as an enlargement of the little wood cages of the itinerant bird-seller. Vertical framing 4 to 6 inches by 2, at 15-inch centres, with heavier corner posts, and rails at the level of intermediate floors and wall-head, with an occasional row of horizontal struts, would seem little likely to withstand severe wind pressure; but the strength to resist such forces is obtained when a further stage in the construction is reached, by the inner of the two outside coverings in the form of $\frac{3}{4}$ -inch boarding put on diagonally, and well nailed to each row of framing. Over this again is laid the clapboarding or shingles, with, in good work, a layer of felt or rosin-sized paper between. While in the cheaper type of house the inner side of the framing is simply lathed and plastered, there are various expedients in superior work for rendering such walls more impervious to heat and cold. Of such are lath and plaster on fillets set midway in the framing, a layer of dried

sea-weed quilted between two layers of waterproofed paper, nailed all over the inside, battened on the top and then lathed and plastered, or, most substantial of all, lath and two-coat plaster, then battens, and the whole finished with lath and three-coat plaster in the ordinary way. Wood shingles, though but little employed in this country, are too well known to require detailed description. When left their natural colour, or simply stained, the effect artistically is excellent, and their weather-resisting qualities in the generally dry climate of America entirely satisfactory. When painted they are reduced to the level of tin scales. Various species of wood are employed, of which perhaps the most effective is cedar.

Akin to the system of double outer sheathing of the walls is the double flooring generally adopted. The under flooring consists of $\frac{3}{4}$ -inch spruce boarding in 6-inch to 8-inch breadths laid diagonally. This is laid down as the building advances, and renders the further stages of the work much more easy to carry on. It has the further advantage of allowing all lying pipes to be carried along the floor without cutting the joists, and over iron joists flush with these. The finished floor, be it of ordinary boards or parquetry, is laid down as the last stage of the building, and thus escapes all possibility of injury from the other tradesmen.

HEATING.

A complete system of heating is considered in the United States to-day to be as necessary a feature of the modern house as a system of drainage. That we, on this side of the Atlantic, should be content with open fires produces upon Americans much the same impression as does upon us the apathy of some of the more outlying countries of Europe and the East concerning modern ideas of sanitation. That the heat radiated from an open fire is the pleasantest and in some respects the most healthy may be admitted; but its inadequacy and irregularity is unquestionable, and its extravagance, with something like 85 per cent. of the heat produced discharged to no purpose up the chimney, is appalling. To trace the gradual development of house heating in America would be interesting, but beyond our present scope; the final result to-day, whichever be the system employed, leaves little to be desired, except perhaps a modification in degree. The high temperature, so generally the subject of complaint on the part of visitors from England, is, however, a local accident, the result of the American climate and constitution, and not an essential of the system. The same or similar plant which there produces an equable temperature of 70°, could here with equal or greater facility and with less consumption of fuel maintain one of 55° or 60°. The systems mainly employed are three: steam, hot-water, and hot-air. The two former may be direct or indirect—that is to say, the heating surface may be in the room, or may be placed elsewhere to heat the air which is ultimately led into the room. Direct and indirect may, and frequently are, both combined in the same system; and, finally, any two of those mentioned, or even all three, may be associated in the heating of one house. To study the details of steam and hot-water heating, one does not require to go out of England; they are commonly employed in public buildings of all kinds and sizes, and in many of the larger houses, and the details in the manner of installation differ but slightly here and in America. Warming by hot air, on the other hand, being essentially a system applicable to small areas only, is practically unknown in this country, while for all houses costing about 6,000 dollars (£1,200) and under, it is practically universal in the United States. I shall therefore omit any detailed description of the two former systems, and, after a brief reference to one or two special forms of installation, pass to a consideration of the modern hot-air plant. Before doing so, however, it may be briefly noted that in the smaller class of city houses, in apartment houses and hotels, where the limitations of space render a multiplicity of air flues embarrassing or impossible, and where its superior cheapness is of importance, direct radia-

tion, either by steam or hot water, is the universal system of heating employed. Of the two, steam is the cheaper and commoner, as well as the more efficient, in case of extreme cold; but it has the disadvantage, among others, that there are no means of modifying the heat. In consequence, for all the better classes of work where direct radiation is in use, hot water is the means invariably adopted. In some cases, however, the installation is so arranged as to suit either steam or hot water, the latter being employed under ordinary weather conditions, the former during periods of abnormal cold. In all the more luxurious and expensive city houses indirect radiation is the invariable system. In it the air, admitted through openings in the cellar walls, from which it is conducted by wood-boarded or galvanised iron shafts to iron or brick chambers, is there heated by radiator "stacks" suspended from the ceiling, and thence rises by virtue of its increased rarity to the various rooms above, into which it passes through the registers in floor or partition. In the largest mansions the assistance of an electrical or steam-driven fan is invoked to regulate the distribution of the heated air, which is also screened and moistened as required. It must not be supposed, of course, with all this that the open fire upon which we pride ourselves is unknown in America. The fireplace, in fact, is as general a feature in the American as in the English house, but its functions are considerably modified. As a heater it is of minor importance—the circumscribed space round the hearth is no longer the only habitable portion of the room of a winter night—but it remains as a most effectual, and generally the only, ventilator, while it is valued as much there as here for its cheerful appearance and the decorative character of its surroundings. An appreciation of these altered functions is necessary to explain, though perhaps not altogether sufficient to condone, the construction (very exceptional it must be admitted) of the fireplace in the principal bedroom of a house which came under my observation while in course of construction. Jambs and lintel boxed out with lath and plaster, tiled hearth laid over a wood floor, and flue consisting of 5-inch tin piping, are compatible only with the use of the popular "gas-log," which, like the Scottish Church, might take for its motto, "*Nec tamen consumebatur.*"

A recently erected block of "Dormitories," or students' residences, at Harvard University, which the writer had the pleasure of visiting in company with one of the architects, Mr. Sam Meade, of Boston, is heated on a system peculiarly suited to the arrangement of such a building, consisting as it does of many comparatively small and private rooms, and, along with these, extensive hall ways, staircases and lavatories, readily under the control for heating of one attendant. For the latter direct steam radiation supplied by one boiler and piping system is employed, while the studies are fitted each with its own "ventilating" grate, with hot-air chamber and fresh-air supply from outside, the heated air from the grate-back passing into the room. Such a system would seem peculiarly applicable to the more moderate heating requirements of this country. In the neighbourhood of Boston, also, on a building estate at Brookline, an extensive application of steam-heating from a central power station was also the subject of study. The estate consists of about twelve acres of naturally sloping ground. At the lowest point is placed the boiler-house, while disposed on roads running in various directions have already been built, besides a club-house and an extensive range of stables, eight "terraces," or "crescents," consisting of sixty-three four-storey self-contained houses, leaving room for further extensions of a like number. In the boiler-house are five boilers, with a total of 950 h.p.; but while the power of these may be combined for use in the severest weather, in ordinary circumstances only three are employed—two with a single 6-inch main for six of the terraces, and one with separate 3-inch mains for the other two. By reason of the fall of the ground, one pipe in each case serves for flow of the steam and return of the condensed water; but the highest terrace, about

30 feet above the power station, requires a main to itself, to prevent the steam supply to its lower situated neighbour being choked off by the return. The longest run of pipe is about an eighth of a mile to the farthest house, and in order to prevent loss of heat a very complete system of isolation and packing is required. After many experiments the method adopted [fig. 7] consists of a foundation of concrete and brick, with the half of a 14-inch glazed ware pipe jointed with cement laid over it. The pipes being laid through this, the surrounding area is packed with mineral wool. The pipes have expansion joints every 14 feet, and the trench is supplied at intervals with wells for collecting gathering water, and man-holes for access to the same. The main enters each terrace at one end, and passes longitudinally to the other. As it passes through the cellar of each house it is connected by a valve with the house main and its radiators. In the earlier houses the indirect system was adopted throughout, but the more recent ones have indirect on the two lower floors only, and direct radiators on the less important upper storeys. From each house an electric indicator communicates in case of need with the engineer in charge at the power station, who, besides, makes a daily round to see that everything is in working order. The rent charged to each house for its heat supply is at the rate of one dollar per foot of frontage per month, making, for an average house of 25 feet frontage, about £30 for heating during the six months in which it is required. This is a very considerable saving on what similar heating would

cost for each house were it separately installed, and, indeed, very much less than what would be spent in this country in warming a house of similar size, especially if the calculation be made on the basis of the number of heat units supplied. It is interesting to note that the fuel found most efficient as the result of experiments is a mixture of soft Cumberland coal and anthracite, in the proportion of one to two.

Hot-air System.—The hot-air system, as already mentioned, is almost universal in the smaller class of houses, especially in the suburbs and the country. For residences of eight or ten rooms, covering an area of not more than 1,200 square feet, it is found to form an entirely satisfactory method of heating. It is limited to buildings of this size (unless more than one furnace be employed) on account of the difficulty of getting the heated air to travel *horizontally* more than 15 to 20 feet, especially where under the influence of outside wind pressure. Its first cost is much less than that for a steam or hot-water system, and averages, for a house of the size mentioned, when done in the most satisfactory manner, 500 to 600 dollars. Such defects as are at times encountered—overheating of the air, or its vitiation by the gases of combustion, and unequal distribution of the heat—are entirely due to unsatisfactory or inadequate-sized furnaces, or unskilful or careless setting and workmanship generally. The three constituents of the system are the furnace itself, the distributing hot-air flues, and the cold-air supply.

The Furnace.—In principle a hot-air furnace is simply a stove enclosed within an outer jacket of brick or iron, forming an air chamber between the heater and the casing; but as the result of many years of experience and study, the various makers have introduced many refinements and improvements in the direction of greater efficiency. Furnaces are now made of cast-iron, wrought-iron, and steel, either singly or combined, and are supplied ready for setting down on the floor of the basement and connecting with the various shafts. In the

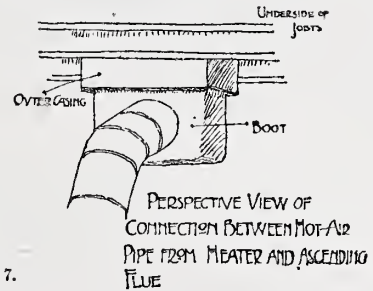
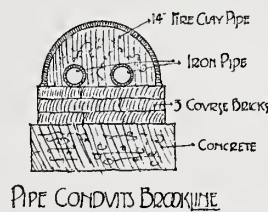
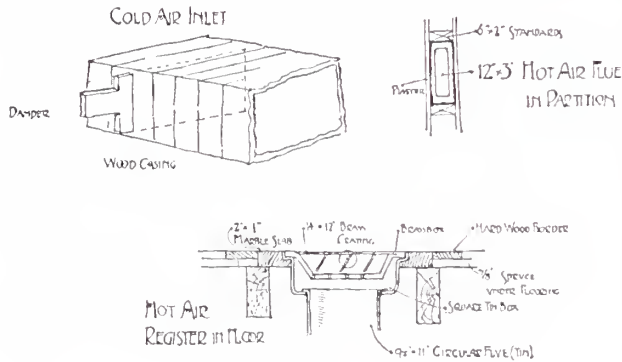


FIG. 7.

Eastern States anthracite coal is universally employed, in the Western, soft coal; for each a special make of furnace is put on the market by the principal makers, several of whom are to be found in every large centre. To describe any one of these furnaces in detail is impossible within our limits; one or two points common to all the best may be noted. The "fire-pot" is furnished with a shaking or dumping bottom to clear the furnace of ashes; for soft coal a hot-air blast is introduced to render thorough the consumption of the fuel and reduce the smoke emitted. The smoke, after leaving the combustion chamber, requires to travel once or more round the radiator before reaching the chimney. The radiating surface is made as large as possible by the introduction of a series of drums or tubes, and the outer casing, whether of brick or metal, is made double to avoid loss of heat. A water-pan is a usual feature to counteract a tendency to excessive dryness in the heated air. Such a furnace, when efficiently heating a house of the size mentioned during all but the coldest weather, consumes an average of two tons of anthracite coal per month. It requires feeding twice in the twenty-four hours, while a bucketful of water once a day suffices to keep the water-pan supplied. The writer spent many hours in several houses warmed on this principle, and found the heated air entirely pleasant and quite free from the defects usually attributed to stove



heat. The furnace should be set about the centre of the basement, but a little nearer that side of the house on which blow the prevailing winds in winter. The tendency of the wind is to carry the warmed air in its own direction so as unduly to supply the rooms on the lee side of the house to the impoverishment of those on the windward. By setting the furnace as described the nearly horizontal shafts are shortened, and the flow made easier in the direction where it might otherwise be unsatisfactory, and *vice versa*.

Cold-air Supply.—The cold-air supply, as it is called, is brought to the furnace by a duct connected with a screened opening in the outer wall, as high above the ground as possible, and therefore generally placed immediately under the ground-floor joists. As the air has to be introduced under the heater the duct is either carried down the outside wall and thence under the cellar floor in a stone, cement, or tile-lined flue, or along the ceiling in tightly jointed boarding to a point near the stove, where it descends to the "cold-air pit" under the same. It is supplied with a damper [fig. 8], by which, in extreme weather, it can be closed and the air drawn either direct from the cellar, or, better, by a shaft connected with a register in the outer hall. Its area should be equal to almost 80 per cent. of the total areas of the hot-air flues. The outside opening is placed on the windward side of the house, but in very exposed situations it is better to have two, connected with the same shaft, and with dampers so that either can be used alternatively.

Hot-air Flues.—The hot air is carried from the crown of the furnace in circular tin pipes, either doubled or covered with asbestos paper, and called "leaders." These, which should have a rise of at least an inch for each foot of run, are connected with the lower end of the rising flues, called "stacks," by a junction called the "boot." The stacks, which are likewise of tin, are made double for good work, with an air space between the outer and inner casing. These are frequently made in flat sections so as to lie between the studs of the partitions, and are connected with the registers in floor or wall as previously described. A combination of

the hot-air system with that of hot water by direct radiation has recently been frequently employed with excellent effect in houses a little larger than those just mentioned. By a slight change in the construction of the furnace the surplus heat is utilised to obtain a supply of hot water, which is connected by a system of piping, with radiators placed in specially exposed rooms or those that would be difficult to reach with hot-air stacks. An instrument which is coming much into use in connection with the various heating systems is the "Johnson" thermostat. By its means the temperature of a room may be kept automatically at any uniform temperature, within a range of 15 or 20 degrees, according to the taste of the occupant. Its outward appearance in the room is that of a small quadrant with a movable pointer, which can be set to the "normal" point in the centre, or to the left or right to a greater or less degree, according as it is desired to have the temperature cooler or warmer. A small thermometer indicates the present temperature of the room. The concealed mechanism of the regulator within consists of a tiny bar composed of strips of steel and platinum fixed at one end, and bending inwards or outwards at the other according as the greater or less degree of heat acts on the irregular expansion of the two metals. This action either increases, diminishes, or altogether stops the flow of a stream of compressed air continuously supplied by an automatic valve connected with the water main, and the force thus dissipated or generated in turn operates to open or close a valve determining the supply to the radiator, or, in the case of a hot-air furnace, either the furnace damper or one on the shaft conveying the hot air to the room in question. Thus when the temperature falls below the desired point more heat is supplied, and *vice versa*.

PLUMBING AND DRAINAGE.

Probably in no department of practical architecture has greater progress been made in the United States of recent years than in those of plumber work and drainage generally. Not many years since America was behind England in these respects, now she is very much ahead in the race—I speak, of course, from knowledge of the Eastern cities only. This rapid progress is due mainly, if not entirely, to the stringent laws adopted by the various city "Boards of Health," and rigidly enforced. At the same time the universal cellar has something to do with the change, for by it alone is rendered possible the system of open piping. In New York, when warrant to build is sought from the city authorities, besides the usual plans submitted, a separate and complete set of plans and sections showing plumber work and drains, to the scale of a quarter of an inch to the foot, has to be deposited with the Board of Health. On these the nature and positions of every fitting, pipe, and trap are clearly shown. In addition to the published regulations, a draft specification is issued by the Board for the guidance of architects. In one respect only do the regulations of the New York Board seem behind those generally adopted in this country: separate soil and waste pipes, while authorised, are not required, and in consequence are rarely supplied. On the other hand, it is insisted that rain-water "leaders" must never be used as soil, waste, or ventilation pipes. The bearing of one or two clauses may be noted as indicative of the general style of the work required. The house drains inside the walls *must* be extra heavy cast-iron, and also outside to the connection with the sewer, except by special permission, and in suitable soil. House drains are *prohibited from being laid underground* within the walls, except by special permission. Drain, waste, soil, and ventilation pipes must be exposed to view where practicable. All traps must be protected from syphonage by ventilation pipes, and these, where the building is more than four storeys in height, must be at least 3 inches in diameter. A vigorous crusade is at present being directed against this last clause by some of the leading sanitary authorities, and a strong case is made out in favour of one or other of the anti-

vention traps as more effective than the vent pipe, but so far the Board of Health remains firm. From the summary of the first-mentioned clauses, two main characteristics of the modern American plumbing and drainage systems may be gathered, namely, the openness of everything in this class of work, and the substitution—along with cast-iron for fire-clay drains—of wrought-iron and brass for lead in the supply and smaller waste pipes. Openness combined with exposure to the weather is, of course, not possible with such low temperatures in winter, where even the inside surface of an outer wall is found to be insufficiently sheltered from the frost. The vertical drains, therefore, waste, soil, and ventilation, are gathered together as far as possible within a pipe chamber or shaft, well inside the house, and so arranged as to be altogether open or readily accessible at all parts. The horizontal or “lying” drains are in like manner suspended in the open. The basement already provided for the heating apparatus renders this possible, and in it the pipes, with branches, traps, and fittings generally, all of cast-iron, are either suspended from the ceiling by iron straps, or supported along the wall by brackets of similar material. Where change of

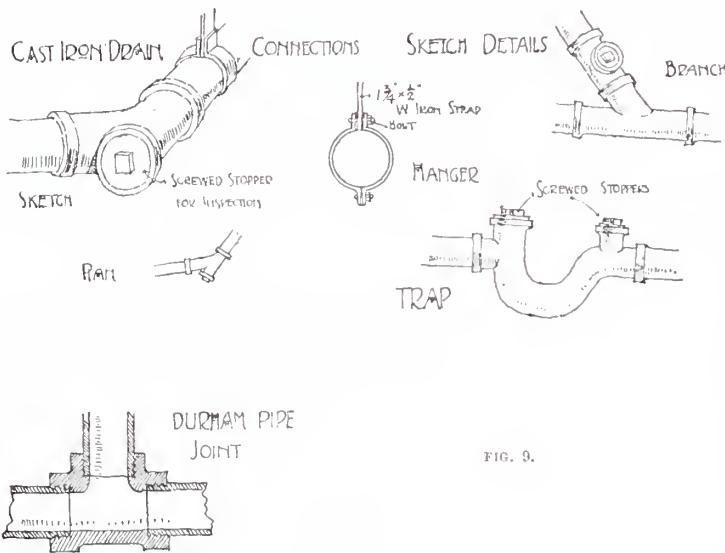


FIG. 9.

direction occurs, instead of a simple bend a branch is used, the unoccupied arm being closed with a screw stopper with a nut cast on the head, so that a powerful spanner is alone required to provide ready access for inspection [fig. 9]. Similar inspection openings are provided at both ends of the traps, and at all branch connections. The threads of these screws are made tapering, securing absolute tightness, and the joint is made up with red lead and oil. The ordinary spigot and faucet joints are of course staved with lead, and in order to provide against

such scamped work as a mere crust of this material on a base of sawdust or oakum, the law requires that one pound of lead be used to every inch in diameter of the pipe to be jointed. For all pipes of smaller section than about three inches in what would in this country be recognised more particularly as plumber's work, the lead pipe with its wiped joints has almost universally given way to brass and wrought-iron. These are left perfectly open, and may generally be seen in a group running from floor to ceiling in one corner of the lavatory or bath-room, the brass pipes, as employed in all superior work, being nickel-plated, the iron either bronzed or painted. Lead piping is only employed for short connections where the distance and direction are uncertain until the work is being executed, and is connected to the main system by brass ferrules and wiped joints. As for the baths, lavatory basins, and water-closets, I was unable to detect much difference between those employed and these put on the market by our leading makers, but the difference in the system of connection is striking, and altogether in favour of the American method.

Sewage disposal.—A solution of the vexed question of sewage disposal for isolated houses and small communities, known in the States as the “Waring” system, was first brought under my notice at Baltimore. It is, as afterwards discovered, employed not only in that neighbour-

hood, but very generally throughout the Eastern States at least, and with entirely satisfactory results. This is a system of intermittent surface (or nearly surface) filtration, which the Mr. Waring whose name it bears lays no claim to have discovered. It is the same, with some modifications and amendments, as that first employed by Mr. Moule, and afterwards in an improved form by Mr. Rogers Field, in this country. But while it has made little progress here so far as I am aware, it is, as stated, now largely made use of in America, where possibly the drier climate and soil may have something to do with its successful development. Its main features are: a settling and a discharging tank, capable of holding the entire sewage discharge of the house or group of houses for a period of from twelve to twenty-four hours; a system for automatic discharge at such periods of the sewage gathered; and irrigation drains or channels arranged in two or more groups, for distributing the outflow in alternation over or immediately under the surface of the ground (fig. 10). A later improvement consists of the omission of the settling chamber, or rather its combination in one with the discharging tank in an elongated and open trough, protected from falling leaves, &c., by a wire-wove covering or lid, and with a receiver or cage fixed at the inlet. This cage is made of galvanised iron-wire cloth with 1-inch meshes, and is provided in duplicate, so that after each discharge the one first used may have the more solid matter which it has retained, with the paper, &c., shaken out and dug into the ground, and then be thoroughly cleansed and aired while the other is in use. The syphon should be altogether outside the tank, to prevent its fouling, but in practice it is frequently placed within the discharging chamber in the manner of that in an ordinary cistern. The connection between the house and the tanks, and that between these and the distributing drains, are made by jointed pipes in the ordinary manner, but with a very flat fall, in order to prevent too great disturbance in the first instance, and a too heavy local discharge in the other. The alternate distribution of the outfall is effected by gates—cement-formed sinkings or pots—with iron sluices, one of which may be opened while the others are closed. The distribution itself is effected by one of three methods: (a) 2-inch tile drains, open jointed, the upper half of the joints protected by loosely laid-on caps, and laid in a flat tile channel, also open jointed (these joints alternating with those of the pipe), and the whole distributed in parallel lines from 3 to 6 feet apart, 10 inches under the surface of the ground; (b) for heavy soil, 4-inch horseshoe or inverted tiles laid in trenches filled with stone or gravel, and with a thorough system of subsoil drainage underneath; (c) open filtration over the surface of the ground by irrigation channels. The fall in all cases is very slight, not more than 2 inches in 100 feet. The first is the system universally employed in the instances described about Baltimore. The particulars regarding one may be taken as representing all: a house of ten apartments and offices, occupied by a family of six to nine persons with servants; soil, a sandy loam; tanks constructed to hold 600 gallons, and discharging about once in twenty-four hours; area of ground used for filtration, and in the immediate neighbourhood of the house, 60 feet by 80 feet; total length of 2-inch piping required, distributed in three sections, about 1,000 feet. It may be

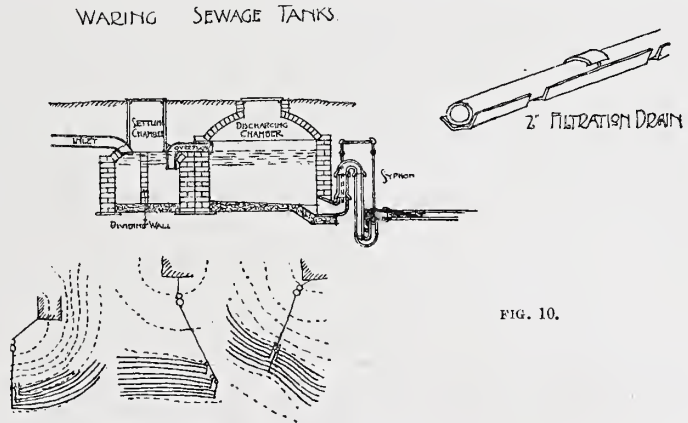


FIG. 10.

FIG. 10.

noted that, though the irrigation drains require to be nearly level, this does not necessarily involve a flat piece of ground, as they may be connected with the outfall from the tanks at right angles if necessary, and carried round parallel to the contours of a slope if such is the nature of the land to be treated. An example of a larger installation of the system was visited at Rowland Park, an outlying suburb of Baltimore, consisting of about 120 detached villas and cottages, with about 1,000 inhabitants. The natural slope of the ground, which has a considerable fall to one corner, is taken advantage of to carry the whole of the sewage to the filtration bed situated (within a hundred yards of the nearest houses) on the lowest level, and immediately adjacent to a brook into which the effluent passes. The distribution is entirely on the surface. The sewage, sent alternately in different directions by a "gate," such as already described, passes over a bed laid with bricks in cement, through wire screens, and thence by a series of very flat channels, formed on the surface of the ground, over the patch of meadow land, which is all that is required for the purpose. The whole area of this was not more than two acres, divided into five sections; it was covered, when visited, with fresh-growing grass, a pleasant contrast to the somewhat dried-up surroundings, and though a general discharge of sewage had taken place a few hours before, there was not a trace of unpleasant odour in the air.

What practical lessons may be drawn from the practice of our professional brethren on the further side of the Atlantic, how far their special methods may be found to apply to our work at home, are questions which, at the end of an already too extended paper, must be left to the judgment of those members of the Royal Institute who have followed it. I may not conclude without expressing my thanks to, and recording my respect for the memory of the deceased founder of this Bursary, of gratefully acknowledging the honour which the Council of the R.I.B.A. bestowed on me in making me its recipient for the year 1896; and finally, while expressing my regret that limits of space have prevented my making use of but a small portion of the material placed at my disposal, of recording my very cordial appreciation of the unstinted assistance and unnumbered personal kindnesses received from the architects of the United States of America whom I had the pleasure of meeting during my tour.

DISCUSSION OF MR. PATERSON'S PAPER.

Mr. H. L. FLORENCE, *Vice-President*, in the Chair.

PROFESSOR KERR [*F.*] said Mr. Paterson's Paper contained a great mass of detail with reference to the internal contrivances of American houses, which it was impossible to discuss at so late an hour. He hinted that it might be advisable to give members of the profession, expressly interested in such matters, an opportunity of indulging in an exhaustive discussion of them on another evening, as had been done before on many occasions; but, as he had been asked to speak, he would make a few remarks upon the subject of plan, with which he was somewhat identified. He had visited America—unfortunately fifty years ago; but he had always kept up his connection with that country, and was pretty well informed as to the details and facts given by the lecturer. There were several national characteristics and peculiarities which affected the plan of American houses. The country possessed a great many more climates than one; and that would remind those who had studied Richard-

son's designs, which were very peculiar, of the suggestion that, without originating novelty, Richardson mainly adopted the characteristics of the South and applied them to the Eastern States. So it was with reference to a good many of the plans given in the Paper. With regard to the difference of class relations referred to by the lecturer, it was, of course, well understood that the relation between master and servant, as it existed in Europe, did not exist in America at all. The servant, in his own opinion, was quite as good as his master, and occasionally would tell him that he was a good deal better; there was thus an important difference of social discipline which must not be left out of account. Therefore, when the lecturer spoke of his (the Professor's) dictum, that there ought to be a separation between the two families living in the house in England, namely, the family properly so called, and what he might call the family of servants in a good house, it was not his dictum at

all, but was the universal doctrine of gentlemen's houses, and was carried out by the late Mr. Burn, who was historically their Prime Minister of planning, to the utmost extent. Another peculiar characteristic about the Americans not easily explained was their fondness for hotel life. It was not that they preferred to live at an hotel, or that they went out of the way to live at an hotel, but the manner in which they occupied their houses, as the plans exhibited showed, was very much like hotel life. Take the plans of the two houses in Madison Avenue [p. 313]. The large house was evidently intended for a gentleman of very considerable wealth, and determined to exercise his right to have a very considerable display. It was a corner house, and the whole length of the house fronting upon the return street was occupied by the dining room at one end; the reception room next; what was called the *foyer* (*i.e.* an open stair landing) next; then another reception room, and the drawing-room in front; a magnificent staircase being at the rear in the middle. The whole of that series of rooms were constituted a single suite by means of very wide folding doors. That arrangement would not do in England. The only similar case that had occurred in his own experience, without mentioning names, was that of a gentleman who would be known as the editor of the century. "I want," he said, "my house designed in a very peculiar way. It must be perfectly comfortable for a small family according to English notions, and at the same time it must be capable of being thrown all open upon occasion into one suite for receptions. People are good enough to invite me out a great deal, and that is the only way I can return the compliment." But the gentleman in Madison Avenue had sacrificed the comfort of his house entirely, and he had not done it after the French manner, but after the American manner, which they in London could not expect to derive any suggestion from. In the house in Madison Avenue there was furthermore the same suite on the ground floor, a magnificent staircase, a large hall looking out on to the street, a library, a billiard-room, with a little ante-room as a card-room, the whole forming a second grand suite. So that so far he had two reception suites in the house and little else besides, except a bowling alley below connected with the billiard-room. With regard to the small house alongside it, that the lecturer had spoken of with great approval, he (the speaker) called it an exceedingly badly planned house—most uncomfortable according to English notions. The sliding door was another peculiar characteristic of the American house which would not answer in England, and which was again suggestive of hotel life. The American liked to live in his own house as if he were in an hotel. Without going into historical matters, it would be seen clearly that this was of the Latin style of living, introduced by the Americans from the south of their own territory. The Latins founded their house plan upon the

open court without a roof. The Goths, on the other hand, founded their plan always upon the confined and enclosed hall, the house-place, as they called it. The Americans, for climatic reasons, accepted the Gothic principle only to a certain extent, and so it was that this peculiarity of plan arose. Another peculiarity, the bedroom closet, would not do in England in any decent house at all; it would get stuffy and altogether nasty from the things stowed away there. And this was a *sine quâ non* of an American house! Then the fold-up bedstead!!—

"Contrived a double debt to pay—

A bed by night, a chest of drawers by day!"

Could anyone seriously contend that that would be a desirable thing in London? It was the hotel life again. The occupant of the bedroom had no privacy in any of the other rooms, such as they had in English houses. The American, if he wanted privacy, had to go to his bedroom, shut the door, fold up the bed, and enjoy himself as in a snuggery. There was one room, in a plan shown, marked with the word "den." If by "den" was meant an informal retreat for the gentleman when he did not want to be disturbed at all, then it was altogether too small and insignificant. One plan well worth studying was fig. 6, p. 318, Shamrock Cliff, Newport, by Mr. Peabody (whom some of them knew very well a good many years ago) and his partner. Judging by other plans the question of aspect seemed to be considered too little. However, this was a very curious house with two slanting wings, well worth looking at. One curious feature in it was that at each end of the garden front there was what was called a porch; it was really an open shed of an ornamental character, in which the inmates could accommodate themselves in the sunshine or in the pleasant evening, upon the verandah principle, which the lecturer so well described, and from which something might be learned for English country houses. As regards peculiar houses, most gentlemen who had made a study of plan would agree with him that a worse plan could scarcely have been devised than that figured on p. 314, Davidson House, Washington. Great allowances must be made for the ridiculously absurd shape of the ground; but he could not agree with the lecturer in thinking that the awkwardness of the site was turned to advantage. He should say that the awkwardness of the site was emphasised by the detail of arrangement; the plan, however, was not easy to understand, and one could not tell exactly what the arrangement was. With regard to the hall, Americans thought that not sufficient was made of it in England. There were houses, however, in this country where the hall was all that it should be, and more particularly had it been developed lately, in towns, very creditably, as by Mr. Norman Shaw and others. The hall was a rendezvous, and when large enough to be a lounge, it added immensely to the comfort and convenience of the house. But the Americans

made the hall and the house a sort of string of compartments joined by folding doors—and they kept the doors open—which of course was perfectly at variance with all English notions of comfort and convenience. With regard to the servants, where these were very few and very independent, there might be some considerable difference of arrangement necessary, as compared with the English system; but this, he maintained, made it all the more necessary for separating the two divisions of the family. He always said, and he believed it was Mr. Burn's principle, that the servants were entitled to their own privacy just as much as the family were. He would conclude by proposing a vote of thanks to Mr. Paterson for his Paper, which was most interesting, most instructive, and representative of a very great deal of painstaking on his part.

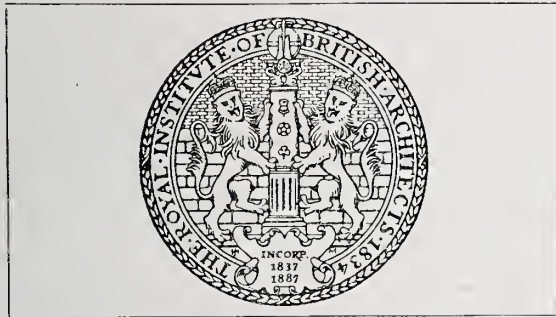
Mr. H. HEATHCOTE STATHAM [F.] seconded the vote of thanks very heartily. When printed with some of the diagrams the Paper would prove most useful to them and worthy of careful study. With regard to the typical plan of the American house, a great deal of what Professor Kerr had said as to its unsuitability to the English climate was perfectly true, and he entirely agreed with it; but he could not help thinking that a study of the American plans might help English architects to get a little out of the ordinary groove of house planning, whose usual drift was a number of shut-up rooms. It was a question whether, if they had more of a scientific system of heating houses, a greater appearance of spaciousness and dignity might not be given to them. Something like the American house idea had been actually carried out not further off than the borders of Wimbledon Common by a great sea-painter. The owner had shown him one day how he had planned it on the plan of a cathedral, observing, "It is a comparatively small house, but I like to have spaciousness." Consequently he had planned it as a Latin cross, of which the hall was the nave, the drawing-room took the place of the chancel; there was a transept on one side, which, he believed, the owner made his study, and a transept on the other side that served as the dining-room. The whole of the house was heated by hot-water pipes carried all round the rooms, and each bay could be shut off by thick curtains whenever desired. He did not know whether he should care to live in that house himself, but it was at any rate an interesting variety, and it had the advantage of giving an appearance of spaciousness to a comparatively small house. In the summer, when one did not require to separate the rooms, they could all be kept open, so that the occupants could roam about them, instead of being always shut up in one room with a door. That was a suggestion worth considering, and he believed it was arrived at by the owner quite independently of

any study of American plans. In addition to the system of having the house more open, there was also much suggestiveness and originality in American plans in regard to the shape of the rooms. They did not confine themselves to rectangular rooms as we do in England; but they introduced oval and circular rooms, which, though in some points inconvenient, still have the advantage of variety, and give opportunity for very pretty architectural effect internally.—Mr. Statham, in concluding his remarks, referred to the word "stoop" used by the lecturer; he had seen the expression in an article on house planning in *Scribner* or *The Century*, and was under the impression that it referred not to the stairs, but to the large arch under the stairs, from which it seemed to have a more natural derivation.—Professor Kerr explained that "stoop" was a Dutch term, and meant the steps at the entrance.

Mr. A. N. PATERSON, in reply, said that with regard to one or two matters mentioned by Professor Kerr, he did not wish to be taken as an apologist for the American type of house plan. The plans were not brought forward with the idea of putting before English architects something that was superior to what they were accustomed to in England; by no means. He had made the matter a subject of study, as it was his duty to do as Godwin Bursar, and he had brought before them the results of his study, leaving them to each architect to take or leave as he felt inclined. At the same time, the matter of openness, as he had tried to show, was essentially largely derived from their system of heating; the house being equably warmed, there was no further necessity for doors, except for privacy. The American liked a certain amount of publicity, as Professor Kerr had said; and in so far his idea of openness and spaciousness would be disagreeable to English people. At the same time, as Mr. Statham had said, there was some advantage in treating a small house in that way. He did not think it possible, without some application of a general system of heating, because it would make the house windy and draughty to a disagreeable extent; but, with a good plan of heating, something could be done in making a small house more picturesque and spacious. Having lived in houses planned as he had described, he could say that it certainly had a curious, but at the same time a pleasant, effect to sit in the dining-room, and, with the doors thrown open, be able to look right through into the drawing-room and possibly into the conservatory beyond. With regard to the "den" in the house at Brookline, Boston [p. 317], referred to by Professor Kerr, the "den" simply meant a study. The house, which was a banker's, had large rooms all *en suite*, as was the habit; but in one corner the owner had his little private room or study to which he retired, and which had the ordinary closed door for privacy.

With regard to the bedroom closet, his own impression, after seeing it in America, was that, if properly attended to, as he had seen it in the best houses, with, in many cases, a window, and with the linen, portmanteaus, and other things kept in their proper places, it was a distinctly desirable addition to the house, and one that might be well introduced in English houses. The folding-bed was, of course, an anomaly, as any American would properly regard it; it was only to be found in the smaller and poorer class of house. He should like to explain that, in using the term "Professor

Kerr's dictum," his meaning was that Professor Kerr had put into gospel what they knew to be the exact state of affairs; by laying it down in his standard book on house planning, it had become a word in English house planning, and recognised as such. And, curiously enough, Professor Kerr had referred with respect to the architect whose book on this matter used that expression—namely, Mr. Peabody, of Boston. He was sorry Professor Kerr had fallen foul of the Washington example. He thought that, with a little more study, it would be found to have its good points.



9, CONDUIT STREET, LONDON, W., 23rd April 1898.

CHRONICLE.

Mr. Paterson's Paper.

The illustrations to Mr. Paterson's Paper comprised a numerous collection of plans and working drawings representative of the various types of buildings treated, and presented to the author by architect friends in the United States for the purposes of the Paper. They included plans by Messrs. Peabody & Stearns, Mr. Alex. Mackintosh, Messrs. Adams & Warren, Mr. H. J. Hardenbergh, Messrs. Kimball & Thompson, Messrs. Hartwell, Richardson & Driver, Messrs. Trowbridge, Colt & Livingstone, Messrs. Hawk & Wetherbee, Messrs. Rossiter & Wright, Messrs. Wyatt & Nölting, &c. Also a series of diagrams illustrating the sections on Heating and Drainage, together with reproductions to smaller scale of several of the plans prepared for the Report submitted by Mr. Paterson to the Council last year in compliance with the conditions of the Godwin Bursary.

In some preliminary remarks before reading his Paper Mr. Paterson explained that, in order to keep the Paper within reasonable limits for JOURNAL purposes, the original Report had been considerably cut down, and the illustrations to be given in the JOURNAL were fewer than he could have wished. But the Report itself, very fully illustrated, could be consulted in the Library, along with a number of pamphlets, by American architects, bearing more or less upon the subject dealt with.

Among pamphlets laid on the table, and since

presented to the Library by Mr. Paterson, were "The Purification of Sewage by Forced Aération," and "Sewage Disposal at Wayne, Pa.," with plans and sections, by George E. Waring, jun., M.Inst. C.E.; and "The New York Tenement-House Evil and its Cure," by Ernest Flagg, architect.

Exhibition of Industrial Art at Bordighera.

Mr. John Hebb [F.] writes that an exhibition of Industrial Art has been recently opened at Bordighera, mainly by the exertions of Mr. Chas. Bicknell, a resident English artist. It appears from the local paper, *L'Arpa Grafica*, that the English contingent is well represented, many of the exhibitors being ladies, including Frau von Tigerström, Mrs. Riccard, Mrs. Stephenson, Miss Gladstone, Mrs. MacConnel, and others. Speaking of an exhibit by the Brothers Semeria, the reviewer praises "a cabinet in male oak from a design published about thirty years ago by the English architect, Signor C. L. Eastlake. The style is Gothic as it was understood at that period, and although no longer fashionable at the present time, it has the distinction which is always found in the work of this accomplished artist."

REVIEWS. LXXI.

(191)

ARCHÆOLOGICAL SURVEY OF INDIA.

Lists of Antiquarian Remains in the Central Provinces and Berâr. Compiled by Henry Cousens, M.R.A.S., Superintendent Archaeological Survey, Bombay. 1897.

This publication, issued by the Indian Government, is little more than a compiled list, as the title implies, of archæological remains in the localities named. A list, previously published, of remains in Bengal, was noticed in this JOURNAL about two years ago,* and was there termed an "Archæological Domesday Book." The same expressive title might be given to the present work, as it is a similar contribution towards the

* JOURNAL R.I.B.A., Vol. III. 3rd series, 1896, p. 537.

enumeration of ancient remains still existing in India. When the railway engineer, the pipal tree, and other destructive powers have accomplished their work—and even long before that time arrives—such compilations will become invaluable to the historian, as well as to the archaeologist. These lists do not seem to be so methodically arranged as the Bengal lists; still they convey a great amount of information about the temples, tanks, palaces, and old structures of every kind in Central India. In many cases there are descriptions, more or less detailed, of the remains. It may be mentioned that further information will be found regarding many of the places mentioned in Cunningham's *Archæological Reports*, in vols. vii., ix., xiii., and xvii.

The astonishing thing indicated in this work is the immense quantity of archaeological remains still existing in Central India. There are not only Hindu temples—some of great antiquity—palaces, forts, &c., but there are also stone circles, standing stones, "prehistoric stone sarcophagi," and cromlechs. At Takalghat, ten miles south-west of Nagpur, there are mounds and "rough stone circles" covering five and a half acres. Walls formed of large stones without mortar are reported as frequent.

From these lists we can realise how the Muhammadan conquerors must have destroyed temples and other structures in the Gangetic valley. In a late notice of the work by Dr. Burgess, on the *Muhammadan Architecture of Ahmadabad*, it was shown how the Musalmans had either converted the Jaina and Hindu temples into Musjids, or carried off the material to serve their own purposes. A portion, at least, of the Central Provinces appears to have remained, like an island in the tide of conquest in India, and thus escaped the iconoclastic flow of destructiveness. If the Muhammadans came to that region, their stay was either too short or their numbers were not sufficient to enable them to ride rough-shod over the mass of the people. There is still more to be said in relation to this mode of accounting for the remains. Even the Aryans, in their early conquest of India, do not seem to have quite absorbed this part of the country. That is shown by the existence of primitive tribes in it. Conspicuous amongst these are the Gonds, who have even yet a Raja of their own—or they had one in 1861, for I saw him at a durbar held that year by Lord Canning in Jabalpur. Mr. Cousens mentions one detail that becomes a further evidence. At Dantivádá, in the Biláspur district, Meria sacrifices were practised. These were human sacrifices, and were continued in Orissa, and in at least this one spot in the Central States, till the present century, when the Government managed to have them suppressed. A custom of this kind must have come down from a primitive period, and it shows how isolated Orissa and the Central States must have been to escape the more advanced

influences of civilisation. All this combines to tell the same tale, and to explain how there are so many architectural remains in this central spot.

It is hard to say how many of the difficult problems connected with origin in Indian architecture might be solved if anyone with the necessary knowledge would devote a cold season or two in exploring this part of India. It is to be hoped that this may be done.

In a list like this, compiled from various sources, perfect accuracy is not to be expected, and criticism is scarcely called for. To call attention to an overlook is perhaps the best form of comment. In the notice given of Ránipur Jhária, with its group of numerous temples, mention is made of an enclosure with a temple of Bhairava, where there are sixty-one human figures. No one reading this would be aware that this temple belongs to a class which is so very rare in India that there are only two or three known now to be in existence. It is a circular hypæthral temple, with sixty-four cells in the circle, in each of which there is a figure of one of the sixty-four female demons or goblins, known as the "Chaonsat Yogini." The best known example of this form of temple is one at Bhera Ghat, near Jabalpur. There is another at Khajuráha, in Central India; it is rectangular, but has the sixty-four cells. In vol. xiii. of Cunningham's *Reports* an account of the one at Ránipur Jhária, with a plan by Mr. Beglar, will be found. Mr. Beglar, it may be mentioned, calls the place "Ranipur Jural."

Before closing this notice attention may be called to a rather big chronological error. At p. 59, a temple at Biramdeva is referred to "as one of the most ancient in the district; it is said to date from A.D. 103 (?)." A Saivic temple of that date would certainly be interesting. It will be seen that Mr. Cousens adds a note of interrogation to his statement, as if he were doubtful. The answer to that note of interrogation already exists. Cunningham visited the place in 1881–82—he calls it "Boram-deo"—where he saw the inscription, and its correct reading is A.D. 1551.* But, according to Cunningham, the temple is older than the inscription. He says, "It is a very fine old building, and I am glad I was induced to visit it."

WM. SIMPSON.

(192)

COMPENSATION.

The Law and Practice of Compensation, with the text of chief Statutes relating thereto, and Forms and Precedents. By H. C. Richards, F.S.A., M.P., and John P. H. Soper, B.A., LL.B., Barristers-at-Law. 80. Lond. 1898. [Frank P. Wilson, "Estates Gazette," 6 St. Bride Street, E.C.; Sweet & Maxwell, 3 Chancery Lane, W.C.]

The authors of this work inform us in the preface that it is "offered for the assistance of not only the legal profession, but of surveyors,

* *Archæological Reports*, vol. xvii. p. 34.

accountants, and other experts engaged in compensation work." I venture to think that "surveyors, accountants, and other experts engaged in compensation work" are more likely to avail themselves of the assistance it offers than are the "legal profession." The legal profession are already supplied with many most excellent and exhaustive works on the subject of compensation. It is only necessary to mention such treatises as those by Mr. Cripps and Messrs. Balfour Browne and Allen to make it clear that lawyers who practise in this particular line of business are in no want of any assistance that literary or legal ability can supply. Though the authors of this little work promise them that there is something in it which is not in the standard works, it would be safe to prophesy that compensation lawyers will think that if this something is true it will hardly be new, and if it is new it is hardly likely to be true.

At the same time, in its own sphere the work should prove a useful contribution to legal literature. Surveyors and valuers who want a clear and simple statement of the main points of the law of compensation will find that here, better, perhaps, than anywhere else. And the statement of the law, as far as I have been able to test it, is not merely clear and simple, but correct. The surveyor, valuer, or even arbitrator, who masters the 265 pages devoted to the exposition of the law of compensation, will find that he has enough legal knowledge on that subject to enable him to do his work intelligently and well.

The book consists of 618 pages. Of these, as has been said, 265 are taken up by the exposition of the law of compensation. The remainder are devoted to giving the text of some statutes bearing on the subject matter, and to reports of some cases on compensation taken from the *Estates Gazette*, and an elaborate index to all such cases which have appeared in that journal, at the office of which the work is published. Among the statutes given is, of course, the Lands Clauses Consolidation Act 1845; but why the three Acts amending that statute, and to be read with it, are omitted it is difficult to say, especially as some of the alterations made by the amending Acts are not referred to in the text of the principal Act as here given. Thus, section 10 of the principal Act is printed as originally enacted, though it has been partly repealed by section 1 and greatly extended by section 2 of the Lands Clauses Consolidation Act 1860. As to the cases reported, and the index (which between them run to nearly as much matter as the whole of the authors' exposition of the law), the best that can be said for them is that they may be of some service to surveyors or valuers in preparing their cases for trial; to the lawyer they are absolutely useless.

J. ANDREW STRAHAN [*H.A.*].
Barrister-at-Law.

NOTES, QUERIES, AND REPLIES.

Artistic Copyright—Patents for Plans.

From Messrs. FLOCKTON, GIBBS & FLOCKTON (Sheffield)—

In the discussion of the Paper by M. Harmand on "Artistic Copyright," questions were asked the lecturer as to "whether he was aware that one firm of architects in the country did go so far as to patent one of their designs, and whether he had made any inquiries as to their care in taking out that patent, as to whether it was satisfactory to them, or whether it had any effect in any way upon other architects."

We believe we are the only firm in the country who have patented a design, and that probably therefore the questions refer to us; and the Institute having so lately discussed the subject, it may interest readers to hear our replies, viz.: We protected our design as a "plan," not as an "artistic design," and that it has not yet been directly infringed is due either to the care with which the patent was prepared, or to the worthlessness of the subject of it; that the latter is not the case we infer from the fact that nearly the whole of the municipal buildings since designed have partially adopted the separation of departments, that the separation of departments has been wholly adopted in a polytechnic institution, and the building in wings with a central hall and staircase has been adopted in a public hospital. In further reply, the patent has not been satisfactory to us, inasmuch as it has not benefited us, and has, we believe, deterred other architects from adopting the plan in its entirety.

Remembering that at the time of taking out the patent we were recommended by the Council of the Institute not to do so, but to follow the honourable tradition of the medical profession, we are pleased to find that the kindred subject of "Artistic Copyright" has been thought of sufficient importance to be the subject of a Paper read before the Institute.

Winchester Cathedral.

From Mr. FRANCIS BOND—

The reviewer of Mr. Sergeant's book on Winchester Cathedral credits Bishop Edington, or Edington, of Winchester, with originating the Perpendicular style. Is not the credit due rather to the masons of Gloucester and Tewkesbury? The south transept of Gloucester, parts of which are fully developed Perpendicular, was completed before 1337. The choir, which is completely Perpendicular, seems to have been vaulted and glazed before 1351. Bishop Edington laid the foundation of Edington Church in Wiltshire in 1352, in which there is still a strong admixture of Curvilinear forms. The western bays and west front of Winchester Cathedral, which are much

more advanced in type, would appear to be later still; indeed, not much before Edington's death, in 1366.

The date assigned to the rebuilding of Winchester Tower also seems improbable (1200). The design of the internal tower-arcade is of the very greatest beauty, but can hardly be later than the middle of the twelfth century.

The late William Burges, A.R.A.

From JOHN HEBB [*F.*]—

An interviewer, who had buttonholed Mr. Val C. Prinsep, R.A., at Eastbourne, and who has related the result in the pages of the *Strand Magazine*, confounds Mr. J. B. Burgess, R.A., with Mr. William Burges, A.R.A., the architect, two persons who had nothing in common, with the exception of the similarity of their names. Recalling his life at Oxford, the interviewer makes Mr. Prinsep say: "Rossetti himself, though, had a way of making quaint little rhymes at the expense of his friends. He criticised as puerile the decorations by Mr. Burgess, R.A., and would burst forth as follows:—

There is a poor fellow named Burgess,
Who from childhood never emerges;
Unless you were told he's disgracefully old,
You might offer bulls'-eyes to Burgess."

The lines, which are incorrectly given, were written of William Burges, A.R.A., whose juvenile manner was a constant source of pleasantry among his friends. The lines should run:—

There was a young fellow named Burges,
Who from babyhood barely emerges;
If you had not been told
He's disgracefully old,
You'd perhaps offer bulls'-eyes to Burges.

This is a very different matter from the interviewer's version, which halts pitifully, and is quite unworthy of Rossetti, whose lightest productions were finished with the greatest care and precision.

Cement Pipes.

A novel form of pipe for water or drainage purposes, recently invented by a Frenchman, is noteworthy. A trench is dug in the ground where the pipe is required to be laid, and is partly filled with good cement. Upon this soft substratum is laid a rubber tube covered with canvas, and tightly inflated with air. The trench is now filled up with cement, so that the tube is completely covered with an inch or more of the plastic material. As soon as the cement sets, the air is let out of the tube, and it is easily extracted from the pipe, of which it for a time formed the core. The tube can then be again inflated to serve for a fresh section of the pipe, which can be as much as six inches in diameter if required. It is said that a cement pipe of this thickness has been successfully laid by the new method at a cost of about one shilling per yard.

THE HISTORIC DEVELOPMENT OF ARCHITECTURE.

Abstracts of Lectures delivered this year at the Glasgow School of Art.

By W. J. ANDERSON [*A.*].

III.* (LECTURES XIII.—XV.)

IN introducing the subject of his next lecture, Mr. Anderson stated that the period which is marked by the Early Pointed style is one of the most formative in the history of the French and English people, closely united at the time politically. Circumstances which should be kept in view are—the preaching of the Crusades and the pilgrimages to the Holy Land; the contact with Arabian culture; the establishment of freemasonry or a secular school of architects, especially in France; the development of English boroughs and of towns round abbeys and castles; the blending of the English and Norman settlers; the defeat of the English, Saxons, and Flemings in France, and the consolidation of that country, bringing about the cathedral building epoch. Gothic construction was defined as beginning in the construction of an independent frame of arches, a skeleton construction governing the form and plane of the vaulted surfaces, which are stretched between them like webs. This structural principle is revealed first in France, in which country also are its greatest achievements. But it is a different thing to admit that France was first in the field, and to contend, as do some recent writers, that there is no English Gothic architecture. In French architecture each vertical moulding or shaft has its apparent work to do in the way of supporting an arch order or vaulting rib; and on these grounds its constructive supremacy is founded, it being overlooked that these shafts do not do the work at all, but are, at the most, so much functional decoration. In this, as in other matters, the French no doubt prove themselves more logical, but frequently carry logic to a *reductio ad absurdum*, as at Beauvais and Bourges. The Gothic construction, whether consistently carried out or not, was opposed to sound statical principle, and in its practice has covered the land with ruins, to which the system of covering the stone vaults with perishable roofs has largely contributed; those which remain being preserved, at enormous cost, only by frequent restoration, and the exercise of considerable engineering skill. The changes made during the Early English period (1189–1272) upon the Anglo-Norman cathedral plan were noticed—the development of the choir, the substitution of a rectangular presbytery for the Norman apse, the appearance of the eastern transepts and the screen façade, suggesting a huge iconostasis. The development of pier arcades, windows, doorways, mouldings, and ornament was sketched. The Scottish examples of the style (1210–1350) were considered, and the conclusion

* For sections I. and II. see pages 133 and 300.

arrived at that, down to the beginning of the fourteenth century, they closely followed the English development. As the Norman wave spent itself in Scotland, it happens that the Scottish buildings are largely of the transitional type, retaining the square abacus and arch order; and this partly accounts for the French appearance which has misled many observers, but which they do not derive from France directly. In conclusion, by a double lantern arrangement, the French and English cathedrals were contrasted in their plans, exteriors and interiors, *e.g.*, the exterior of Salisbury with Beauvais, the interiors of Exeter with Amiens, Lincoln with Chartres, and the square east end of Lincoln with the chevet of Le Mans. The object was to show the beauty or artistic significance of both, as well as the futility of the theory which, in a recent translation from the French, highly recommended for American use, traces each of the cathedrals of England to a French model.

The fourteenth lecture was entitled "The Middle English Style." It was said that perhaps it was more than a coincidence that the stages into which philologists had agreed to mark off the English language should correspond so closely with the three periods of Gothic architecture. This had suggested the terminology of this and the succeeding lecture; for the "middle English" of Chaucer and Wycliffe had a certain relation to the Decorated period (1272-1377), and the period might with more reason be looked upon as a transition to the "completed English" perpendicular style than as the culminating period of English art. The typical abbey church, with its conventual buildings, was described by the aid of the ancient St. Gall plan, and a plan of the abbey grounds at St. Andrews. Just as it was possible to divide the Gothic style into three periods, so might the middle English style be divided into three phases—geometric, flowing, and flamboyant, corresponding with the reigns of the three Edwards, from whom it derived the name of Edwardian. The west front of Lichfield, the crosses of Queen Eleanor, the choir and transepts of Exeter, the Lady Chapel of Ely, the nave of Exeter, Selby Abbey, the east end of Carlisle Cathedral, were in this order illustrated, as exhibiting the development of the work of the period; and, by details and diagrams, the changes effected in windows and doorways, arcades and vaults, roofs and towers, mouldings and ornament. The Decorated style was described as greater by what it designed than by what it accomplished. Because of the "Black Death" and the wars with France it was doubly unfortunate. In Scotland the wars of succession and the subsequent alienation from English connections prevented much being accomplished; but the nave, the transept, and part of the cloisters at Melrose, and the nave of Glasgow Cathedral, were instanced as examples of the period (1350-1450).

The following lecture, delivered on the 28th

February, was entitled "The Completed English Style." The view was taken that the work of the Perpendicular period (1377-1547) was the distinctively English interpretation of the Gothic style; and that instead of being the decadence, it contained within it the culminating works of the English style. In its best examples, the royal chapels, the spirit of the French Gothic was embodied to better purpose than in the earlier phases. In St. George's, Windsor, and King's College, Cambridge, the Gothic ideal was for the first time expressed in distinctively English terms, and up to this consummation all previous steps had been leading. Progress had been consistently in the direction of richer surface decoration—in tracery, spread over vault and buttress and wall; while, on the other hand, simplicity and ease of construction were desired, and may have suggested the use of intermediate ribs in vaults as much as decorative feeling. Constructive simplicity is certainly sought in the perpendicular tracery of the windows and the rounding of the vaulting conoids, though these, once adopted, brought new difficulties in their train. Three backward steps or returns are made—(1) to the principle of reliance on vault surfaces of a regular geometric form; (2) to the square plan of a vaulted bay, and the old difficulty of the vaulting oblong compartments, solved differently at Oxford Cathedral and Divinity Schools, King's College, and St. George's; (3) to the "archaistic" use of Saxon, Norman, and Early English features, as at the *parclose* in Hexham south transept, the south wall arcade in the cloisters of Melrose, and other examples. Among the buildings of the period, illustrated by numerous photographic slides, were the nave and west front of Winchester; St. George's Chapel, Windsor; King's College, Cambridge; and Henry VII. Chapel, Westminster. In Scotland there is no Perpendicular style, no fan vaulting, and but little perpendicular tracery; but in place of it a revival of the Decorated style (1450-1560) mingled with features derived from France as well as England. Many of the buildings are collegiate chapels, or private foundations, planned frequently in one aisle, having a central or western tower, sometimes surmounted by a crown. A semi-octagonal apse terminates the church to the east, and in two cases the transepts take a similar form, while flamboyant tracery appears also to indicate French influence. Generally the work is heavier and simpler than in England, and the ceilings are frequently barrel-vaults slightly pointed. The examples of Rosslyn (the resemblance of which to Portuguese work was regarded as accidental), the south transept and east end of Melrose and King's College, Aberdeen, were among examples of this period, fully illustrated. In concluding, the lecturer exhibited comparative views of the naves of Canterbury and St. Paul's, London, remarking that it would be the business of the next seven lectures to show how the change of style was being worked out in Italy and France.

MINUTES. XII.

At a Special General Meeting held on Monday, 18th April 1898, at 8 p.m., Mr. H. L. Florence, *Vice-President*, in the Chair, with 29 Fellows (including 13 members of the Council), 20 Associates, and 1 Hon. Associate, the Minutes of the Special General Meeting of the 4th April [p. 302] being before the Meeting for signature by the Chairman, Mr. Wm. Woodward [A.] having inquired why, during the past few months, the number of members of the Council and of Fellows and Associates present at meetings had been omitted from the printed Minutes, and the Chairman having replied that the omission was due to an interior question connected with the management of the JOURNAL, Mr. Woodward suggested that for the future the numbers should always be inserted, as the information was useful to members not in the habit of attending the Meetings. The Minutes of the Special Meeting above referred to were then taken as read and signed as correct.

Mr. Woodward having further asked whether the Chairman was yet in a position to give the Institute any information with respect to the architect to be appointed for the designs of the new Government offices, and expressed the hope that whatever influence the President and Council might have with regard to the appointment would be exerted in favour of a member of the Institute, the Chairman replied that no information could be given at present, as the matter was entirely confidential between the Government and the Council of the Institute; members, he thought, might rest assured that the President would do what was right in the matter.

The decease was announced of Mr. Alfred Morrison, Hon. Associate since 1877.

The following Associate attending for the first time since his election was formally admitted and signed the register—namely, Mr. Herbert Shepherd.

With reference to the nomination of the President for the ensuing year of office, on the motion of the Chairman, seconded by Mr. J. M. Brydon [F.], it was

RESOLVED, *nem. con.*, that the resolution of the Royal Institute, suspending By-law 26 for one year [p. 302 *ante*], passed at the Special General Meeting of the 4th April 1898, be confirmed.

The Chairman having announced that the Lords of the Privy Council had raised certain objections to ambiguities of wording in the additions and amendments to By-laws 9 and 30, as resolved upon at the Special General Meetings held respectively on the 14th June and the 29th November 1897, moved that the paragraph to be added to By-law 9, in accordance with such resolutions, should read as follows, the words in italics having been freshly inserted to carry out the intention of the Meeting and to meet the objections of the Privy Council:

Provided always that when the Council of the Institute receive a unanimous recommendation formally submitted by the Council of any Allied Society that a practising member of the profession is eligible and worthy of being elected as a Fellow, the Council shall, *during the five years from the date of approval of this provision by the Privy Council*, have power to elect him, his work being of sufficient merit. The Council may also elect annually to the Fellowship without ballot the President or President-elect of any or all of the Allied Societies who may be eligible and apply for admission.

Professor Kerr [F.] having pointed out in reference to the last sentence that one person could not be "President" of "all of the Allied Societies," it was agreed, on the

suggestion of the Hon. Secretary, that in the final sentence of the clause the words "or all" should be omitted.

A further correction, proposed by Mr. Edwin T. Hall [F.] and seconded by Mr. Ernest George, *Vice-President*, was agreed to, viz.: that after the words "have power to elect him," the concluding words of the first sentence should read "*if in their opinion his work be of sufficient merit.*"

Mr. John Hebb [F.], having contended that the words "the Council shall . . . have power to elect" in the first sentence were mandatory, and the words "The Council may also elect" in the second sentence permissive only, and that no such distinction was intended by the original resolution, moved that the second sentence should be amended so that the opening words should read "The Council shall also have the power to elect." The proposition was seconded by Mr. Wm. Woodward [A.]

Mr. J. M. Brydon [F.], seconded by Mr. H. Heathcote Statham [F.], having moved as an amendment to Mr. Hebb's proposition that the words in the second sentence remain, and that in the first sentence the word "may" be substituted for "shall," and the words "have power to" be omitted, Mr. Beresford Pite [F.] objected to the amendment as placing a new power in the hands of the Council. Ultimately Mr. Brydon's amendment was withdrawn, and Mr. Hebb's proposition put from the chair and carried, whereupon it was

RESOLVED, that the clause to be added to By-law 9, as finally amended and agreed to, should read as follows:

Provided always that when the Council of the Institute receive a unanimous recommendation formally submitted by the Council of any Allied Society that a practising member of the profession is eligible and worthy of being elected as a Fellow, the Council shall, during the five years from the date of approval of this provision by the Privy Council, have power to elect him, if in their opinion his work be of sufficient merit. The Council shall also have the power to elect annually to the Fellowship without ballot the President or President-elect of any of the Allied Societies who may be eligible and apply for admission.

The Chairman explained that the alterations proposed in By-laws 30 and 31 were necessary to make the clauses agree with the change resolved upon at the Meeting of the 29th November last, by which the Council would remain in office until the last Meeting of the Session. It was thereupon

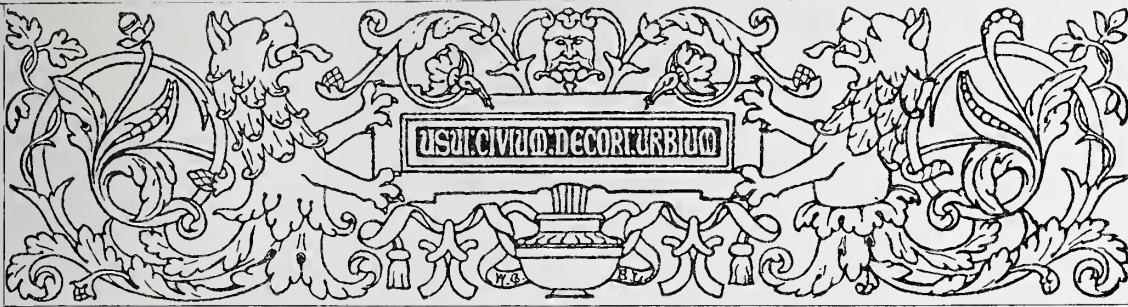
RESOLVED, that the words "the said meeting" in the antepenultimate clause of By-law 30 be altered to "the close of the last General Meeting in June." And, further, that in the last sentence of By-law 31 the word "first" should be altered to "last."

The Special General Meeting then terminated.

At the Twelfth General Meeting (Ordinary) of the Session, held at the conclusion of the Meeting above mentioned, Mr. H. L. Florence, *Vice-President*, in the Chair, with 30 Fellows (including 13 members of the Council), 19 Associates (including 1 member of the Council), 1 Hon. Associate, and several visitors, the Minutes of the Ordinary Meeting, held on Monday, 4th April 1898 [p. 302] were taken as read, and signed as correct.

A Paper by Mr. A. N. Paterson [A.], M.A., Godwin Bursar 1896, entitled A STUDY OF DOMESTIC ARCHITECTURE IN THE EASTERN STATES OF AMERICA IN THE YEAR 1896, having been read by the author and discussed, a vote of thanks to Mr. Paterson was passed by acclamation.

The proceedings then closed, and the Meeting separated at 10.20 p.m.



REPORT OF THE COUNCIL FOR THE OFFICIAL YEAR 1897-98.

Approved and adopted by the Annual General Meeting, 2nd May 1898.

Mr. H. L. FLORENCE, *Vice-President*, in the Chair.

SINCE the publication of the last Annual Report on the 6th May 1897 the Council have held 24 meetings, of which the Council elected on the 14th June 1897 have held 18. These are exclusive of meetings held by Committees of Council.

In the course of the year 8 Fellows have been elected, 31 Associates, 3 Hon. Associates, and 9 Hon. Corr. Members. The numbers in each class of subscribing members stand as follows:—Fellows 597; Associates 1,001; Hon. Associates 52.

The following gentlemen have been elected as Honorary Corresponding Members:—MM. Jean Jacques Winders (Antwerp), Alexandre Charles Arthur, Comte de Marsy (Compiègne, France), Jean Théophile Homolle (Paris), El Conde de San Juanario (Madrid), Johan Louis Ussing (Copenhagen), Settimio Fedele Gerardo Giampietri (Rome), Arnaldo Rodondo Adães Bermudes (Lisbon), Leopold Eidlitz (New York), Valère Dumortier (Brussels).

The losses by death to the Institute during the past year have been numerous and serious. They are as follows:—*Fellows*: Arthur Baker, Daniel Birkett, W. Stevens Cross, James Edmeston, Octavius Hansard, John L. Pearson, R.A., C. J. Phipps, C. J. Shoppee, W. S. Witherington. *Associates*: Joseph Battye, C. A. Chastel de Boynville, A. J. Forge, C. J. Gladman, George Kenyon, George Orrell, H. Stone Wood. *Hon. Associates*: Sir Henry Bessemer, F.R.S., the Hon. Charles Alexander Gore, Alfred Morrison. *Retired Fellow*: George Elkington. *Hon. Corr. Member*: Augustus Laver (San Francisco).

In John Loughborough Pearson, R.A. (*Royal Gold Medallist* 1880), the Council mourn the loss of one of the most distinguished members of the Institute. A special memoir will be found on p. 113 of the current volume. Octavius Hansard was for many years a member of the Council, well known to most of the older members of the Institute; and James Edmeston for a number of years was chairman of the Architectural Union Company.

Preliminary and Intermediate Examinations were held in June and November 1897 in London, Manchester, and Bristol, and Final Examinations in London. The results are shown in the following tabulated forms:—

THE PRELIMINARY EXAMINATION.					
—	Examined	Exempted	Passed	Relegated	Failed
Summer	93	37	53	34	6
Autumn	80	33	47	33	—
Totals	173	70	100	67	6

THE INTERMEDIATE EXAMINATION.

	Examined	Passed	Relegated	Failed
Summer	58	35	23	—
Autumn	63	35	28	1
Totals	121	70	51	1
FINAL AND SPECIAL EXAMINATIONS QUALIFYING FOR CANDIDATURE AS ASSOCIATE.				
Summer	33	15	18	—
Autumn	20	9	11	—
Totals	53	24	29	—

Thus it will be seen that during the year 170 gentlemen have been registered as *Probationers*, the number of whom now stands at 988; and 69 gentlemen have been registered as *Students*, the number of whom now stands at 248.

The Arthur Cates Prizes for the best set of Testimonies of Study submitted by Students for admission to the Final Examination have been awarded to Mr. Percy Morris [A.] for the June Examination, and to Mr. Laurence Hobson [A.] for the November Examination.

The Ashpitel Prize has not been awarded this year.

The Council have to thank the Allied Societies at Manchester and Bristol for their help in conducting examinations at those centres during the year.

The Board of Examiners, after numerous meetings and anxious consideration, have prepared a new syllabus of the Examinations. The programmes containing the new regulations, which will come into force during the June Examinations, have been printed in full in the current volume of the *JOURNAL*, p. 237.

The Council desire to express their obligation to the Board of Examiners for their gratuitous services in conducting the Examinations.

The Royal Gold Medal for the promotion of architecture was awarded in 1897 to Dr. P. J. H. Cuypers (*Hon. Corr. M.*), of Amsterdam, for his executed works as an architect. Her Majesty has graciously signified her approval that it shall be awarded this year to the President, Professor George Aitchison, R.A., for his works as an architectural writer and for his executed works as an architect.

The Deed of Award of the various Prizes and Studentships was presented to the Institute at a General Meeting on the 24th January. A critical appreciation of the drawings submitted was read by Mr. Ernest George, *Vice-President*. An exhibition of the drawings was held in the rooms on the second floor, newly acquired by the Institute, from the 14th to the 24th January inclusive. The exhibition included the drawings made by Mr. Cecil Brewer, Pugin Student 1896; Mr. J. A. R. Inglis [A.], Soane Medallist 1897; Mr. W. Haywood, Pugin Student 1897; Mr. A. E. Henderson, Owen Jones Student 1897; Mr. A. T. Griffith, Aldwinckle Student 1897. The Deed of Award is printed in the *JOURNAL*, pp. 152, 153.

The following selection from the Institute prize drawings is now being sent round for exhibition at the various allied centres:—Drawings of Clare College, Cambridge, by Mr. Thomas Tyrwhitt (*Measured Drawings Medallist*), and of Thaxted Parish Church, by Mr. Cyril Wontner Smith (awarded a Medal of Merit in the Measured Drawings Competition); measured drawings and sketches by Mr. Charles De Gruchy (*Pugin Student*) and Mr. Benjamin Bower (awarded Medal of Merit and £5 5s. in the Pugin Competition);

designs for a villa and ornamental garden by Mr. John Stevens Lee (*Tite Prizeman*) and Mr. Thomas A. Pole (awarded Medal of Merit and £10 10s. in the Tite Competition); designs for a small country church by Mr. Harbottle Reed (*Grissell Medallist*) and Mr. W. Stanley Bates (awarded Medal of Merit in the Grissell Competition); measured drawings and sketches by Mr. James B. Fulton (*Aldwinckle Student*); Testimonies of Study for the Final Examination by Mr. Percy Morris and Mr. Laurence Hobson (*Cates Prizemen 1897*), and for the Intermediate by Mr. F. W. Newman and Mr. J. E. Franck.

With regard to the Owen Jones Studentship, the Council have to report that, the value of the Studentship having gradually increased to double its former value, and the will of the late Owen Jones giving them the authority to act, they have increased the value of the Studentship from £50 to £100, and the duration of the Student's tour from eight weeks to six months. They have also decided that, on his return from the tour, the Student shall submit an original composition in colour decoration on a prescribed subject.

On behalf of the Royal Institute and the Allied Societies the Council addressed their congratulations to Her Majesty the Queen on the attainment of the sixtieth year of her reign. The Address, signed by the Council and by the Presidents of the Allied Societies, was received graciously by Her Majesty.

A Festival Dinner was held on the 2nd December at the Whitehall Rooms to commemorate the sixtieth anniversary of Her Majesty's accession and the incorporation of the Royal Institute. The company included many distinguished guests, among whom may be mentioned the Bishop of London, the Lord Mayor, the Chairman of the London County Council, and the Presidents of the Royal Academy, the Royal Institute of Painters in Water Colours, the Institution of Civil Engineers, the Incorporated Law Society, and the Surveyors' Institution, Sir George Scott Robertson, K.C.S.I., and the Hon. Willoughby Burrell. Professor Aitchison, R.A., President of the Royal Institute, was in the chair.

The Council desire to announce that they have taken over from the Architectural Union Company the lease of the second floor of the premises in 9 Conduit Street, at the rent of £175 per annum, the lease to be coterminous with that of the premises already occupied by the Institute. Two rooms are sublet. Of the remaining three rooms, one will be used, for the present, as an office; another has been fitted with bookcases, to afford storage space for the Library, which has outgrown its present accommodation; while the third room, to the front, overlooking Conduit Street, is being fitted up as a tea and smoking room. It is hoped that this will be of great convenience to, and much used by, both metropolitan and provincial members. Arrangements will be made for tea and coffee to be supplied at moderate charges.

The Institute has received a large supply of programmes, maps, &c., from the Trustees of the Phœbe Hearst Architectural Plan for the University of California, and is distributing particulars to intending competitors.

The Report of the Council on the Fellowship question came before the General Body, and at a Special General Meeting, held on Monday, 14th June 1897, nine resolutions were passed, two of which necessitated a change in the By-laws.* At a Special General Meeting, held on Monday, 13th November, it was resolved that a change be made in By-law 30, by which the Council remain in office until the last General Meeting in June each year, instead of the first, as hitherto.†

The Council are pleased to report that they have been enabled since 31st December last to invest the sum of £148 in shares in the Architectural Union Company, and the sum of £974 11s. 7d. in 2½ per cent. Consols.

At the Architectural Congress held at Brussels last year in connection with the International Exhibition the Institute was represented by the President and Mr. John Slater [*F.*].

* JOURNAL, Vol. IV. 3rd series, pp. 395, 396.

† JOURNAL, current vol. p. 112.

At the Triennial International Congress of Hygiene and Demography held in April this year at Madrid, Mr. Thomas W. Cutler [*F.*] was appointed to represent the Institute.

REPORT OF THE ART STANDING COMMITTEE.

The Art Standing Committee report that they have held six meetings since the publication of the last report. Mr. Alfred Waterhouse, R.A., was re-elected Chairman; Mr. Macvicar Anderson, Vice-Chairman; and Messrs. E. W. Mountford and Owen Fleming were reappointed Hon. Secretaries.

Vauxhall Bridge.—After some considerable amount of correspondence on this subject, Mr. Alfred Waterhouse and Mr. Mountford were favoured with an interview by Sir Alexander Binnie, who exhibited to them his drawings and a carefully prepared model of the bridge. Your Committee are gratified to find that the London County Council have abandoned their original proposal for a steel bridge, and have now determined to construct it of concrete faced with granite.* Your Committee are still in communication with the London County Council respecting the details of the masonry.

New Government Offices in Whitehall.—This subject has received much consideration from the Committee, and, with the consent of the Council, the President, Mr. Alfred Waterhouse and Mr. J. Macvicar Anderson attended before the Committee of the House of Commons to give evidence in favour of a scheme which embraced the widening of the north end of Whitehall westwards, and certain other modifications of the Government proposals for providing a site for the War Office and carrying out the improvement of Parliament Street. The Parliamentary Committee, while adopting some of the suggestions of your representatives, unfortunately appeared to think that the probable cost of the widening of Whitehall was an insuperable objection to this portion of the proposals. The Chairman of the Committee, however, warmly thanked your representatives for attending and for the trouble they had taken in the matter.

Liskeard Church Tower.—The proposed destruction of the western tower of this church has frequently been considered by your Committee, who, with the consent of the Council, have had some correspondence with the Local Authorities. The Faculty applied for was, in the first case, refused by the Chancellor of the Diocese, but quite recently he appears to have reconsidered his decision, and has consented to the old tower being taken down and replaced by a new one, on the condition that the materials of the old tower are to be re-used as far as possible in the construction of the new tower, and that the height is not to be increased by more than nine feet. This decision is much to be deplored.

Russell Square.—A letter respecting the alterations of the exterior of the houses in this square having been sent from the Council for the consideration of your Committee, a memorial in the form of a protest against the suggested disfigurement of the elevations was addressed to the Duke of Bedford, which was duly acknowledged by Mr. Alfred Stutfield. Your Committee greatly regret, however, to observe that the alterations are still being proceeded with.

Kew Bridge.—Your Committee having learned that the existing bridge is about to be removed and rebuilt from the designs of Sir J. Wolfe Barry, the Chairman, at the request of your Committee, has been in communication with that gentleman.

Sessional Papers.—Your Committee have to record that for the first time for some years no evening has been allotted to them for the reading of papers on subjects connected with Art before the Institute.

Your Committee have passed a cordial vote of thanks to the Chairman, Vice-Chairman, and Hon. Secretaries for their services during the Session.

* The advantages of stone construction over steel construction were strongly urged by the Deputation of your Committee at their interview with the Bridges Committee of the L.C.C. on 23rd May 1894.

REPORT OF THE LITERATURE STANDING COMMITTEE.

The Literature Standing Committee report that since the election of the Committee, on 14th June 1897, they have held seven meetings. At the first meeting of the Committee Mr. Alex. Graham, F.S.A., was appointed Chairman; Mr. R. Phenè Spiers, F.S.A., Vice-Chairman; and Messrs. R. Elsey Smith and Arthur S. Flower, M.A., Hon. Secretaries.

The appointment of a Librarian having been referred to the Committee by the Council, the matter was carefully considered, and the Committee made a recommendation to the Council that Mr. Rudolf Dircks, who had been acting as Librarian for six months, should be appointed to the post, and this recommendation was subsequently confirmed by the Council.

The following Sessional Papers arranged for by the Committee have been read:—"Notes on Renaissance Architecture in Malta, with special reference to the Buildings of the Order of St. John," by Mr. Arthur S. Flower [A.], M.A., F.S.A., on 15th November 1897; "The Housing of the Drama," by Mr. E. O. Sachs, on 7th February 1898; "The Mediaeval Campanili of Rome," by Mr. J. Tavenor Perry [F.], on 21st February; "Heraldic Drawing and its Adaptation," by Mr. J. D. Crace [H.A.], on 21st March; "Artistic Copyright," by Mons. G. Harmand, on 4th April; and "Domestic Architecture in the United States," by Mr. A. N. Paterson [A.], M.A., on 18th April. The following paper has been arranged for a subsequent date:—"The Libraries of the Middle Ages," by Mr. T. G. Jackson, R.A., on 16th May.

The Committee desire to acknowledge their indebtedness to the authors of the several articles and reviews contributed to the JOURNAL during the past year, namely:—Prof. Aitchison, R.A., Messrs. T. W. Aldwinckle, R. S. Ayling, R. S. Balfour, A. T. Bolton, Cav. Giacomo Boni, Prof. G. Baldwin Brown, Messrs. P. Hippolyte-Boussac, Charles Buls, H. W. Burrows, Frank Caws, Somers Clarke, John Cotton, J. D. Crace, E. Guy Dawber, W. M. Fawcett, Owen Fleming, B. F. Fletcher, J. A. Gotch, Matt. Garbutt, E. W. Hudson, J. H. Jones, Prof. Kerr, Mr. H. V. Lanchester, Dr. A. S. Murray, Messrs. F. C. Penrose, F.R.S., W. A. Pite, Col. L. Prendergast, Messrs. W. Scott, W. Simpson, R.I., R. Phenè Spiers, A. E. Street, B. T. Taylor, C. Harrison Townsend, Paul Waterhouse, and A. M. Watson.

The Committee desire once more to express their satisfaction with the efficient and zealous assistance they have received in the conduct of the JOURNAL from the Sub-Editor, Mr. George Northover.

The Committee have arranged for a further economy in the publication of the JOURNAL by altering the date of publication from Thursday to Saturday, whereby the high charges for night-work are avoided.

The Committee have had under consideration the need for a Supplement to the Brandon Catalogue of the Library, which was published in 1888, and made a recommendation to the Council to print a Supplement to the Catalogue of the Reference Library, bringing it up to date, which recommendation has been adopted.

During the past year an important addition to the Library accommodation has been made by the incorporation with the Library premises of three rooms in the upper floor, one of which is being fitted up with shelves. It is proposed to transfer to these rooms those books in the Library which are only very rarely consulted, and to provide in this manner the accommodation so urgently required for the Reference Library.

The Committee have also to report that, in order to avoid the risk of damage from moisture to the Burlington-Devonshire Collection, they have had an air-tight case made to hold the Collection.

The Committee have received from the Architectural Union Company a donation of £30 for the purchase of books, a portion of which has been already expended.

The Librarian reports to the Committee as follows:—

During the twelve months ending on the 31st March of the present year, 172 volumes and 60 pamphlets have been added to the Reference Library, exclusive of periodicals, reports, and transactions of Societies, and parts of works issued in serial form now in progress. During the same period 91 volumes and 4 pamphlets have been added to the Loan Library. These figures include the volumes which were received under the White Bequest, and which were not included in the statistics of my last report.

The purchases comprise 42 volumes and 3 pamphlets for the Reference, and 24 volumes for the Loan Library.

The attendances of borrowers and readers during the year numbered 3,716 (last year 3,042), the number of works issued on loan being 1,073 (last year 931; in 1896, 831). A table of attendances of readers using the Reference Library is herewith appended:—

DATE	DAY ATTENDANCES. 10 a.m. to 5 p.m.					EVENING ATTENDANCES. 5 p.m. to 8 p.m.					Books issued on Loan.
	Members.		Non-members.		Total.	Members.		Non-members.		Total.	
	Library.	Periodicals only.	Library.	Periodicals only.		Library.	Periodicals only.	Library.	Periodicals only.		
1897.											
April	34	4	68	4	110	23	10	63	13	109	84
May	54	8	79	9	150	35	7	76	8	126	121
June	37	6	63	5	111	26	10	68	4	108	65
July	41	5	23	4	73	61	4	27	3	95	62
August			Vacation.					Vacation.			18
September	49	14	45	7	115	30	3	19	0	52	97
October	58	7	88	5	158	26	13	94	11	144	116
November	58	8	111	6	183	29	12	68	14	123	108
December	46	5	63	4	118	29	5	68	8	110	88
1898.											
January	63	14	79	13	169	43	4	42	2	91	108
February	63	18	75	8	164	26	6	42	7	81	101
March	76	11	55	2	144	37	7	61	4	109	105
TOTAL	579	100	749	67	1495	365	81	628	74	1148	1073

Since the beginning of the present year an account has been kept of the number of volumes issued to readers using the Reference Library. This shows that 1,554 volumes were consulted from the 1st January to the 31st March 1898.

The number of tickets issued to other than members of the Institute, or to Students and Probationers, for admission to the use of both departments of the Library was 56.

Many valuable donations have been received during the year, including Böttiger and Lindegren's *Hedvig Eleonoras Drottningholm anteckningar till Slottets äldre Byggnadshistoria*, presented by Herr Agi Lindegren; *Bankunst der Renaissance: Entwürfe von Studirenden*, presented by Professor J. C. Raschdorff [*Hon. Corr. M.*], the editor; Wagner's *Einige Skizzen: Projecte und ausgeführte Bauwerke*, presented by the Author [*Hon. Corr. M.*]; Blomfield's *History of Renaissance Architecture in England*, presented by the Author; Sachs' *Modern Opera Houses and Theatres* (vol. ii.), presented by Mr. H. L. Florence; and Hudson's *Law of Building*, presented by Mr. Arthur Cates.

Amongst the numerous important works acquired by purchase during the year, the following may be mentioned:—D'Espouy's *Fragments d'Architecture du moyen âge et de la renaissance*; Paoletti di Osvaldo's *L'Architettura e la Scultura del Rinascimento in Venezia* (3 vols.); *Dessins inédits de Viollet Le Due*; Roeper and Bösch's *Moebel aller Stilarten vom Ausgange des Mittelalters bis zum Ende des 18. Jahrhunderts*; Vallance's *Art of William Morris*; *Le mobilier national depuis Louis XIV jusqu'à l'Empire*; Westlake's *History of Design in Painted Glass*; Dehli's *Norman Monuments in Palermo*; Schmidt and Fabiana's *Vienza*; Longfellow's *Cyclopedia of Architecture in Italy*, &c.

Many new and interesting books have been added to the Loan Collection, and several works have been purchased with a view to making the Library more complete in special subjects.

REPORT OF THE PRACTICE STANDING COMMITTEE.

The Practice Standing Committee report that they have held the usual monthly meetings, Mr. J. Douglass Mathews having been elected Chairman; Mr. Thomas Harris, Vice-Chairman; and Messrs. Edmund Woodthorpe [*F.*] and C. H. Brodie [*A.*], Hon. Secretaries.

The amended Schedule of Professional Charges occupied the attention of the Committee until 21st December, when its consideration was completed, and it was sent, with a report, to the Council, who now have it under consideration, assisted by the Chairman and Vice-Chairman of the Committee.

The question of the stamping of awards, where no amount is stated, received the attention of the Committee, and a decision obtained by the Committee from the authorities at Somerset House was published in the *JOURNAL* of 26th February last.

An important question as to the construction of clauses 17, 20, and 25 of the new Conditions of Contract was referred to and is being considered by the Committee.

The attention of the Council was called to the liability of architects, when doing certain works, to obtain licenses as appraisers. This matter was referred to the Committee, and is still under consideration.

The Council referred to the Committee the Draft Bill of the London County Council for amending the London Building Act 1894, together with an explanatory letter thereon; also a large number of letters received in answer to the circular sent to members requesting opinions as to the general amendments that the Act needs. As the Bill was already before Parliament it was decided to confine the attention of the Committee for the moment to the consideration of the points raised by the Draft Bill. This was considered in detail and a report thereon sent to the Council.

The Bristol Society of Architects forwarded a copy of a resolution of the District Federation of Builders suggesting that risks under the Employers' Liability Act should be insured against, and the amount placed in the contract and paid by the employer. This was referred by the Council to the Committee, who reported that, as the Institute Conditions of Contract provide for the contractor taking all risks of injury to persons, &c., it was in their opinion most undesirable to interfere with this or to create a divided responsibility.

REPORT OF THE SCIENCE STANDING COMMITTEE.

The Science Standing Committee report that during the past Session they have held several meetings, with an average attendance of 11 members. Mr. P. Gordon Smith was appointed Chairman; Professor Unwin, F.R.S., Vice-Chairman; and Mr. William C. Street and Mr. H. D. Searles Wood, Hon. Secretaries.

A further report on the Results of Experiments for the purpose of ascertaining the strength of different kinds of brickwork was presented to the Institute at the Ordinary Meeting held on 13th December.*

The Committee have presented a report to Council on the subject of standardizing the size of bricks, referred to the Committee by a General Meeting of the Institute on the 1st March 1897, and are now in communication with the Brickmakers' Association with the object of coming to an agreement on the matter.

The subject of proposed Building Regulations for the purpose of reducing the liability of warehouses, &c., to destruction by fire has occupied the attention of the Committee for several meetings, but no conclusions have yet been arrived at.

FINANCES.

The accounts of Ordinary Funds for 1897, prepared by Messrs. Saffery Sons, & Co., chartered accountants, and audited by Mr. Edmund Woodthorpe [*F.*] and Mr. Owen Fleming [*A.*], the Hon. Auditors appointed at the Annual General Meeting of 1897, here follow:—

* The question of publishing an account of the whole of the experiments and results in octavo form is being referred to the Council for their decision.

The Revenue Account and Balance Sheet of Trust Funds for the year 1897, audited by Mr. Edmund Woodthorpe [F.] and Mr. Owen Fleming [A.], here follow:—

Revenue Account of Trust Funds for the Year ended 31st December 1897.

Dr.	£ s. d.	Cr.	£ s. d.
ALDWINCKLE STUDENTSHIPS:—			
To Cash paid Student 1896 [H. S. East].....	50 0 0	By Balance from last Account.....	150 0 0
To Cash paid Student 1897, 1st instalment [A. T. Griffith]	25 0 0		
To Balance carried forward	75 0 0		
	<u>150 0 0</u>		<u>150 0 0</u>
ASHFUTEL PRIZE FUND:—			
To Cost of Books for Prizeman [T. Denton Brooks]	10 10 0	By Balance from last Account	10 17 0
To Balance carried forward	10 7 0	By Dividend on 20 Shares, Architectural Union Co., at 10s. per share	10 0 0
	<u>20 17 0</u>		<u>20 17 0</u>
CHARITABLE FUND:—			
To Cash paid Architects' Benevolent Society.....	5 5 0	By Balance from last Account	0 16 8
To Balance carried forward	0 18 4	By Dividends on £200. 10s. 2½ per Cent. Consols.....	5 6 8
	<u>6 3 4</u>		<u>6 3 4</u>
DONALDSON TESTIMONIAL FUND:—			
To Cost of Medals	2 15 0	By Balance from last Account	0 9 6
To Balance carried forward	0 10 0	By Dividends on £72 L. & N.W. Railway 4 per Cent. Preference Stock	2 15 6
	<u>3 5 0</u>		<u>3 5 0</u>
GODWIN BURSARY:—			
To Cash paid Bursar 1895, 2nd instalment [A. W. Cleaver]	20 0 0	By Balance from last Account	37 18 5
To Cash paid Bursar 1896, 2nd instalment [A. N. Paterson]	20 0 0	By Dividends on £1030 Caledonian Railway 4 per Cent. Debenture Stock	39 16 6
To Cash paid Bursar 1897, 1st instalment [R. S. Ayling]	20 0 0		
To Cost of Medals	3 19 0		
To Balance carried forward.....	13 15 11		
	<u>77 14 11</u>		<u>77 14 11</u>
GRISSELL LEGACY:—			
To Balance from last Account	17 11 6	By Dividends on £300 Great Indian Peninsula Railway 5 per Cent. Stock	16 6 3
To Cash paid Prizeman [S. K. Greenslade]	10 10 0	By Cash from Ordinary Funds to liquidate deficit.....	21 13 3
To Cost of Medal	9 18 0		
	<u>37 19 6</u>		<u>37 19 6</u>
LIBRARY FUND:—			
To Purchase of Books, Binding, &c.	73 18 6	By Balance from last Account	2 14 4
To Printing, Stationery, &c.	3 15 6	By Annual Donation from Mr. Sydney Smirke.....	5 0 0
To Petty Expenses	2 1 7	By Entrance Donations of three Hon. Associates	6 6 0
To Balance carried forward	36 6 9	By Grant from Ordinary Funds	100 0 0
	<u>119 0 9</u>	By Fines (Loan Collection)	2 2 0
			<u>119 0 9</u>
OWEN JONES STUDENTSHIP:—			
To Cash paid Student 1896, 2nd instalment [H. C. Corlette]	25 0 0	By Balance brought forward.....	10 11 2
To Cash paid Student 1897, 1st instalment [A. E. Henderson]	25 0 0	By Dividends on £1773. 6s. 8d. Midland Railway 3 per Cent. Debenture Stock	51 8 6
To Balance carried forward	53 1 4	By Dividends on £850 Great Western Railway 5 per Cent. Consolidated Stock	41 1 8
	<u>103 1 4</u>		<u>103 1 4</u>
PUGIN MEMORIAL FUND:—			
To Cash paid Student 1896 [C. C. Brewer].....	40 0 0	By Balance from last Account	12 10 4
To Balance carried forward	13 17 10	By Dividends on £1070 L. & N.W. Railway 4 per Cent. Preference Stock	41 7 6
	<u>53 17 10</u>		<u>53 17 10</u>
TITE LEGACY FUND:—			
To Balance from last Account	3 15 6	By Dividends on £1150 2½ per Cent. Consols	30 11 4
To Cash paid Prizeman 1896, Balance of Grant [H. A. Crouch].....	10 0 0		
To Balance carried forward	16 15 10		
	<u>30 11 4</u>		<u>30 11 4</u>
TRAVELLING FUND:—			
To Cost of £40 Madras Railway 4½ per Cent. Stock	61 4 0	By Balance from last Account	29 11 7
To Balance carried forward	5 7 0	By Dividends on £830 Madras Railway 4½ per Cent. Stock	36 2 0
	<u>66 11 0</u>	By Dividends on £40 " " " "	0 17 5
			<u>66 11 0</u>

Examined with the several vouchers and found to be correct. 31st March 1898.

(Signed) { EDMUND WOODTHORPE.
OWEN FLEMING.

Dr.	Balance Sheet of Trust Funds, 31st December 1897.	Cr.
To ASHPITEL PRIZE FUND:—	£ s. d.	
Capital—20 Shares in the Architectural Union Company, Limited, at £14 per Share	280 0 0	By Government and other Securities for total value of Trust Funds invested
Balance at credit of Revenue Account	10 7 0	9704 0 1
To CHARITABLE FUND:—		By Cash in hands of Bankers
Capital—£200, 10s. 2½ per Cent. Consols	195 14 9	226 9 6
Balance at credit of Revenue Account	0 18 4	
To DONALDSON TESTIMONIAL FUND:—		
Capital—£72 L. & N.W. Railway 4 per Cent. Preference Stock	89 0 0	
Balance at credit of Revenue Account	0 10 0	
To GODWIN BURSARY:—		
Capital—£1030 Caledonian Railway 4 per Cent. Debenture Stock	1314 13 6	
Balance at credit of Revenue Account	13 15 11	
To GRISSELL LEGACY FUND:—		
Capital—£300 Great Indian Peninsula Railway 5 per Cent. Guaranteed Stock	513 14 10	
To LIBRARY FUND:—		
Balance at credit of Revenue Account	26 6 9	
To OWEN JONES STUDENTSHIP:—		
Capital—£1773, 6s. 8d. Mid and Railway 3 per Cent. Debenture Stock	1773 0 0	
£1100 Great Western Railway 5 per Cent. Consolidated Stock	1900 12 0	
Balance at credit of Revenue Account	53 1 4	
	3234 3 2	
To PUGIN MEMORIAL FUND:—		
Capital—£1070 L. & N.W. Railway 4 per Cent. Preference Stock	1342 12 6	
Balance at credit of Revenue Account	13 17 10	
To TITE LEGACY FUND:—		
Capital—£1150 2½ per Cent. Consols	1109 1 6	
Balance at credit of Revenue Account	16 15 10	
To TRAVELLING FUND:—		
Capital—£870 Madras Railway 4 per Cent. Stock	1155 11 0	
Balance at credit of Revenue Account	5 7 0	
To ALDWICKLE STUDENTSHIPS FUND:—		
Balance at credit of Revenue Account	75 0 0	
	£9930 0 1	£9930 0 1

Examined with the several vouchers and found to be correct. 31st March 1898.

(Signed) { EDMUND WOODTHORPE
OWEN FLEMING.

NOTE.—In accordance with a recommendation by the Finance Committee adopted by the Council in June last, the liquid assets only have been included in the Balance Sheet of Ordinary Funds [p. 40], the values put upon the furniture and other property being omitted. These are shown in the subjoined "Schedule of Property."

SCHEDULE OF PROPERTY.

	£ s. d.	£ s. d.
Furniture, Fittings, &c., as per last Balance Sheet	2496 12 4	
Additions during year 1897	1 10 0	
	2498 2 4	
Less Depreciation	62 9 0	
	2435 13 4	
Printed Books and Manuscripts	4000 0 0	
Oil Paintings	1800 0 0	
Lithographs, Prints, &c.	400 0 0	
Water-colour, Sepia, &c.	600 0 0	
Models, Plaster Busts, &c.	140 0 0	
Marble Busts	150 0 0	
	£9925 13 4	

In conclusion the Council submit an Estimate of Income and Expenditure of Ordinary Funds for the twelve months of 1898, exclusive of Entrance and Final Examination Fees:—

EXPENDITURE.	£ s. d.	INCOME.	£ s. d.
Rent, Lighting, and Warming	1060 0 0	Subscriptions and Arrears	4570 0 0
Salaries	1225 0 0	Dividends on Stocks and Shares and Interest on Deposit Account	195 0 0
General Printing, Stationery, Postage, and Petty Expenses	435 0 0	Sale of Publications (other than JOURNAL and KALENDAR)	150 0 0
General Meetings, Exhibitions, &c.	180 0 0	JOURNAL and KALENDAR—	
Housekeeping (including Office Attendant, &c.)	135 0 0	Sales	60 0 0
Advertisements	45 0 0	Advertisements	530 0 0
Examination Expenses (Statutory and Institute)	250 0 0		590 0 0
General Repairs	120 0 0	Use of Rooms	85 0 0
Fire Insurance	25 0 0	Examination Fees—	
Medals and other Prizes	85 0 0	Statutory	10 0 0
Library Grant	100 0 0	Preliminary	450 0 0
Architectural Association Grant	100 0 0	Intermediate	220 0 0
JOURNAL (2,250 copies): Reporting, Printing, Binding, Carriage, &c.	1000 0 0	Final (Extra Fees)	25 0 0
KALENDAR (2,500 copies)	150 0 0		705 0 0
Contributions to Allied Societies	260 0 0		
Legal and other expenses	50 0 0		
Miscellaneous Expenses	75 0 0		
	£5295 0 0		
Estimated Balance	1000 0 0		
	£6295 0 0		£6295 0 0

THE WARMING OF PUBLIC BUILDINGS.*

By FREDERIC R. FARROW [*F.*], *Godwin Bursar* 1884.

IT is a matter of considerable importance under existing conditions, that architects should make themselves masters of the elementary principles and leading points in the practice of the warming of Public Buildings. It must be the experience of many that of the number of tradesmen who style themselves Heating and Ventilating Engineers, by far the large majority are densely ignorant of the most elementary facts bearing upon the work they are so eager to undertake, whilst a still larger majority are nothing more than middlemen, whose object is, by persistent advertising and push, to induce us to recommend our clients to purchase the goods they sell. The hardware trade generally, and especially that section of it which deals in all varieties of hardware necessary in the construction and fitting up of buildings, is represented by men who are no more than tradesmen or commission agents. A great majority of the self-styled heating and ventilating engineers neither make nor understand what they sell, and, trusting in a somewhat general deficiency of scientific knowledge in the architectural profession, they succeed by the employment of agents, clad in good coats and hats and gifted with fluent tongues, in persuading architects to swallow the most absurd statements and entrust them with important work. It is therefore our duty to endeavour to attain to some knowledge of the rudimentary principles and facts connected with the warming of public buildings, in order that we may be able to detect and boycott the quack and impostor, and entrust our clients' interests to men who are qualified by some amount of scientific knowledge to carry out the work we give them. But even in dealing with qualified and genuine heating engineers, it is very desirable that we should ourselves know something of the subject, as these gentlemen are apt to regard a building simply as a shell in which they can install their apparatus, and are quite oblivious of the claims of our artistic work to recognition. If we know something of the scientific principles and practical requirements of heating apparatus we can meet the makers with a firm front, and insist upon ducts, boilers, gratings, pipes, and other paraphernalia of the warming engineer, being placed where we want them, and not where it may seem good to the engineer to place them. We can, in short, be, as we ought to be, the masters of our buildings, and not the slaves of the increasing army of specialists with which modern science and modern engineering are ever too ready to invade the domain of the architect and spoil his work as an artist.

Under the term public buildings we may include all those in which a considerable number of people may be gathered together in one or more apartments; where the majority of those who use the building have no direct influence or control in its management; where, in short, their presence is only temporary occupation and not permanent residence. Thus the class of public buildings include churches, theatres, concert halls, and other places of assembly. It includes schools, hospitals, municipal offices, and other places for public business, buildings for the amusement, the instruction, and the sanitary benefit of the public.

The subject, it will be evident, is one of considerable complexity, inasmuch as at the outset there are a large variety of structures which can be and are properly classed under the term "public buildings," but which differ in many essentials. So that it is not possible to lay down any hard and fast rule as to the best system to be adopted in the warming of public buildings. Indeed, it may be said that in every case there are peculiar circumstances requiring peculiar treatment, as much as in any other department of our work as architects. We all know by our common everyday experience that it is the rarest possible occurrence for the plans or arrangements of any one building to be exactly applicable to another instance, and capable of being duplicated. I therefore propose to start from the basis of various means and methods suitable and applicable for the warming of public buildings; and in the course of our consideration of these means and methods we shall find that, in general terms, some are more suited to one class of building and some to another.

HOT AIR HEATING.

In the warming of public buildings it may be taken as an axiom that open fires are inadmissible, as a general rule, owing to the small distances to which heat can be economically transmitted by this means. The methods, therefore, which remain are, hot air, water or steam; these latter being used under methods most commonly described as low pressure and high pressure. The warming of buildings by means of currents of hot air is one of considerable antiquity, and still meets with favour where expense is of primary importance, as it certainly has a very considerable advantage in economy in first cost. In the cheapest systems the method is to heat the air by some description of calorigen or stove, from which the hot air passes into the building, and, after traversing the apartments to be warmed, is again brought back by return channels to the calorigen and re-heated. Such a method at once stands self-condemned in the opinion of all who value

* A lecture delivered before the Sheffield Society of Architects and Surveyors on 14th December 1897.

the health of those whom they are trying to warm; it need scarcely, therefore, be further considered.

An improvement on this method, although still open to objections on sanitary grounds, is the provision of a fresh supply of air to the calorigen, which, after being warmed, passes into the building and is carried away by whatever means of ventilation may be adopted. The objections to which this system is open are, that if the hot air has to pass through any considerable length of duct from the calorigen to the apartment to be warmed, there is a very serious loss of heat during the passage, and to compensate for this there is a general tendency to keep the surfaces of the calorigen at a sufficiently high temperature to raise that of the stream of fresh air to a high point to compensate for the loss. Now, in order that any apparatus or system of warming may be healthy, it is a cardinal point that the air must at no time be overheated or, in popular language, scorched. The evil effect of bringing air in contact with overheated surfaces, and thus scorching it, is of a complex character. It is frequently deprived of part of its oxygen by contact with the heated surface; it is almost always deprived unduly of its moisture, and what is probably most injurious, the minute and invisible particles of solid matter, largely organic, which ordinary atmosphere contains, are literally scorched and the air thereby vitiated. For a hot air system, therefore, to have a reasonable chance of being healthy in action, it is absolutely essential that the calorigen shall have a large heated surface of only a very moderate temperature. It is scarcely going too far to say that no calorigen whose heating surfaces in contact with the air are made of metal is desirable, certainly none in which those surfaces are of cast iron, can be regarded as absolutely unobjectionable from the point of view of hygiene. It goes without saying that any defect in the entirety of the calorigens greatly intensifies their evil effect, and calorigens of cast iron are peculiarly prone to lose their integrity. Hot air heating, therefore, can only be regarded as permissible where the heating apparatus can be placed in close proximity to the room to be warmed, and where an ample extent of heating surface at a moderate temperature can be arranged. Such systems are accordingly limited to a very small range of subjects.

The permissible maximum surface temperature at which a calorigen should work may be taken at 300° F., and the air should pass over such surface with sufficient velocity to prevent it being raised to a higher temperature than 120° F. at the moment of leaving the heated surface, and 90° F. at its entry into the room.

In America this system is largely used for warming domestic buildings, and in this country it has been employed to a considerable extent for warming churches and chapels. Although the first cost

of such apparatus may be less than that of other methods, our clients should be warned that in maintenance it is more expensive.

HOT WATER.

The warming of buildings by means of systems in which water is made use of for the transmission of heat from the generating point to the point of application, will next engage our attention. These systems are classed broadly under the general terms of low pressure and high pressure, the essential difference between the two being that in low pressure systems a large body of water is kept in circulation at a moderate temperature; and in high pressure systems a small body of water is kept in more active and rapid circulation at a high temperature. The terms "low pressure" and "high pressure" are not altogether accurate, as there frequently occur cases in the use of low pressure systems in which very considerable pressure exists, in part, at any rate, of the apparatus. It is therefore generally understood that by low pressure systems is meant those in which warm water is employed, and by high pressure systems those in which hot water is employed; but although it has been suggested that the terms warm water and hot water should distinguish the two classes, it is hardly necessary to make the change, as the meaning of the terms low pressure and high pressure is well understood.

LOW PRESSURE.

In low pressure, or warm water, systems the arrangement consists of a boiler and its furnace, from which proceed one or more lines of pipes to the highest point of the system, where it is open to the air, and from which the water returns along the desired course back to the boiler. As a result of the system being open to the air at its highest point, the water can never be raised to a higher temperature than boiling point (212°) and, as a matter of fact, generally does not exceed 150° F. Still, even without being allowed to rise to its maximum temperature, a considerable loss occurs by evaporation, and some means of supplying the waste must be provided. In some cases this is done by pouring in water by hand, in others by an automatic feed cistern with ball valve. It ought, however, to be borne in mind that even with an automatic filling arrangement regular and periodic inspection ought to be given, as we all know that ball valves cannot be entirely trusted. It is not absolutely necessary, although I consider it desirable, that the connection between the system of piping and the supply cistern should be of the full diameter of the circulating pipes—1 in. or 1½ in. connection is sufficient. In the arrangement of the supply system provision must, of course, be made for the expansion of the water on being heated. The amount of expansion which

should be allowed for an increase of temperature from 40° F. to boiling point is 4.66, or nearly 5 per cent., and this expansion must be provided for, whether the filling is automatic or otherwise. The pipes used for low pressure or warm water systems are generally either 4-inch cast-iron pipes or 3-inch wrought-iron pipes, and there is not very much to be said in favour of one over the other. The cast-iron pipes are generally somewhat cheaper, and slightly more effective—surface for surface—in the radiation of heat (the radiation from new wrought-iron surfaces being 93 per cent. of that from new cast-iron) but it is more difficult to make satisfactory joints, and from their larger size they are more unsightly. When radiators are employed for the diffusion of the heat the pipes may be of smaller diameter—1½ in. or 2 in. at the most being sufficient, except in very large installations.

In the arrangement of lines of piping in low pressure systems it is desirable that the ascending column of warm water should rise as directly as possible to the highest point, and that from this point there should be a regular, even, steady gradient of descent back to the boiler. It is possible to use to a limited extent what are known as dips in the gradient of the pipes: that is, to allow the pipe to drop, in order to pass an obstruction, such as a door-opening, and then rise again to somewhere near its former level. This practice, however, must be used with the greatest caution, to an extent which is regulated by the difference in the weight of the ascending and descending columns of water. This weight, of course, depends upon, first, the height of the column; and, secondly, the temperature. Wherever dips are used air cocks must be provided, and it is desirable to introduce them also at intervals in the line of piping, principally at the points where bends occur. Nothing is more alarming to the occupants of a building than the series of small explosions which appear to be taking place in some systems of hot water pipes. This is almost in all cases due to the presence of air in the pipes. One point about bends and angles, which makes for superior efficiency, is increase of radius. The standard elbow has a radius = depth of pipe + ½ in. This is small, and may well be twice or three times as much. The question of joints in low pressure warm water systems, especially of cast-iron, is a matter of some difficulty. It must be taken as a never-to-be-forgotten axiom that warm water pipes when in use are always on the move; during the rise of temperature expansion is taking place; during the fall of temperature contraction. The desideratum, which can scarcely as yet be said to have been reached, is a joint which is absolutely water-tight under all conditions, and nevertheless allows of expansion and contraction without impairing its efficiency. The oldest and simplest

form of joint is that known as the rust joint, formed by filling up the spaces between the spigot and socket with a mixture of iron filings and sal ammoniac. I fancy that modern craftsmen have largely lost the secret of making these joints; it clearly needs care and skill, as, in rusting, as we all know, iron expands considerably, and nowadays rust joints very frequently expand to such a degree as to split the sockets of the pipes. If properly made it is an effective but rigid joint, and when once set it is absolutely impossible to separate the pipes without breaking them. A modern substitute is Portland cement, but this is to be recommended only where the variation in the temperature of the pipes is moderate, as anything like a large amount of expansion and contraction quickly destroys the watertight properties of the joint. This also is a joint which, once made, is rigid, and does not admit of expansion and contraction. A fairly reliable joint can be made with tow and red and white lead. We then come to the class of movable or expanding joints. These are of varied forms. In principle they may be divided into two classes, those rigidly attached to the end of one pipe, allowing the other to move backwards and forwards; and those which allow, or are supposed to allow, both pipe-ends to move within the joint. The latter need careful and periodical examination, as one can never be sure that, on contraction taking place after expansion, the relative position of pipes and joints is maintained. As these joints almost invariably depend upon an indiarubber ring or flange for their watertight qualities, it goes without saying that their life is limited, as the durability of indiarubber, under such circumstances, is of no very great persistence. After experiencing a considerable amount of worry in the failure of so-called expansion joints, I have come to the conclusion that whenever there is anything like a considerable pressure, or head of water, say more than 15 feet, the most satisfactory arrangement is to use flange joints with copper expansion tubes in each long length. If wrought-iron pipes are used it is possible to allow for expansion and contraction by means of screw joints, and this is one point in favour of wrought-iron pipes. In supporting the pipes the principles to which I have already alluded must not be forgotten, and the brackets or clips which are used for such support must therefore permit of continual movement.

As the question of boilers concerns also the methods of steam heating, I will, with your permission, leave its consideration until I have given some account of the remaining systems.

The valves used in low pressure heating for the purpose of stopping off the current from part of the circulation system are usually one of three kinds—throttle, globe, and gate or slide valves. Of these the first is the cheapest, but not to be relied on for completely closing the flow; the

second answers well for steam heating, but offers too much obstruction to be entirely satisfactory for hot water; whilst the third is the most expensive, but the most trustworthy.

The advantages of the low pressure or warm water system of heating are that the pipes are kept at a moderate temperature, so that there is no chance of scorching the air or producing the risk of fire; the heat is maintained in the pipes for a considerable time after the fire has been allowed to die out; and the cast-iron pipe surfaces are slightly more effective in radiating heat than wrought iron. It also has more apparent safety than the high pressure system. I say apparent safety, because, although instances have occurred of explosions during testing, I believe that the high pressure system, when properly constructed, is quite as safe. And when failure does take place, it usually occurs—in the case of low pressure systems—in the pipes or joints, which, on breaking, cause considerable damage by allowing a large amount of water to flow out into the apartment, and cause considerable alarm by the amount of steam—or, rather, vesiculated water vapour—which passes off from the hot water. Failure in the high pressure systems, on the other hand, occurs usually in that portion of the piping coiled round the furnace, where damage from the water is not liable to be serious, and is also less in extent by reason of the much smaller body of water which the small pipes contain. The disadvantages of the low pressure system are, that the apparatus takes longer to get into full working order; the pipes are larger and more unsightly; the system requires for its successful working a straightforward arrangement of the pipes, and is not readily adapted to an intricate or involved plan.

The low pressure system, therefore, is best adapted for buildings of comparatively simple arrangement, and where the use of the building or apartment to be warmed and the consequent maintenance of the temperature is required to be continuous. It is, accordingly, almost invariably employed for heating greenhouses and conservatories, and is suitable for use in schools and other buildings similarly occupied.

HIGH PRESSURE.

In the high pressure or hot water system the general arrangements differ in almost every detail from those of low pressure. In the older—and still, in my opinion, most successful—method of using a high pressure system the arrangement consists of a circuit of small, strong wrought-iron piping, part of which, generally about one-sixth of the whole length of the piping, is coiled round the furnace, and at the highest point of the system a large, strong, cast-iron closed tube is fitted. This is called the expansion tube, and when the apparatus is cold it is practically empty

of water. The whole system is hermetically sealed, so that when the water is heated by the furnace its consequent expansion causes a compression of the air in the expansion tube, and this compressed air, by its reflex pressure on the water, prevents it from passing into steam. It can therefore attain a higher temperature than 212° F.

Partly owing to this high temperature of the water, partly from the pressure of the air in the expansion tube, and partly also from the small body of water contained in the whole system, a very rapid circulation is set up and maintained.

The pipes are usually $\frac{3}{8}$ to 1 inch bore, and about $\frac{1}{4}$ inch metal; and it is the usual practice to test each apparatus up to at least 1,000 lbs. pressure on the square inch, and I have seen them tested as high as 3,000 lbs. The joints are made in a very simple and effective manner. The end of one pipe has a smooth, flat end, and the adjacent end of the next pipe has a chiselled edge. These are drawn together by a collar with right and left hand screw, so that a very perfect and satisfactory joint is produced.

The actual conditions under which these systems work is not very completely understood, but, generally, from observations that have been made, it is safe to assume that the working pressure in the pipes ranges from 300 to 500 lbs. on the square inch, and the average temperature of the pipes may be taken at 250° to 350° F. The idea of the enormous pressure within the pipes is rather alarming; and, although I am quite convinced that there is no great probability of a dangerous explosion, still efforts have been made to minimise the pressure by the provision of a feed cistern, with a valve arranged to open when the pressure in the pipes rises to the specified figure, and a reflex valve to allow the water to return when the pressure falls. My personal experience of these feed cisterns and valves has been eminently unsatisfactory. The supposition and intention is that the valve will be opened at a pressure of, say, 400 lbs., and relieve the pipes, and, when the pressure is removed, will open the reverse way, and feed the pipes with water. We all know that valves are constantly liable to much derangement, and I have found that with these feed cisterns, although the pressure is relieved, the return of the water does not occur, so that, after a very short space of time, the water in the pipes is all boiled away, and then those round the furnace are, of course, quickly burnt through. I should therefore certainly advise that the older arrangement with expansion tubes should be preferred. Of course, like all engineering work, this apparatus has a limited life. What that limit may be depends upon circumstances. The shortest life which I have met in my experience is twelve years, with a heating apparatus in a church,

where it is not used more than two days a week during the winter months. When failure does take place, it occurs in the portion of the piping coiled around the furnace. It is not usually a dangerous explosion; one or more pipes crack, the water rushes out into the furnace, puts out the fire, and makes a great steam and smoke, which, though unpleasant and alarming, is not dangerous; and I have seen quite as alarming an effect produced with low pressure apparatus on a pipe cracking at the joints during use.

The advantages of the high pressure, or hot water, system are, first, that the apparatus is more quickly raised to its maximum point and efficiency; secondly, the pipes, being small, are less of a disfigurement, and thirdly—the most important of all—the system admits of considerable latitude in arrangement of dips, and departures from a straightforward line of piping. On the other hand, the heat in the pipes is not long maintained when the furnace is allowed to cool down; the pipes, from their high temperature, are somewhat liable to scorch the air in contact with them, and there is a greater possibility of danger from fire unless the pipes are carefully isolated from wood-work and other inflammable material. Although the pipes never rise to anything like a red heat, still continued exposure to the temperature at which they work may, and has, caused inflammable material, first of all to char, and afterwards to ignite. As regards cost, everything depends upon the conditions of each particular case. In one instance, low pressure may be cheaper to install, in another, high pressure; but, speaking in general terms, on a fair average of buildings suited to each, I think it may be accepted that low pressure systems are more expensive in first cost, and high pressure systems more expensive in maintenance.

The high pressure system, then, is particularly applicable to buildings which are to be used at intervals, as it admits of the maximum heating power being rapidly attained; but, on the other hand, it does not retain its heat for any lengthened period. It is also useful where the arrangement of the piping must necessarily be subject to a considerable amount of variation from the straightforward line. The high pressure system has been and may readily be, freed from one of its greatest defects by using the high pressure hot-water pipes simply as a means of carrying heat to the point of application, and there employing it to warm a larger body of water by which the actual diffusion of the heat is to be performed. In this respect it is on a par with steam heating, which can be and has been applied in a similar way. This diffusion of the heat, of which I have been speaking, can of course be arranged in various ways. A secondary heater, somewhat in the form of a small boiler, can be employed, from which a circulation on a low pressure system can be

arranged, or the secondary heater itself may furnish the surface from which the heat is to be diffused. A very good arrangement of this sort, which I once saw, was contrived with a large size copper tank, in the form of a hollow cylinder, the high pressure pipe passing through the water in this tank, from the surfaces of which the heat was given off, both by radiation from the external periphery, and by convection from the air passing through the interior of the hollow cylinder. Bearing upon the arrangement of such devices as these, comes the question of the protection of the surfaces of transmitting pipes from loss of heat during the passage. Indeed, in any arrangement of transmission of heat, whether by low pressure or high pressure hot water, or by steam, it will almost invariably happen that, in a portion at any rate of the line of piping, it is desirable that the heat should not be given off from the pipes. And in all such cases considerable economy in fuel will be obtained by a judicious clothing for protection of the pipes with a bad conductor of heat, so as to prevent the heat being dissipated before it has been transmitted to the point where it is wanted. A great variety of substances have been employed for the purpose of protecting the surface of heated pipes, and diminishing the loss of heat which would otherwise occur. The most satisfactory substance for practical work is undoubtedly hair felt with a backing of canvas. The relative amount of heat saved by the use of various substances is given in the following table:—

	Heat transmitted
Naked pipe	100
Two layers asbestos paper $\frac{1}{16}$ inch thick, 1 inch hair felt and canvas cover	15
Two layers asbestos paper, 1 inch hair felt	17
One inch thick hair felt	18
Asbestos moulded with plaster of Paris	32
Slag wool, fibrous	20
" " felted	21
Fossil meal (Kieselguhr) moulded	28

These figures hold good for an inch thickness of the material, and it should be noted that an increase of thickness does not mean a corresponding increase of protection; 6 inches of hair felt for example, reduces the loss to one-third only of that from 1 inch thickness.

STEAM.

We now come to the consideration of the employment of steam as a means of transmitting heat from the generating point to the locality of application. Steam may be used at either high pressure or low pressure, although in the amount of heat contained in high and low pressure steam there is but little difference, live steam at 70 lbs. pressure containing only about 3 per cent. more heat units than steam at 1 lb. pressure. The effective power, however, of high pressure steam is greater than is indicated by this difference in

the amount of heat contained. So that the thermometric heat of steam at a pressure of 70 lbs. is 316° , and at 1 lb. $216^{\circ}\cdot3$; and from this it results that in using low pressure steam an allowance of from 30 to 40 per cent. has to be made in the amount of radiating surface. In low pressure steam heating there are two systems of piping generally adopted, known respectively as the two pipe system and the one pipe system. In the two pipe system the rising main is carried to the highest available point above the boiler, and then laid with a fall of about 1 in 120; from this rising pipes are taken to the various coils and radiators, from each of which a smaller diameter pipe is laid into a return main, which is laid with a gradient towards the boiler, the highest point of the return main being below the water line, and no return pipes being connected to one another above this line. In this system it will be noted that each radiator has two pipes connected to it, from which the name of "two pipe system" is derived. In the one pipe system the best arrangement is to use a circuit pipe or main of good diameter, and carried to the highest point available, and laid with a fall of 1 in 120 until it again reaches the boiler, to which it is connected below the water line. This pipe forms the circulating pipe for the steam, and from it rising pipes are taken to the various radiators which convey the steam, and simultaneously return the water of condensation. This is a more economical arrangement, and at the same time, if properly fitted up and constructed, it is efficient and noiseless. It is also possible to supply the radiators by a single pipe taken from the top of the steam boiler, and so arranged that the water of condensation will flow back freely above the water line. This, however, is only advisable in comparatively small installations. It will be seen that in all these low pressure systems the water of condensation flows back by gravity into the boiler—either through the pipes conveying the steam to the radiators or by the relief pipes from same. This obviates the necessity for the use of steam traps.

Heating by high pressure steam is used in large installations, and where steam is generated for other purposes, the advantage being that the steam can be carried to any distance, and may be advantageously employed for use in heating by furnishing the heat necessary to maintain in operation a system of hot water heating in some particular part of the building. In this case the water of condensation is received by a trap and delivered either into a tank, from which it is returned into the boiler, or in some instances wasted.

Exhaust steam may frequently be used with advantage for heating purposes, as steam after being employed in an engine retains the greater portion of its heat, and, if not diffused or utilised for other purposes, may be employed for heating

without materially affecting the power of the engine. The exhaust steam, however, contains from 20 to 30 per cent. of water, and a considerable amount of oil or greasy matter which has been employed in lubricating. The use of exhaust steam has the disadvantage that the amount of heat frequently varies very considerably with the amount of work done by the engine, since the engine governor admits steam only in such an amount as is required to preserve uniform speed under varying conditions of work. For the successful employment of a system of exhaust steam heating the piping must be arranged so as to make little or no increase in back pressure on the engine, and to provide for using an intermittent supply of steam. Provision must be made for removing the oil from the exhaust steam, and a safety or back pressure valve should be employed, so as to avoid damage to the engine by any sudden increase of back pressure.

When high pressure steam is used it is not necessary to work the whole installation at the high pressure of the boiler. This may be as much as 120 lbs.; but that in the radiators and their feed pipes may be as little as 10 lbs. or even 5 lbs., reducing valves being inserted. Of these there are a great many forms in use.

Steam traps, also, are varied in form and principle. For small pressures a siphon trap may be used, but only for small pressures with convenience. Then we have float traps, bucket traps, and expansion traps. Of these, bucket traps are the most reliable, expansion traps the most sensitive. None of these will return the water to the boiler; for this, return traps are necessary, which contain an equalising valve admitting steam from the boiler when there is a sufficient accumulation of water in the trap.

RADIATORS.

In both hot water and steam heating the diffusion of heat at the points where it is particularly required may be effected either by the heat being given off from the surface of the circulating pipes or from an enlargement of this surface by means of coils or radiators. When coils are used the pipes forming the coils should rather be connected at their ends than form a continuous line of circuit with return bends, as in the latter case there is a considerable amount of frictional resistance to the flow of steam or water. For direct heating cast-iron radiators are now mostly used, and are made in a great variety of forms and shapes, more or less ornamental. The efficiency of direct radiation is increased by painting, decreased by varnish or enamelling. The only difference between hot water radiators and steam radiators is in the provision of a horizontal passage at the top of the former as well as at the bottom. This is necessary in order

that an air-cock may be used to draw off the air which accumulates from time to time. In some cases, with hot-water radiators, the water enters at the top, and is drawn off at the bottom; but in the majority, both the inlet and outlet are at the bottom of the radiator, and in point of efficiency there is little, if any, difference between them.

In the application of the heat which has been transmitted by means of the pipes, there are three methods which may be employed—styled generally, after American fashion, “Direct,” “Indirect,” and “Direct-Indirect,” or “Semi-Direct.” By direct heating it is meant that the radiator or radiating surface is placed in the apartment to be warmed in which the heat is diffused, partly by actual radiation, and, of course, partly by convection from the heated surface. In the indirect method the heating surface is outside the apartment to be warmed, and the heat from it warms a current of air which transmits and diffuses the heat through the apartment. In the “direct-indirect” method the heated surface is placed within the apartment, but a current of air from without enters, passes over the heating surface, and is diffused through the apartment. This is the most usual arrangement in England, though both the others are practised.

Direct heating is less costly than indirect, but there is, of course, the counter-balancing value of the ventilation in the latter case.

BOILERS.

Boilers for heating purposes differ primarily in the principle of their construction, according as to whether they are intended for the production of steam or simply of hot water. The essential difference between the two is that, in steam boilers, provision must be made for the quick liberation of the steam bubbles, and their storage in a reservoir or steam chest above the water line. This of course is not necessary in the boiler intended simply for heating water, although many types of boilers are, with very little modification, suitable for use with hot water or low-pressure steam. As the efficiency of a boiler for low-pressure steam or hot water depends very largely upon provision for a considerable amount of heating surface being exposed to the action of the flame, compared with the cubical contents of the body of water, we find that all the hot-water heaters now in use have their surfaces extended by various devices. The simplest and most rudimentary is the old-fashioned saddle boiler, but this is now almost obsolete. In boilers with extended surfaces these surfaces are arranged so as to provide a sinuous course for the products of combustion, thus depriving them to as full an extent as possible of the heat which they contain.

The greater number of cast-iron boilers now in use are made by joining together either horizontal

or vertical sections. These sections are joined in some instances by a screw nipple, in other cases by packed or faced joints, and are held together by bolts. Somewhat similar boilers are also made with vertical sections; but these are more particularly suitable for use in steam heating.

Tubular boilers are constructed either as fire-tube or water-tube boilers—that is, the tubes are sometimes arranged for the products of combustion to pass through, and in others for the water. As examples of fire-tube boilers the well-known Lancashire and Cornish boilers may be mentioned; as examples of water-tube boilers, the Babcock and Wilcox boiler, which is a good instance of the type. The water-tube boilers are especially suitable for high-pressure work; whilst for low-pressure and hot-water work, sectional boilers, either horizontal or vertical, are sufficiently strong, and, being made of cast iron, are considerably cheaper.

Horizontal tubular boilers, and a few hot-water boilers, require to be set in brickwork; but nearly all hot-water boilers now made require no setting, or, at any rate, only a portable setting, with perhaps a thin casing of iron lined with some non-conducting material. Every boiler, whether for steam or hot water, should be provided with a safety valve, of which there are various forms; but care should be taken that it is not possible for the engineer or boiler attendant to manipulate it so as to maintain a higher pressure than that prescribed. Steam boilers will, of course, also have water gauge, try-cocks, and steam-pressure gauge. For hot-water work it is very desirable that thermometers should be fitted to the boilers, so that the temperature of the water on leaving the boiler and its temperature on its return may be ascertained. These thermometers should be set so as to extend deep into the current of flowing water, and there should be no opportunity for the air to gather round the bulb.

As the efficiency of a boiler depends largely upon the stoking of its furnace, the grates should always be of the shaking or dumping variety. A well-stoked steam boiler will burn 15 lbs. or more of coal per square foot of grate per hour; a badly attended furnace only 3 lbs. A pound of good anthracite or steam coal will give about 13,000 heat-units in combustion; a pound of soft coal, 10,000 to 15,000, according to kind and quality. Of this a good furnace should utilise 70 per cent., but many are to be found that will give no more than 50 per cent.

In making calculations for the provision of heating power there are two points which require consideration—first, the amount of heat required, and second, the amount of heat to be obtained from various sources or apparatus. Heat may be measured either by quantity or by intensity. The quantity of heat is expressed in terms of the work

which a given amount of heat will do. The intensity of heat is measured by the more familiar process of consulting a thermometer. The amount or quantity of heat is, in this country, generally estimated by what is called a British thermal unit, or, shortly, a unit of heat. The British thermal unit is the amount of heat required to raise 1 lb. of water from a temperature of 32° to 33° F., and is a convenient term in which to make our necessary calculations.

The amount of heat required to warm any particular apartment depends upon the construction of the walls, floor, ceiling, windows, and doors, and upon the rapidity with which the air of the room is changed; for in order to warm any particular apartment to the desired temperature, all the parts must be raised to that temperature as well as the atmosphere of the room. Numerous careful experiments have been made by Pécelet and other experimenters as to the loss or diffusion of heat which occurs with various forms of construction of walls, windows, and other parts of the building. To tabulate all these experiments, or even all the results at which these investigators have arrived, would occupy more space than I have at my disposal, and would be unduly wearisome. I will therefore reduce these results down to simple and easily-remembered figures. For ordinary temperatures and pressures, 55 cubic feet of air, on the average, will absorb 1 heat-unit in being warmed 1° F. The heat-units, therefore, required for warming the air supplied and used by any ventilation arrangements can be found by multiplying the number of cubic feet of air by the difference of temperature desired between the internal and the outside air, and dividing by 55. As regards the structure of the apartments, it is, for practical calculations, sufficiently near accuracy to neglect all inside walls, floors, and ceilings, and consider only the exposed or outside surfaces. For these a fair average allowance would be 1 heat-unit for glass, and one quarter of a heat-unit for walls, per degree difference of temperature per square foot per hour. In the warming of rooms where no special means of ventilation are provided it will suffice to consider that the air of halls and corridors is changed three times per hour, that of rooms on lower floors twice per hour, and that of rooms on the upper floors once per hour, thus making fairly adequate allowance for the changes of atmosphere taking place by diffusion through the bounding superficies of the apartment and the opening and shutting of doors. Putting these rules into the shape of a formula, we should have

$$U = \left(\frac{N}{55} C + G + \frac{1}{4} W \right) T,$$

where U is the number of heat-units required per

hour, N the number of times the air is changed per hour, C the cubic contents of the room, G the area of the glass, W the area of exposed wall surface, and T the difference of temperature between the air in the room and outside.

The determination of the amount of heating surface required to furnish the necessary heat-units must be made with consideration of the arrangement of heating surface, its temperature, and the temperature of the surrounding air, and, where indirect heating is employed, the velocity of the air current.

Low radiators are more effective per foot of heating surface than tall ones, single radiators than those in multiple rows, horizontal pipes than vertical, small pipes than large ones.

The heat transmitted from direct-action surfaces varies in the amount per degree difference of temperature with the difference of temperature. To give the exact figures would require a series of tables; but, briefly, 1.5 heat-unit may be quoted as the amount per degree difference of temperature, with 60° difference for 4-inch horizontal pipe or 40-inch single radiator, and 1.8 heat-unit for the same with 150° difference.

Similarly, with indirect action, with a velocity of 2 feet per second, 3 heat-units per degree difference of temperature per square foot per hour would be given; with 20 feet velocity, 9 heat-units.

In making calculations for the warming of rooms which are to be occupied by a large number of persons, it must not be forgotten that they themselves do a good deal of warming to the extent of 191 heat-units each per hour.

Under certain adverse circumstances the radiating surface should be increased, for which an allowance should be made of:

10 per cent. where exposure is northerly or winds cold;

10 per cent. where building is heated in day-time only and location not exposed;

30 per cent. where building is heated in day-time only and location exposed;

50 per cent. where building is heated during winter months intermittently, with long intervals (days or weeks) of non-heating.

Inasmuch as it is within the common experience of us all that the amount of heat required to be supplied to any building varies almost hourly, the employment of thermostats tends largely to the economical working and increase of comfort in the use of warming apparatus, and we should do well to advise our clients to incur the slight additional expense of these valuable accessories.

The following are some of the tables referred to in the lecture:—

TABLE I.—LOSS OF HEAT FROM GLASS WINDOWS PER SQUARE FOOT PER DEGREE DIFFERENCE OF TEMPERATURE F. PER HOUR. (PÉCLET.)

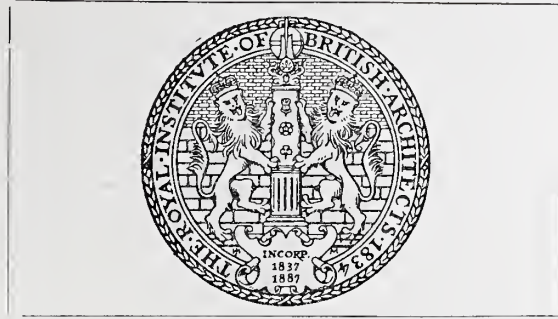
Height of window	3ft. 3in.	6ft. 7in.	10 ft.	13ft. 3in.	16ft. 3in.
Loss in British thermal units	0.98	0.945	0.93	0.92	0.91

TABLE II. LOSS OF HEAT THROUGH WALLS IN BRITISH THERMAL UNITS PER SQUARE FOOT PER DEGREE DIFFERENCE OF TEMPERATURE F. PER HOUR.

Thickness in inches	Péclet			German Government
	Single wall. Brick or stone	Hollow wall	Solid wall	Single wall. Brick or stone
4	0.43	0.36	0.12	0.68
8	0.37	0.30	0.065	0.46
12	0.32	0.25	0.045	0.32
16	0.28	0.21	0.033	0.26
18	0.26	0.19	0.031	—
20	0.25	0.18	0.030	0.23
24	0.24	0.17	0.029	0.20
28	0.22	0.15	0.027	0.174
32	0.21	0.13	0.025	0.15
36	0.20	0.12	0.020	0.129
40	0.18	0.10	0.018	0.115

TABLE III.—BRITISH THERMAL UNITS GIVEN OFF FROM CAST-IRON PIPES AND RADIATORS IN STILL AIR BY RADIATION AND CONVECTION PER SQUARE FOOT PER DEGREE DIFFERENCE OF TEMPERATURE F. PER HOUR. (PÉCLET.)

Difference of temperature.	Horizontal pipe of diameter			
	6 in.	4 in.	2 in.	1 in.
	Radiators equivalent to pipe with heights			
Degrees F.	40 in. double	40 in. single	24 in. double	12 in. single
10	0.55	0.62	0.66	0.85
20	1.11	1.25	1.32	1.72
30	1.18	1.34	1.42	1.84
40	1.24	1.40	1.48	1.92
50	1.29	1.46	1.54	2.01
60	1.33	1.50	1.58	2.06
70	1.36	1.54	1.63	2.12
80	1.40	1.58	1.67	2.18
90	1.43	1.63	1.72	2.24
100	1.47	1.66	1.76	2.28
110	1.51	1.71	1.80	2.34
120	1.54	1.74	1.84	2.39
130	1.57	1.78	1.88	2.44
140	1.61	1.81	1.91	2.48
150	1.64	1.84	1.94	2.53
160	1.66	1.87	1.97	2.57
170	1.69	1.91	2.02	2.62
180	1.72	1.94	2.05	2.65
190	1.75	1.98	2.09	2.71
200	1.78	2.01	2.12	2.76
225	1.87	2.12	2.24	2.91
250	1.97	2.23	2.35	3.06
275	2.07	2.34	2.47	3.22
300	2.17	2.45	2.58	3.37
325	2.27	2.55	2.70	3.50
350	2.37	2.67	2.82	3.66



9, CONDUIT STREET, LONDON, W., 7th May 1898.

CHRONICLE.

THE ANNUAL ELECTIONS.

Nominations to the Council.

The following nominations to the Council have been made by Fellows and Associates under the provisions of By-law 30, namely:—

DELISSA JOSEPH [F.]: nominated by Edmund Woodthorpe, W. Hilton Nash, T. E. Knightley, Richd. M. Roe, R. Creese Harrison, Benjn. Tabberer, and Lewis Solomon, *Fellows*.

JOHN TAVENOR PERRY [F.]: nominated by T. Hayter Lewis, E. B. P'Anson, Wm. Henman, and Fred. H. Reed, *Fellows*; Ch. Henman, Augustus W. Tanner, and R. Elsey Smith, *Associates*.

Nomination to the Practice Standing Committee.

The following nomination to the Practice Standing Committee has been made by Fellows and Associates under the provisions of By-law 49, namely:—

FRANCIS THOMAS WILBERFORCE GOLDSMITH: nominated by Henry L. Florence, *Vice-President*; Lewis H. Isaacs, Thomas Batterbury, J. Macvicar Anderson, Alfred Waterhouse, Ed. W. Mountford, Geo. H. Fellowes Prynne, *Fellows*; S. B. Russell, James S. Gibson, Harry W. Pye, and Frank J. Potter, *Associates*.

Suggested Limitation of Term of Office for Members of Council.

The following communication, headed "An Open Letter," is addressed by Mr. C. B. Brodie [A.] to the President, Council, and Members of the Royal Institute:

17 Southampton St., 25th April 1898.

GENTLEMEN,—Much has been written lately about the Council of our body having become a sort of close corporation, the members of which nominate each other constantly, and investigations I have made tend to show there is some justification for the remarks.

I do not intend to write to a public print anonymously, but to ask the Council to consider what I

write, and to publish it in our JOURNAL for the information of members generally. It is a matter which in no way concerns the outside public. It is purely domestic.

Taking the nomination list just issued by the Council, I find that 25 out of the 38 members of Council nominated are "starred" as being members of that body. This should show us 26, because Mr. Pratt is now a member, whilst Mr. Hall, Mr. Pite, Mr. Gibson, and Mr. Stokes have all previously served, so that brings the total to 30 old members of Council nominated out of 38 names on the list of ordinary members.

I should not wish to be understood as taking the slightest objection to any name on the list. I merely say that the facts show that there is reason in a complaint made, and made more freely perhaps than the Council are aware of.

To a large number of members it seems a great pity that there is not in the By-laws a limit stated to the time a member may remain on the Council. Such a limit exists in almost all Societies with which I am acquainted. Take the Architectural Association (London) as an example, a Society the rejuvenescence of which is becoming proverbial, whilst it stands for all that indicates life, energy, and progress in our profession. How is this result attained? Largely, I believe, because the By-laws allow only a certain number of the old Committee to be re-elected each year, and provide that no member may sit on the Committee as an ordinary member for more than three successive sessions. This would probably be too short a term for the Institute. But that some limit should be put I am convinced. Take again the nomination list just issued, and among those nominated I find that one has been a member of Council for 14 consecutive sessions, another for 13, two for 12, two for 11, two for 10, two for 9, two for 8, and one for 7—all consecutive sessions. One member now renominated for a seat on the Council was on it as long ago as 1881.

Would it not be better for the Council to propose a limit such as that suggested rather than that such a proposal should come from outside? The By-laws are now being amended, and the Lords of the Privy Council approached to approve the amendments. The end of By-law 27 added also to By-law 29 would probably meet the case, and the amendments already passed could easily be held over until next Session, and the whole approved together.—I am, yours obediently,

(Signed) C. H. BRODIE.

An Invitation from the Belgian Society.

The following letter, addressed to the President and members of the Institute, has been received from the Société Centrale d'Architecture de Belgique:—

MESSIEURS,—Nous avons l'honneur de porter à votre connaissance que notre Société organisera,

du 13 au 21 août prochain, une excursion en Champagne et Bourgogne (France). Elle compte visiter Reims, Châlons, Troyes, Langres, Dijon, Avallon, Vézelay, Auxerre et Fontainebleau.

Le retour se ferait le dimanche 21, avec arrêt d'une partie de la journée à Paris.

Le prix de l'excursion sera d'environ 250 francs, tous frais compris (frais de voyage en seconde classe au départ de Bruxelles, frais d'hôtel, 1^{er} et 2^e déjeuners, dîner, vin compris, voitures et entrée dans les monuments).

Dans le but d'affermir les relations de bonne confraternité que nous avons avec tous nos confrères de l'étranger, notre assemblée a décidé d'admettre à cette excursion les membres de nos Sociétés correspondantes qui voudraient y participer et bénéficier ainsi des avantages qui nous sont généralement accordés.

Nous venons vous faire part de cette décision, chers confrères, et vous prier de la porter à la connaissance des membres de votre Société.

Les avis d'adhésion devront parvenir à notre Vice-Président, M. MAUKELS, Rue Ortélius 5, à Bruxelles, avant le 15 juin prochain. Des itinéraires détaillés, ainsi que les divers enseignements, prix, parcours, logement, etc. . . relatifs à l'organisation du voyage, seront alors envoyés à ceux de nos confrères qui auraient manifesté le désir de prendre part à l'excursion, et les adhésions définitives devront être parvenues à la même adresse que ci-dessus le 15 juillet au plus tard.

Nous vous prions d'agréer, chers confrères, l'assurance de nos meilleurs sentiments.

Le Vice-Président, Le Président,
(Signed) G. MAUKELS. (Signed) DUMORTIER.
Rue Ortélius 5, Bruxelles : le 26 avril 1898.

The late Augustus Laver [Hon. Corr. M.].

The death is announced, on the 27th March, of the distinguished American architect, Augustus Laver, at the age of sixty-four. Mr. Laver, who was by birth an Englishman, commenced his professional career in Canada, where he was the author of the Parliament Buildings at Ottawa. Later he entered upon practice in the United States, and designed many notable buildings, the New York Capitol at Albany and the City Hall of San Francisco being amongst the most important. Mr. Laver had been an Hon. Corr. Member of the Institute since 1879.

A Donation from Signor Giampietri [Hon. Corr. M.].

At the meeting of the 18th April the Chairman drew the attention of members to a charming water-colour drawing, lately on exhibition at the Dudley Gallery, of the Stylobate of the Temple of Antoninus and Faustina, Rome, the work of Signor Settimio Giampietri, one of the recently elected Hon. Corr. Members, and presented by him to the Institute.

REVIEWS. LXXII.

(193)

SPECIFICATIONS.

Specifications in Detail. By Frank W. Macey, Architect. 80. Lond. 1898. Price 21s. [Messrs. E. & F. N. Spon, 125, Strand.]

The epidemic of writing on the subject of specifications increases in strength, and it is to be hoped that the results may be satisfactory. There is indeed room for improvement. The slipshod English, the disorder, the reappearance of allusions to the same item in various parts of the document, the recurrence of stock phrases like a refrain, and the fond device of describing things that will never be supplied, are some of the curious characteristics of the ordinary specification. Whether a royal road to specification writing can be devised may be doubted, and it is certain that a specification produced by the perfunctory adoption of ready-made descriptions is unworthy of comparison with that which is the result of the systematic and thorough study of construction. Without this and the judgment which only such study can ensure, no architect can hope to specify work in a rational way, preserve a reasonable consistency in the *degree of detail* of his descriptions, nor as to the *relative quality and finish* that he may require in the various parts of the same building.

To know exactly what he wants, to describe it precisely and see that he gets it, are the qualifications which the specification writer of the future may possibly possess. There are indications, legal or other, that the general public is becoming more critical of the obligations of the architect to his employer, and one of these obligations is a thorough knowledge of his subject when he writes a specification.

The method of this book is not new—it is that of *Wightwick's Hints to Young Architects*; but it is more comprehensive. Each trade is dealt with in the usual order, and is illustrated by numerous marginal sketches. Whether they are all necessary is open to question. Surely no one with technical knowledge above that of the mere novice requires a sketch of a drawer-knob or a cup-hook. The clauses of each trade are interspersed with items of information about materials and construction such as are to be found much more comprehensively stated in the text-books. The student who rejoices in the appearance of a book of over six hundred pages ostensibly on specifications, will be reminded of the proportion of sack to bread in Falstaff's tavern bill. The artless simplicity of some of the statements is refreshing—"lignum vitæ" (a very hard wood); "there is no frieze-rail to a four-panel door." The use of the word "provide" in two different senses in this book is objectionable. Mr. Rickman, in his Paper on Specification Writing, says:

"'Supply' is a term which, if used in place of the usual words 'provide' and 'fix,' will increase the clearness of the specification and avoid some prolixity."

The author might with advantage have given more directions for the *order* of a specification—the prime difficulty with the student. In a long specification adherence to the classification by trades is a lucid and convenient custom. The specification of stone templates in the carpenter is novel, and is not an improvement.

Too little use is made of the preambles to trades. General clauses at the head of each trade may be used to save much subsequent writing. In the items of joinery grounds are described time after time. The author adopts the practice of numbering each clause, but begins with No. 1 in each trade. The prime object of numbering the clauses is the facility of indexing or cross-reference; numbers repeated defeat that intention. There should be only one series of numbers for the entire specification. Of the use of numbers to designate doors, windows, or rooms, of tabulations, of the convenience of describing various things by reference to the points of the compass, the author gives no hint.

The use of provincial terms, like "raglet" and "tingle," is to be deprecated. Nor is the introduction of novel conditions, such as the following, to be commended:—

The contractor shall at his own expense make copies of all drawings, specifications, and details required for the work; due facilities will be afforded for this purpose.

The timber for joiners' work to be obtained from an approved London (or other port) merchant, who will give a guarantee as to its having been in stock four years, and that it will not shrink when fixed. The contractor is to obtain this guarantee in such form as the architect shall require, but this guarantee will not relieve the contractor of his liability in any way for the quality of the material.

In order to test the weight of the sheet lead used the architect is to be at liberty to cut out samples from any piece of the lead work *after having been laid*; the contractor is to make allowance in his estimate for such tests, and is to replace such damaged work with entirely new sheets.

Vexatious clauses such as these always increase the cost of the work; the absurd conditions in the form of contract of the London County Council (some of which are now abandoned) are well-known illustrations. To make the "report on the sanitary condition of a house" resemble other reports of the kind, it should not only describe faults but suggest remedies. The description of the nature of the soil is not a matter for a specification, nor a responsibility which the architect should adopt. The numbering (or lettering) of every manhole is in accordance with the best practice, but it is unnecessary to describe each one separately. The description of terra-cotta is inadequate. In the mason no allusion is made to the various methods of defining the sizes of stones. In the specification of rubble work we see no

mention of brick tacking or of the common and convenient practice of building the angles, inside of a rag-stone wall, of brick. The mixing up of the descriptions of carpentry and joinery is inconvenient, and makes reference difficult. There are no suggestions as to the order of specifying joinery, and for a large building this is an important consideration. Our venerable acquaintance—the stereotyped preamble to the carpenter's specification—reappears; a description of materials which is not likely to be either supplied or insisted on. However, the definite limitation of the size of knots is a step in the right direction.

Familiarity with the ordinary principles which regulate the sorting of the qualities of timber and deals by the shipper as to shakes, waness, knots, and sapwood are worthy of the attention of the architect. It is difficult to understand what is the object of specifying the pitch of roofs (p. 393). In the plasterer we have the clause, "To be best long black (or white) bullock's hair." "White" is original; "black" should be "back," as being longer. The diagram of gaspipes (p. 461) is not in accordance with ordinary practice, a horizontal branch from the rising main usually supplies two floors—pipes rising from it for one floor, and dropping for the other. The description of British polished plate is uncommon, " $\frac{1}{2}$ thick full" (or bare) should be "about $\frac{1}{4}$ " thick"; if it is all selected of one thickness, the price is increased.

The book, despite its faults, contains a great store of information, especially about domestic fittings, such as is not to be found in the ordinary books on construction. It is on the whole a very creditable example of care and industry. It may be recommended to every architect and surveyor as a valuable book of reference. The book, as a trade production, is well done. There is a copious index; the binding and printing is worthy of the well-known publishers who have produced it, and the success which it deserves may be confidently predicted.

JOHN LEANING, F.S.I.

MINUTES. XIII.

At a Special General Meeting held on Monday, 2nd May 1898, at 8 P.M., Mr. H. L. Florence, *Vice-President*, in the Chair, with 12 Fellows (including 7 members of the Council), 15 Associates (including 1 member of the Council), and 1 Hon. Associate, the Minutes of the Special General Meeting held Monday, 18th April 1898 [*ante*, p. 336], were taken as read and signed as correct.

On the motion of the Chairman, seconded by Mr. W. M. Fawcett, *Vice-President*, it was

RESOLVED, *nem. con.*, that the resolutions of the Royal Institute concerning the clause to be added to By-law 9, and the alterations in By-laws 30 and 31, passed at the Special General Meeting of the 18th April [see Minutes, *ante*, p. 336], be confirmed.

The Special General Meeting then terminated.

At the Sixty-fourth Annual General Meeting (the Thirteenth General Meeting of the Session), held Monday,

2nd May 1898, at the conclusion of the above-mentioned Special General Meeting, Mr. H. L. Florence, *Vice-President*, in the Chair, with 7 Fellows (including 15 members of the Council), 12 Associates (including 1 member of the Council), and 1 Hon. Associate, the Minutes of the Ordinary General Meeting held Monday, 18th April 1898 [p. 336], were taken as read and signed as correct.

The Hon. Secretary announced the decease of the following members:—Augustus Laver, *Hon. Corr. Member* (San Francisco), elected in 1879, and Walter Seckham Witherington, *Fellow*, elected in 1881.

The following Associate, attending for the first time since his election, was formally admitted, and signed the register—namely, William Henry Stanbury (Gibraltar).

The Chairman having asked the Meeting to give its approval to a recommendation from the Council to admit the Aberdeen Society of Architects to alliance with the Institute, it was

RESOLVED, that the Royal Institute of British Architects do admit to alliance therewith, under the provisions of Section XVII. of the By-laws (Nos. 77–81), the following Society—viz. "The Aberdeen Society of Architects."

The Chairman announced that Mr. Arthur Baldwin Hayward had passed the Statutory Examination held by the Institute on the 21st ult., and had been granted a Certificate of Competency to act as District Surveyor under the London Building Act.

The Report of the Council for the official year 1897–98, a copy of which had been previously issued to every member resident in the United Kingdom, having been submitted and taken as read, its adoption was formally moved by the Chairman, and seconded by Mr. B. Ingelow [*F.*]. By direction of the Chairman the Secretary then read the following report of the Auditors:—

To the Royal Institute of British Architects.

GENTLEMEN,—We have examined the vouchers, books, and accounts generally of the Institute for the year ending 31st December 1897, and it is with great pleasure that we are able to report our entire satisfaction. The books have been carefully and accurately kept, and an efficient control over the expenditure has been maintained. We have examined and verified the several securities, and note that the Certificate of the £40 Madras Railway 4½ per Cent. Stock, purchased on the 3rd December 1897, has not yet been delivered by the bankers.

The year's working shows a net profit of £1,116 1s. 11d., this being £516 1s. 11d. in excess of the estimated profit. The total cash balance of ordinary funds in the hands of the bankers on the 31st December 1897 was £1,568 17s. 8d. In addition to this the invested funds have been increased by donations and transfers from income to £4,970 0s. 6d. The Institute therefore occupies a better financial position than it has done for some years past.

We desire to express our cordial appreciation of the services rendered to us by Mr. W. J. Locke, Mr. H. G. Tayler, and the other officials of the Institute.

EDMUND WOODTHORPE } *Hon.*
15th April 1898. OWEN FLEMING } *Auditors.*

A discussion on the Annual Report ensued [see *Appendix*], in the course of which Mr. Max. Clarke, Hon. Secretary of the Science Standing Committee, asked for an explanation of the omission from the printed Report of that Committee of a clause relating to the publication in book form of the results of the Brickwork Tests, as contained in the Report originally sent in to the Council; and moved that such clause either be inserted in the printed Report, or the words "Revised by the Council" be added after the heading thereof. The Chairman, members of the Council, and members of the Science Committee having spoken on the matter, and the Chairman having pointed out that some

misapprehension existed thereon, it was ultimately agreed, on the motion of the Hon. Secretary, seconded by Mr. Matt. Garbutt, that a footnote should be added to the Report stating that the Council would consider the advisability of publishing the results of the Brickwork Experiments in the form proposed by the Committee. The question of the adoption of the Report was then put from the Chair, and it was

RESOLVED, *nem. con.*, that the Report of the Council for the official year 1897-98 be approved and adopted.

The lists of attendances of members at the several meetings of the Council and Standing Committees during the official year having been submitted and taken as read [see *Supplement* No. 13], the following members were appointed scrutineers to direct the election of the Council and Standing Committees for the ensuing year of office, and report the result thereof to the Business General Meeting of the 6th June—namely, *Fellows*: H. P. Burke Downing, John Hebb, F. Hooper, Delissa Joseph, Zeph. King, Hugh Stannus, and others to be appointed by the Council. *Associates*: W. A. Forsyth, H. Hardwicke Langston, F. W. Marks, H. A. Satchell, E. Wimperis, and H. A. Woodington.

On the motion of the Hon. Secretary, a vote of thanks was passed to Messrs. Edmund Woodthorpe [*F.*] and Owen Fleming [*A.*] for their services as Auditors of the past year's accounts; and Messrs. Zeph. King [*F.*] and F. W. Marks [*A.*] were nominated Auditors for the ensuing year.

The Statutory Board of Examiners were re-appointed as follows:—Messrs. Lewis Angell, Francis Chambers, Professor Banister Fletcher, Ebenezer Gregg, F. W. H. Hunt, E. B. P'Anson, Professor Kerr, J. Douglass Mathews, Lacy W. Ridge, Professor T. Roger Smith, Messrs. Benj. Tabberer and T. H. Watson.

The proceedings then closed, and the Meeting separated at 10 P.M.

APPENDIX.—DISCUSSION ON THE ANNUAL REPORT.

The motion for the adoption of the Report having been put from the Chair, and seconded by Mr. Ingelow,

Mr. JOHN HEBB [*F.*] directed the attention of the Council to the comparatively small number of members as shown by the Report—598 Fellows and 1,001 Associates, and impressed upon the Council the necessity of offering some inducements to architects to join the Institute. Considering the number of practising architects in the United Kingdom, it was most regrettable they should have so few on the Institute books. The alterations the Council had made in the premises might attract country members, but it was not a very hopeful view. The Metropolitan members constituted a very large number, and, great as the difficulties were, he submitted that some effort should be made to induce outsiders to join. He congratulated the Art Standing Committee on their courage in protesting against the vulgarisation of the houses on the Duke of Bedford's estate. The Society for the Protection of Ancient Buildings had been urged to protest, but hesitated to do so, feeling that the houses in Russell Square and the neighbourhood could scarcely be regarded as ancient buildings. Although, unfortunately, the Art Committee's action had been unavailing, yet the protest had been made, and might at some future time bear fruit. There were certain corporate bodies to whom some similar protest might be addressed, notably those of Gray's Inn and Lincoln's Inn. New Square, in Lincoln's Inn, had lately been "beautified" by having the fronts of the houses coloured and the character of its buildings considerably altered. The buildings at the beginning of this century, though not of great artistic value, were certainly of historic interest.

Those in Russel Square, particularly, ere well built, well proportioned, and had an extremely agreeable appearance; they possessed, too, an historic value which ought to have preserved them for future generations.

Mr. WILLIAM WOODWARD [*A.*] desired to make a few observations on the Report, which he hoped would be taken, as he intended them, in the nature of friendly criticisms. On page 35 (giving the pages as in the *Supplement*) he noticed that the comparison with the number of members of the previous year, which was usually given, had been omitted from the Report. He thoroughly agreed with Mr. Hebb that it was desirable their numbers should be increased. In 1898 there was a total of 1,652 members, as against 1,643 of the preceding year, showing a net increase of nine. Eight Fellows unfortunately had died, and eight had been elected, so that practically the number of Fellows remained as before. On page 36 it was stated that the Board of Examiners had prepared a new syllabus of the examinations. He had not been able himself to compare the new syllabus with the old one, but he had read in the *JOURNAL* for January 8th, 1898, what was certainly an expostulation by Mr. Arthur Cates with reference to the revised syllabus. Mr. Arthur Cates, as all knew, had given a great deal of time, labour, and trouble to these examinations, and was thoroughly aware of all the details connected with the syllabus. He (Mr. Woodward) should take Mr. Cates's opinion that it was in many instances undesirable to alter the syllabus, and that the new syllabus was not so satisfactory to students as the old one. With regard to the Royal Gold Medal (a subject upon which he had observed a few weeks ago) he trusted that in future years the Institute would take more interest in the subject, and relieve the Council of what he was sure they desired to be relieved of, namely, the responsibility of selecting and nominating the recipient for the Royal Gold Medal. With reference to the Festival Dinner, on page 37, the accounts showed a deficit of a sum of £24, which was to be regretted. With regard to the extra floor to be taken over from the Architectural Union Company, the rent was stated, but they were not told whether this included any proportion of the rates and taxes, or whether it included insurance, or what rent was to be obtained from the sub-letting of the two rooms. The tea and smoking room, he had no doubt, would be well patronised by younger members; but elderly gentlemen would not be willing to mount to the second floor to find a smoking room when, in the immediate vicinity of the Institute, there were properly appointed smoking rooms on the ground floor. Another point connected with this matter: had the Council the power to take this lease for £175 per annum without consultation with the general body? Clause 17 and clause 22 of the Charter vested the property in the Royal Institute, and he was not sure that the Council were justified, or had the power, to enter into an expenditure of this kind without the previous sanction of the general body. Coming to the Report of the Art Standing Committee, with regard to the new Government Offices in Whitehall, he had on a previous occasion protested against plans being placed before the Select Committee of the House of Commons, which had been described and accepted as plans of the Royal Institute, when, as a matter of fact, they were only plans of individual members. Another point with respect to the new Government Offices: reference had been made at a previous meeting to the negotiations between the Institute and the Government, and although he had been very properly informed that inasmuch as those negotiations were of a confidential character, it would be impossible to divulge them, still some reference should have been made in this Report as to whether or not the communications were still confidential. After the speech of the Duke of Devonshire at the Royal Academy Dinner, last Saturday, he apprehended they were not confidential, because the Duke was reported as saying: "I am happy

to be able to state that we have been fortunate enough to secure the assistance and the advice of Professor Aitchison, President of the Royal Institute of British Architects, and a member of the Royal Academy, in regard to the great building scheme now under the consideration of the Government, and I can only express the hope we may succeed, as it is our intention to succeed, in erecting a series of buildings which shall not be unworthy of the site on which they are to be erected, or for the purposes to which they are to be devoted." That was a somewhat ambiguous observation, which might mean one of three things. It might mean that the President was to be employed by the Government in the ordinary way as an architect; it might mean that the President was to be empowered to employ another architect; or it might mean the President was to assist the Office of Works as to the designs. He would only repeat that if the President was empowered to employ another architect on the design of one or either of the buildings, that he would employ a member of the Institute. With regard to Russell Square, he differed entirely from Mr. Hebb. The action of the Art Committee opened the door to very serious complaint, and led him to inquire where it was to stop. Everyone knew that there was a large hotel to be built in Russell Square by Messrs. Maple, which had already disfigured one side of the Square. There were certain elevations to which this paragraph probably referred, which had been altered from their original character to a more modern style. But he maintained that the Institute had no right whatever to interpose in questions of that kind between a freeholder and his architect. If the Duke of Bedford had listened to the protest, and had thought the Institute was justified in criticising the designs for these elevations, the result would have been that his architect would have been dismissed; and he ventured to think the architect would have had a very clear action for libel against the Institute. Where was such a thing to stop? One might not like the elevations in Russell Square; another might not like the elevations in South Kensington; someone else might not like the elevations in a third locality; but was that any justification for entering a protest of this kind, interfering between a client and his architect? For, although the Duke of Bedford was a large freeholder, they were equally as little justified in interfering in the case of any single building. The alterations were still going on; fortunately the Duke had not taken any notice of their protest. Touching the Report of the Practice Standing Committee, the question of professional charges was a very important one, and great danger of litigation arose from it, and he was glad to see that the Practice Committee had taken it under their charge. But he regretted that a period of over four months had elapsed since the Committee sent the report to the Council. He had on a former occasion accused the Council of procrastination, and he thought that in a case of this sort it would have been very desirable if they could have seen their way to expedite the question. Then there was a reference to the Draft Bill of the London County Council for amending the London Building Act. At the meeting on 29th November 1897 he had suggested the Council's sending out a circular, inviting opinions from architects as to the working of the Building Act, and his suggestion had been acted on, he having received a circular on the 17th December following. The Practice Committee say in the concluding paragraph of their Report that "As the Bill was already before Parliament, it was decided to confine the attention of the Committee for the moment to the consideration of the points raised by the Draft Bill. This was considered in detail, and a report thereon sent to the Council." But at the time the circular was sent out the matter was not before Parliament, and therefore the Council had given away the whole object they had in view by not calling a meeting together and sending in a report to the

London County Council, as was originally intended. Much good might have resulted if the views of the Institute had been brought before the Government. With regard to the Report of the Science Standing Committee, they all agreed that the Institute was deeply indebted to the gentlemen who had taken such pains in conducting the brickwork experiments. Definite and most useful information had resulted from those tests. He trusted the Institute would see its way to continue not only the tests of brickwork, but also tests of building stones they were in the habit of using. With regard to the financial statement, it gave him the utmost satisfaction in saying that the Council and the officers were to be congratulated to the full for the balances shown. The investments during the year amounted to over £1,100, and a balance of £1,000 was estimated for the current year. That was a state of things which had not occurred in the Institute for many years, and was a very happy augury for the future. He would endorse a suggestion once made by Mr. James Brooks, that the balance—which, he hoped, would go on year after year, and perhaps be considerably increased in the future—would be devoted to a fund which should result in the purchase of their own premises and the erection of a building for the Royal Institute of British Architects, in the same way as had been done by the Surveyors' Institution. He was very glad indeed to endorse the expenditure which had been made in remuneration to Mr. Tayler and other officials for the efficient way they had acted during the absence of their lamented Secretary, the late Mr. William H. White.

The HON. SECRETARY, remarking on Mr. Hebb's suggestion that the Council should do something to encourage members of the profession to join the Institute, reminded Mr. Hebb that Mr. Penrose, at the end of his term of office as President, had suggested steps being taken to bring the claims of the Institute before architects who were not members; and, in consequence, a Committee was appointed to consider the matter. The Committee, which included many leading members of the profession, held numerous meetings, and every possible suggestion that could be put forward to induce gentlemen to join the Institute was considered by them; and besides taking the views of members in London, suggestions were invited and obtained from the Allied Societies. The result was the series of recommendations brought before the Institute last year, and passed, which involved the alteration of one or two By-laws, some of which alterations had been confirmed only that evening. The Committee had sat for a year and a half, and had done all they could to get suggestions; but, if Mr. Hebb could propose any means by which members of the architectural profession could be induced to join their body, they would be grateful to him. As a matter of fact, there were a great many architects in good practice who did not take the trouble to join at all, much less become Fellows. He could not help feeling that these gentlemen were somewhat wanting in *esprit de corps* or professional brotherhood. This was not the case with the institutions of other professions.

Mr. E. W. HUDSON [A.] thought that if there was any way by which members who had already joined could be induced to attend the meetings, a great point would be gained. When foreigners, for instance, and others from a long distance, came to read Papers to the Institute, it was not much encouragement for them to see rows of empty seats. Besides that, it meant loss of prestige for the Institute. Perhaps the alterations and improvements in the premises, with the temptations of the smoking-room upstairs, would make members better acquainted with the premises. He hoped it would have some effect.

Mr. OWEN FLEMING [A.], Hon. Secretary of the Art Standing Committee, said with reference to Mr. Woodward's remarks on the new Government offices in Whitehall, that the Art Committee simply suggested to the

Council what occurred to them as desirable, and the Council modified and acted upon those suggestions. Mr. Woodward was not quite accurate in his view that the Select Committee smiled and bowed them out, as he would show by running over the different suggestions. The Select Committee of the House of Commons which sat previously to the last Select Committee were hesitating between a parallel line at the southern end of Whitehall, and an angular line—a line that ran across from the corner of the existing buildings to the corner of Great George Street. The Institute advised parallel lines, which the Government adopted. The Institute, again, advocated the Great George Street site, extending right through from Whitehall to St. James's Park. The Government decided that any extension beyond the present scheme should be in that direction. The Institute rather objected to the proposed works at Downing Street, and those works have been postponed for the present. The Institute objected to the triangular building which was proposed to be erected along the line of the Mall, to contain the Office of Works, the Civil Service Commissioners, and the Office of Woods. That building had been abandoned at present. The Institute suggested the setting back of the buildings between the Admiralty and Drummond's Bank, the removal of Drummond's Bank, and the widening of a portion of Whitehall so as to bring it into some relation with the lower portion of Trafalgar Square. The Government, without expressing any adverse opinion to the proposal, suggested it was really a matter for a metropolitan improvement. He thought they were possibly right. The only case in which the Government decided against the Institute was in the case of the War Office, and as to that time would show whether the Government or the Institute were right. With regard to Russell Square the Art Committee were absolutely unanimous in their suggestion, and the different views expressed by Mr. Hebb and Mr. Woodward suggested that there were differences of opinion within the walls of the Institute on that point. With regard to the Science Standing Committee, he was anxious to know what was being done as to the collation of the results of the brickwork experiments. He was not clear whether the matter was in the hands of the Council or the Science Committee, but the information would be very useful if it were before the Institute. He would suggest, too, that there was great need of information as to the strength and the making of bricks; and now they were in better funds, would it not be possible to make a grant of £50 or £100 a year to the Science Committee for original investigations? If the thing were done systematically on a scientific basis very useful information would be obtained upon points of construction upon which nothing or very little was known.—Speaking on the question of increasing the number of members of the Institute, the speaker said that Associates felt that they had not very much voice in the Institute as a whole, but if a few Associates and a few Fellows could get together and talk over this question frankly and with a desire to come to some sort of agreement, he was not quite sure that the Institute as a whole would not benefit.

Mr. H. HARDWICKE LANGSTON [A.] suggested, with regard to the question of bringing into the fold those members who liked to stand aloof, that if the Council were to arrange among themselves that gentlemen who had been members of the Council should retire after some five years and give place to others, the profession generally would have more interest in the welfare of the Institute. The Institute should attract all who were members of the profession; it should be the recognised centre—a body which should speak with effect—and it did not tend to give it that quality when gentlemen remained year after year as if they had a permanent right to a seat upon the Council. He had been an Associate for many years, but there was nothing that inspired him to seek to

be a Fellow, because he could not see how this reform should take place unless it came from the Council itself. He begged humbly to submit that members' term of office on the Council should be limited to five years, and that they should then retire as a matter of course.

The Hon. SECRETARY suggested that if Mr. Langston had become a Fellow years ago instead of remaining an Associate, he might probably have been a member of the Council by this time. But if the great bulk of members remained Associates they had little chance of becoming members of the Council. It rested with members to propose gentlemen in addition to those nominated by the Council. If members exercised those rights they would probably very likely get in; but the Council naturally nominated those they thought best able to do the work.

Mr. MAX CLARKE [A.], Hon. Secretary of the Science Standing Committee, said he should like to answer Mr. Owen Fleming's remarks as to the Science Committee, more particularly as in the Report of the Committee a clause which would have answered Mr. Fleming's question had been omitted. The present state of affairs with regard to the publication of the tests of brickwork stood thus. Mr. Dibdin had written offering to publish the whole of the series of brickwork experiments in a book he is compiling on mortars. Mr. Dibdin's offer was considered by the Committee, and on the 17th of March the Hon. Secretaries of the Committee wrote to the Secretary of the Institute as follows:—"We laid your letter of the 9th instant before this Committee on the following day, and while it is very satisfactory to find the labours of the Committee so well appreciated by such an authority as Mr. Dibdin, they are of the opinion that the Council should themselves publish the results as belonging to the Institute. To enable you to advise the Council thereon, the Committee propose that the results of the experiments on brickwork should be published in an octavo form, about 100 pages; that it should contain description of experiments undertaken, tables of results observed (58), compression diagrams (5), photographic illustrations (56), appendices by Professor Unwin, &c., papers on geology, chemistry, &c., of materials, summary and inferences as to respective strengths, &c., table of contents, index. The diagrams and photographic illustrations are all provided, the tabular work would be expensive, but all the rest would be ordinary printing." The Science Committee did not consider it justifiable to allow Mr. Dibdin to publish the results of a work which had been entirely carried on by members of the Institute, and they recommended the Council to that effect. The letter contained a clear statement of the nature of the work they proposed to publish, the number of pages, the nature of those pages and the illustrations. To that letter the Science Standing Committee had received no answer whatever from the Council. Further, in the Annual Report which the Science Committee sent in to the Council these words occurred: "And the Committee are awaiting the decision of the Council as to publishing an account of the whole of the experiments in an octavo form." But these words were omitted in the printed Report they were now discussing. Therefore he moved that the Report of the Science Standing Committee be added to in these words: after the words "the 13th of December" on the seventh line to add the words "and the Committee are awaiting the decision of the Council as to publishing an account of the whole of the experiments in an octavo form"; or, as an alternative, "That the words revised by the Council" be inserted under the heading of the Report of the Science Standing Committee.

Mr. JOHN HERB [F.] said that might be a question between the Science Standing Committee and the Council, but he did not take this to be a question for the meeting. The Council were entrusted with a certain discretion in the publication of reports submitted to them, and it would be very imprudent for the meeting, who were perfectly un-

acquainted with the details of the question, to interfere and interpolate something which the Council deemed advisable to omit from the Report.

Mr. S. B. BEALE [A.] hesitated to speak on a matter which, in its essence, was a question of specific policy between the Science Committee and the Council; but they were asked to pass the Annual Report, and so were afforded the only means of asking the question, and perhaps of arriving at a resolution in the direction they wished to go. The alternative form of Mr. Max. Clarke's amendment rendered it somewhat difficult to second, as he desired to do. Some explanation, however, was needed from the Council. The Council said they were waiting the pleasure of the Science Standing Committee; and the Science Standing Committee said they were waiting the pleasure of the Council. The Committee were anxious to publish these tests, and proposed to do so, and negotiations were entered into, in course of which the Committee were asked as to the best manner and form the work should be published. As a member of the Science Committee, and as a member of the General Body, one was entitled to know how the matter stood. It was desirable that the results of these experiments should be published in some concise form. If it were worth while for Mr. Dibdin to incorporate the whole series of experiments in his work, it should be worth while for the Council to do so. Therefore he asked what was the Council's position, and how did the question stand?

The CHAIRMAN thought the Institute should be congratulated on the interesting discussion that had taken place. If such discussions were more frequent it would have a great deal to do with filling the room at their meetings. Some apathy was undoubtedly manifested by members, and that had a great deal to do with the slow increase in their numbers. If a full room could be secured for every meeting, and a discussion in which the members would speak as well and as fully, and be as desirous for information as they had been that evening, their meetings would be the best allurements they could devise for bringing members into the Institute. With regard to the point raised by Mr. Woodward, as to the Council's power to use the funds of the Institute, Clause 16 of the Charter says: "The Council shall, subject to such limitations or restrictions as By-laws may from time to time prescribe, have the sole management of the income of the Royal Institute, and also the entire management and superintendence of all the other affairs and concerns thereof." Under that clause the Council had full powers to take the rooms upstairs, to furnish them, and to make them, as they hoped, a further inducement to members to join the Institute. During the protracted negotiations with the Allied Societies and architects in all parts of the kingdom, one reason they gave for so rarely attending the meetings was the waste of time that occurred when coming up to town in waiting possibly three or four hours before the meeting commenced, and they suggested that if there were a room they could wait in, and have tea and coffee, and see the architectural publications, it would be an inducement to come. That want the Council had endeavoured to meet. Some criticism had been levelled against the Institute in regard to its action concerning the plan for the improvements at Westminster; but looked at fairly, now the matter was settled, it would be seen that the Institute had had very great power, and that a good many of the suggestions offered by the Institute were adopted. Owing to the Institute's strenuous support of the parallel line in Whitehall being carried out right from the corner of Parliament Street, the fatal error originally proposed, viz. the canting off of the whole of the roadway, had been avoided. That was in a great measure due to the plan submitted by the Institute. Again, far from the Institute being lowered by what had happened, the Government had appealed to the

President of the Institute to take a most important part in the selection of plans, and in advising the Government with regard to the new buildings. Therefore, that entirely disposed of any criticism with regard to the conduct of the Institute in the matter of the improvements at Westminster. With reference to the Report of the Science Standing Committee, when the matter came before the Council it was brought forward first in regard to Mr. Dibdin, and as to the publication in his volume. The Committee had thought it unadvisable to consent to that, and Mr. Dibdin had been advised accordingly. The clause Mr. Max. Clarke had read out as being omitted from the report was in the opinion of the Council premature. It involved a very large and important question of expenditure, which had been considered by the Finance Committee; and as there was need for further revision, and the proposal would entail very heavy expenditure indeed, it was thought that the question, being still undecided, would be referred back to the Committee to make further inquiries, and therefore it was premature to bring the matter in its present state before the Institute. He must add that it had never been the custom, nor could it be expected that the Council should print every word that came up to them in the form of a report from a Committee. A Committee naturally looked at a thing from its own point of view, and was not always in possession of the evidence which came before the Council. Though verbal alterations might have to be made in a report—and even, for good reason, an omission—yet it might still be considered practically the report of the Committee. At the same time, he was quite willing to admit that the wording in capitals at the head of the Report was scarcely advisable in all circumstances, and possibly some objection might be taken to it.—In answer to further questions, the Chairman stated that the decision of the Council to which he had referred had only been arrived at that afternoon; that there appeared to have been some misapprehension about the matter, which he hoped had now been cleared up, so that the business would proceed more rapidly.

Mr. DELISSA JOSEPH [F.] asked permission to say a few words on the Report before the discussion closed. The general impression the Report left on his mind was a sense of deep disappointment. It seemed to him that the Report might be summed up as a record of many things attempted, and few accomplished. Many of the paragraphs were full of promise, but ended in nothing. One thing, however, was clear. The Council had proved itself to be an admirable administrative body. Its success in dealing with the finances of the Institute clearly proved that. But the Council was wanting in initiative; and when one found an administrative Council of an institution wanting in initiative, the first thought that occurred to one was that new blood might sometimes advantageously be introduced. With regard to the introduction of new blood, what was the real difficulty? It seemed to be this. About this time each year the Council issued a house list of nominations. That practically discouraged independent members from formulating their own independent nominations for the Council; for what use was it to members to put up those that they thought would be fit for the post in the face of this strong nomination? He did not know whether the By-laws could be altered to meet the point, but he thought the procedure should be something as follows. Just before the election a memorandum should be sent out to all members inviting nominations for the new Council. Then the names of those nominated by the general body should appear on the joint list; that is, independent nominations and the nominations of the Council itself. That was a point which should be further considered, and one which he believed would encourage the general body to take more interest in the affairs of the Institute. Such an insti-

tution as theirs should do something more to attract, and more particularly, as he had said at last year's Annual Meeting, to popularise architecture. The general impression one got was that architecture was probably the most misunderstood of the arts among the populace, and he could not help feeling that the Institute might do something to make the art more popular among the general public. The Council again should not limit itself to bringing up a report of the whole of the things that were done or attempted to be done in the past year; they should lay before the general public something approaching a statement, or a programme of policy for the future.

The CHAIRMAN said that, in regard to the nominations, he had forgotten to mention some of the points for the Council list. Members were not aware of the difficulties of getting new names. Numbers of gentlemen whose position and work made their presence on the Council desirable were applied to, but, though expressing themselves flattered and pleased at the invitation, they decline, because they have not the time to spare for the long meetings. The Council had taken the initiative in this very question. The election of members of the Council had recently been discussed at the Council, and one of its Committees had had greatly extended powers given to it to prepare for any elections, for any office, or for any reward; it had been given power to compel the Council to bring forward questions, to ascertain what work was being done, and to prepare lists showing those who were fit and desirable for office. It was too late to do anything this year, as the list had already been prepared; but a Committee had been appointed with full power to deal with the matter in future. It should be mentioned, with regard to members whose names appeared on the list for many consecutive years, that, though they did not often attend the general meetings, they did much valuable work on the Committees. The Report could give no details of the work done by Committees of the Council. But to take one Committee only—the Finance Committee: a glance at the long statements of account must make it evident to anyone that a great deal of time and attention must be given from year to year to the subject of finance. A new man coming on was practically of no use on a committee which had to deal with accounts and statements, knowledge of which must extend over many years. The Council, however, always brought forward a certain number of fresh names, and members had an opportunity of adding others to the list. Whether, in the future, it might not be the duty of the Council to suggest that a certain number of its members should retire every year, he was unable to say. The new Committee he had mentioned had not met yet, but he had no doubt that subject would be considered by them. The subject, however, had its difficulties, because it might happen that the three members most intimately acquainted with the Institute, and cognisant of all its affairs, would be the three compelled to retire. So there was something to be said against any alteration in the method of nomination.

Mr. E. W. HUDSON [A.] thought the Chairman's announcement not the least result of importance arising out of the discussion: had it been made in the Report a part of the criticism aimed at it would have been disarmed. It would have shown that not only were the Council a good administrative body, but that it was also seeking the advancement of the Institute by taking the initiative in a very important matter.

The CHAIRMAN, asked by Mr. Wm. Woodward to say a few words with regard to the alterations in Russell Square and the Art Committee's protest, observed that he was unwilling to add his opinion to either side, knowing that he must offend half the meeting; therefore as everyone must be a judge for himself as to whether Russell Square was in course of improvement or not, he would say nothing about it.

Mr. JOHN SLATER, B.A.Lond. [F.], thought the meeting should not separate without congratulating themselves and their past President, Mr. Penrose, upon the honour conferred upon him in being elected Antiquary to the Royal Academy. It must have been most gratifying to Professor Aitchison to have heard the statement made by Sir Edward Poynter on Saturday, as it was to all of them who had read the announcement.

THE CHAIRMAN, having proposed that the question of the adoption of the report should be put,

Mr. SYDNEY B. BEALE [A.] referred again to the matter of the clause omitted from the Report of the Science Standing Committee, and asked that a statement should be added that the Council were considering the advisability of publishing the results of the brickwork experiments as recommended by the Committee.—After some further discussion, contributed to by the Chairman, Messrs. Max. Clarke, Sydney Beale, C. B. Brodie, Matt. Garbutt, R. Phené Spiers, John Slater, and the Hon. Secretary, in the course of which a tribute of appreciation was paid by the two last named for the generous services the Committee had rendered the Institute in carrying out the tests, it was agreed on the motion of the Hon. Secretary, seconded by Mr. Matt. Garbutt, that a footnote should be inserted in the Report stating that the Council would consider the advisability of publishing the results of the experiments in the form suggested by the Committee.

The CHAIRMAN having mentioned that the President's name had been inadvertently omitted from the item in the Art Committee's Report referring to the New Government Offices Scheme, where it should appear along with the names of Messrs. Alfred Waterhouse and Macvicar Anderson, directed that the name should be inserted.

The Report was then adopted, and further business concluded as notified in the Minutes [p. 359].

ALLIED SOCIETIES.

The Sheffield Society and its Work.

The Annual Report of the Allied Society at Sheffield, read at the Annual Meeting of that body on the 26th April, shows the Society to be in a very flourishing condition. Notwithstanding exceptional expenditure for lectures, library additions, and conversations, the Council are able to report a balance of over £120, £100 of which is to be invested to form the nucleus of a reserve fund. The membership shows a net increase of eight during the year, the Society now numbering 114 members—viz. 31 Fellows, 43 Associates, 18 Students, 5 Honorary, and 17 Lay Members. The Council have deemed it prudent, by reason of recent valuable additions to the Library, to insure the Society's property; and in order to facilitate the free use of the Library its charge has been undertaken by three members—Messrs. L. D. Hemsoll, S. L. Chipling, and W. J. Beall. A welcome donation of £5 to the funds for improving the Library has been made by another member, Mr. E. M. Eaton, Assoc. M. Inst. C.E.

The Papers read during the Session have been of sterling value, and highly appreciated, securing an attendance averaging about double that of former years, and being well reported in the local and professional press. The subjects treated include "Eighteenth Century Architecture," by Mr. J. A. Gotch [F.], F.S.A.; "The Warming of Public Buildings," by Mr. F. R. Farrow, printed *in extenso* in this issue of the JOURNAL [pp. 347-55]; "Sanitary Engineering in Connection with Buildings," by Mr. W. C. Fenton; "Proportion," by Mr. Hugh Stannus [F.]; and "English and Foreign Timber for Building and Decoration," by Mr. C. Castle.

At the annual summer excursion the Society visited Chatsworth, where, by the courtesy of the Duke of Devon-

shire, who is an Honorary Member of the Society, the members were accorded the privilege of inspecting the private apartments, as well as those open to ordinary visitors.

At the instance of the Hon. Secretary, Mr. C. J. Innocent [F.], several meetings of junior members were held to discuss ways and means of organising classes for the study of scientific subjects, resulting in the Council's arranging for a course of ten lectures by Mr. Hugh Stannus [F.], Lecturer at the Royal College of Art, on "The Classic Elements of Architecture." The results were encouraging; students to the number of 43 joined the classes, and so full of interest were the lectures that the attendance was exceptionally well maintained throughout the course. The lecturer treated his subject under the following heads:—

Mouldings.—Origin, Function, Names, Individual Treatment; The Mouldings in Groups; Modifications; Application to Features.

The Walls.—Proportion; Thickness; Fenestration.

The Order.—Sub-divisions; Application; Pediments.

The Report states that this is one of the best means of education the Society has engaged in, and has sufficiently proved that the younger members are willing to devote their time to self-improvement in their profession when a good opportunity is afforded them.

In professional matters the report shows equally satisfactory work. The assistance of the Society was sought by the Corporation of Sheffield in the competition for the police and fire-brigade station of that city—a competition limited to members of the Society practising in Sheffield. Mr. Charles Hadfield [F.], the then President, Mr. E. M. Gibbs [F.], ex-President, and Mr. C. J. Innocent [F.], Hon. Secretary, drew up the instructions to competitors, and reported on the designs submitted. Their report was adopted by the City Council, and it is stated the successful conduct of this competition has given more than usual satisfaction. In an important competition connected with the Woofindin Trust, also limited to members of the Society, the Council were invited to revise the Conditions and Instructions, and their suggestions were adopted by the Trustees; Mr. E. M. Gibbs [F.] acted as Assessor. Owing to the representations of the Council improved terms were gained for the School Board Competition. With regard to the Building By-laws of the city, the Council have approached the Corporation with a suggestion that if any alterations or additions were contemplated the Council should have an opportunity of perusing the draft and making suggestions thereon.

Questions having been raised between individual members and the Sheffield Master Builders' Association, the Council convened a meeting of members to consider the matter, and the following resolutions were passed:—

1st. That the deposit of Priced Schedules or Priced Bills of Quantities with each tender submitted is not usual or desired. That the successful contractor does, and should continue to, deposit with the Architect or Surveyor a Priced Schedule or Priced Quantities to be used by him for all the purposes of the contract, and for those purposes only.

2nd. That as the execution of work within a stipulated time is of the essence of the contract, liquidated damages must be provided for in the agreement, subject to extension of time for bad weather, fire, and strikes of workmen.

3rd. That the Architect for the building is usually the Arbitrator in the event of any dispute, and should continue so to be.

These resolutions were forwarded to and discussed by the Builders' Association, who agree that the first and second clauses might be arranged, but that there must be a full and open arbitration clause. Deputations from the two Societies are to meet and discuss the point in dispute.

The Report, the leading items only of which have been here touched upon, concludes with the regrettable announcement of the resignation of the Hon. Secretary, Mr. C. J. Innocent, who for four years has devoted himself unsparr-

ingly to the service of the Society, and to whom, as Mr. Fowler's remarks quoted below suggest, its present flourishing condition is largely due. A very cordial vote of thanks to Mr. Innocent was passed by the Society, on the motion of the President, seconded by the Vice-President. Mr. Fowler, the Hon. Treasurer, said that when Mr. Innocent accepted the office four years ago there were 69 members, and now there are 114; the balance in hand at that time was £4, and now it is £121. No one could have worked better for the Society than Mr. Innocent, no one could have done so much honorary work, and his efforts had placed the Society in an exceptionally prosperous and influential position.

In acknowledging the vote, Mr. C. J. Innocent said it had been a pleasure to him to work for the Society, and to see it prosper, and he thought the Council might be congratulated, not only upon what had been done, but also upon what had not been done, for if every suggestion that had been made by enthusiastic persons had been acted upon, the Society might not now stand in the amicable relation to other bodies which it now occupied.

It was decided that in future some paid assistance should be provided for the Hon. Secretary.

The result of the subsequent ballot for the officers for the ensuing session appears below. In this connection may be noted a change in the composition of the Council, which came into operation at the recent election. Hitherto, in addition to the officers and elected members of the Council, the past Presidents have been members *ex-officio*, four Fellows and one Associate being elected. Now, according to the altered rule, only the ex-President, that is, "the latest past President," will be retained on the Council without election in addition to the officers and the elected members, viz., four Fellows and two Associates.

OFFICERS AND COUNCILS 1898-99.

The Aberdeen Society.

President, Mr. James Souttar; *Vice-President*, Mr. Arthur Clyne; *Hon. Sec. and Treasurer*, Mr. John Rust; *Members of Council*, Messrs. William Kelly, A. M. Mackenzie [F.], A.R.S.A., A. H. L. Mackinnon [A.], George Watt, and R. G. Wilson.

The Leicester Society.

President, Mr. A. E. Sawday [F.]; *Council*, Messrs. C. Baker, J. Goodacre [F.], A. H. Paget [F.], H. H. Thomson [A.], W. A. Catlow, and R. W. Beddingfield [A.]; *Hon. Treasurer*, Mr. S. Harrison [F.]; *Hon. Secretary*, Mr. S. Perkins Pick [A.].

The Northern Association.

President, Mr. F. W. Rich; *Vice-President*, Mr. W. Glover; *Hon. Treasurer*, Mr. J. T. Cackett [F.]; *Hon. Secretary*, Mr. A. B. Plummer [F.]; *Hon. Solicitor*, Mr. H. C. Harvey; *Hon. Librarian*, Mr. H. C. Charlewood [F.]; *Council*, Messrs. H. G. Badenoch, Frank Caws [F.], A. M. Dunn, W. S. Hicks, Joseph Oswald [F.], J. W. Taylor [F.], R. B. Dick, and C. S. Errington [A.]; *Auditors*, Mr. J. W. Donald [A.], and W. E. Fenwicke.

The Nottingham Society.

President, Mr. A. N. Bromley [F.]; *Vice-President*, Mr. A. H. Goodall; *Council*, Messrs. Herbert Walker, A. E. Heazell, Arthur Marshall [A.], A. W. Brewill [F.], and J. Sander [A.]; *Auditors*, Messrs. A. W. Brewill, and H. Blatherwick.

The Sheffield Society.

President, Mr. R. W. Fowler; *Vice-President*, Mr. J. Smith; *Treasurer*, Mr. F. Fowler; *Hon. Secretary*, Mr. W. C. Fenton; *Council*, Messrs. Charles Hadfield [F.], E. M. Gibbs [F.], C. J. Innocent [F.], T. Winder, Assoc.M.Inst.C.E.; A. Smith Denton, J. R. Wigfull [A.], and J. B. Mitchell-Withers [A.].

during the earlier centuries of mediæval Europe. Though most educated persons probably possessed a few books, the only large collections must have been those in the cloister of the religious houses or collegiate churches, and a little later in the universities and colleges. The earliest of these conventual libraries go back indeed to the days of St. Benedict, in the sixth century, who made reading at stated periods part of his rule. But there were libraries in the churches even before his time; at Jerusalem there was one in the third century, and the church at Hippo inherited the books of St. Augustine. This takes us back to the time when the great Roman libraries were still in existence, when the famous Alexandrian library still had its 400,000 volumes, in spite of the disastrous fire that had destroyed so many during the siege by Julius Cæsar, and when many private libraries still remained in the houses of Roman families. It was on the model of these old classical libraries that those of the churches and convents were framed.

The private libraries of the Romans were of two kinds. The simpler plan was to store the books in a closet in presses numbered and catalogued, whence the volume that was sought would be taken away to be read elsewhere. One of the chambers discovered at Herculaneum in 1752 was a library. It was a small room, so small that by stretching out your arms you could almost touch the sides. Over seventeen hundred and fifty papyrus rolls were found here, arranged in presses round the walls, and another in the central space. These cases (*armaria*) were of about a man's height and had been numbered.

But the wealthy man of letters among the Romans was not satisfied with this modest arrangement for his books. He placed them on shelves in an elegantly furnished room, and decorated the presses with busts or pictures of eminent men with inscriptions below, and sometimes covered the woodwork with precious inlays. It became fashionable to have a library in your house, and then, as now, many men—to be in the mode—would have their thousands of volumes of which they never opened one. Seneca laughs at the man who sets up his bookcases of cedar and ivory, and collects volumes of unknown or worthless authors, and yawns in the midst of his books of which he knows no more than the titles. “At the houses of the idlest of mankind,” he says, “you will find all the orators and historians, and bookcases piled up to the ceiling; for a library has to be furnished out nowadays by the side of the bath and bathing apparatus, as a necessary ornament of the house. Did this come of excessive love of study it might be pardoned; but now these exquisite works of sacred geniuses are collected, and adorned with their portraits as mere wall decorations.”*

This luxurious form of library, it need hardly be said, was not the one that furnished the type for the libraries of the churches and convents in the dark and earlier middle ages. A very modest provision was necessary for the few readers, and perhaps still fewer books, of those days. For the most part the books were kept in chests or locked up in presses which retained the old Roman name *armaria*, which has passed into the French word *armoire*. As the collections increased, the books were divided into two classes; one class was kept as a reference library, to use a modern term, and placed in presses in the cloister where students could come and consult them, and the other consisted of volumes which were lent out to the monks to read. “Idleness,” says the rule of St. Benedict, “is the enemy of the soul; hence brethren ought at certain seasons to occupy themselves with manual labour, and again at certain hours with holy reading.” Between Easter and October they were to read from the fourth to the sixth hour; from October till Lent till the second hour; during Lent from morning till the third hour. Each year in Lent a book from the library was to be given out to each of the brethren, which he was to read straight through. On the same day in the following year he

* Seneca: *De Tranquillitate*, ix. Pliny: *Nat. Hist.* xxxv. ij.

was to bring the book back and receive another. The librarian, *custos librorum*, was to lay a carpet down in the chapter-house with all the books on it but those which had been lent the year before. These were to be brought by the brethren, each his book in his hand. "Then the librarian shall read a statement as to the manner in which brethren have had books during the past year. As each brother hears his name pronounced he is to give back the book which had been entrusted to him for reading; and he whose conscience accuses him of not having read the book through which he had received, is to fall on his face, confess his fault, and entreat forgiveness. The librarian shall then make a fresh distribution of books, namely, a different volume to each brother for his reading."*

This is the rule made by Archbishop Lanfranc in 1080 for the English Benedictines. If few books, or even only one was read in a year, it is plain that it was read very thoroughly. How many of us could confess to a librarian on our conscience that we had read one book through in a year without skipping?

As time went on, and collections increased, rooms had to be provided for housing and storing the books. In the Cistercian houses there was provided a small square room without a window, which was lined with presses on the walls and even over the door. At Christ Church, Canterbury, the number of books at the beginning of the fourteenth century had risen to 698, which were dispersed in cases in various parts of the convent wherever space could be found. The inconvenience of this to students who wanted to refer from book to book must have been very great, and it was about this time that the provision of a room devoted to books, and with conveniences for studying them, began to be made. A library was built over the Prior's Chapel at Canterbury, by Archbishop Chichele, between 1414 and 1443; another at Durham over the old sacristy, by Prior Wessyngton, at the same time; a similar provision was made in the Abbeys of Cîteaux and Clairvaux over the *scriptorium* between 1480 and 1503, at St. Victor at Paris between 1501 and 1508, and at St. Germain des Prés, about 1513, over the south cloister. †

But if the great ecclesiastical establishments set the example of collecting books and of regular study, the universities and colleges seem to have led the way in building rooms to contain their libraries and afford easy modes of using the contents.

The oldest structure of this kind in England, perhaps in Europe, is the old library of the University of Oxford, which, though altered and adapted to other uses in later days, still retains many of the features of its original form. On the north side of the choir of St. Mary's Church is a two-storeyed building adjoining the tower at one end, and separated from the body of the church by a narrow courtyard. This structure, rarely seen by visitors, and even unknown to the majority of Oxford men, is the most historical spot in the University. In the lower room, dark and sunk in the ground, and ceiled with a low stone vault, the congregations of the University used to meet for some two hundred years to discuss and pass their statutes; and in the upper room were arranged the few books of the University Library, which has since grown into one of the greatest in the world.

The earliest recorded gift of books to the University of Oxford is that of several copies of the Bible bestowed by Roger de l'Isle, Dean of York, who died in 1235. These and other books were, as Anthony Wood says, either locked up in chests or chained upon desks in St. Mary's chancel or church, to be used by the scholars of Oxford "under a pledge." By this is meant that besides the books exposed for reference and chained to desks in the church there were others which were kept in chests and delivered out to students to take away and read at home, as we have seen was the rule in convents. But in this case, as the scholars were not

* J. W. Clark: *Medieval and Renaissance Libraries*.

† *Ibid.*

confined within the walls of a monastery, they were required, when borrowing a book, to leave as a pledge a sum of money, or an article of value equal or superior to that of the book they received. The keys of these chests were kept by certain masters appointed by the Chancellor, who also received the pledges and locked them up in the chests till they were redeemed by the return of the books.

At length, about the year 1320, Thomas de Cobham, Bishop of Worcester, desirous of showing his love to his Alma Mater, began to build a library, which he proposed to endow with his own books. The execution of this project was entrusted to Adam de Brome, the King's almoner and rector of St. Mary's, and the building was erected which still stands at the north side of St. Mary's Church. The Bishop, however, died in 1327, and his executors, after paying his debts and funeral expenses, found nothing left to enable them to carry out the intended foundation. The books indeed had been pawned for fifty pounds of silver to clear off liabilities, and though the lower room had been finished, and was used by the University for its congregations, the upper storey was unfurnished, and the windows were neither glazed nor fitted with shutters.

Adam de Brome meanwhile had founded the society which is now known as Oriel College, and in the difficulties of Bishop Cobham's trustees he saw his way to provide his infant foundation with a library. The executors raised no objection. They could not redeem the books themselves, and told Adam de Brome to go in God's name and redeem them himself if he could, and bestow them on his new college for the use of his scholars there. Adam de Brome accordingly paid the fifty pounds of silver, took the books out of pawn, and brought them to his college, where they lay till after his death in 1332. At the same time the college took possession of the upper chamber at St. Mary's and locked it up.

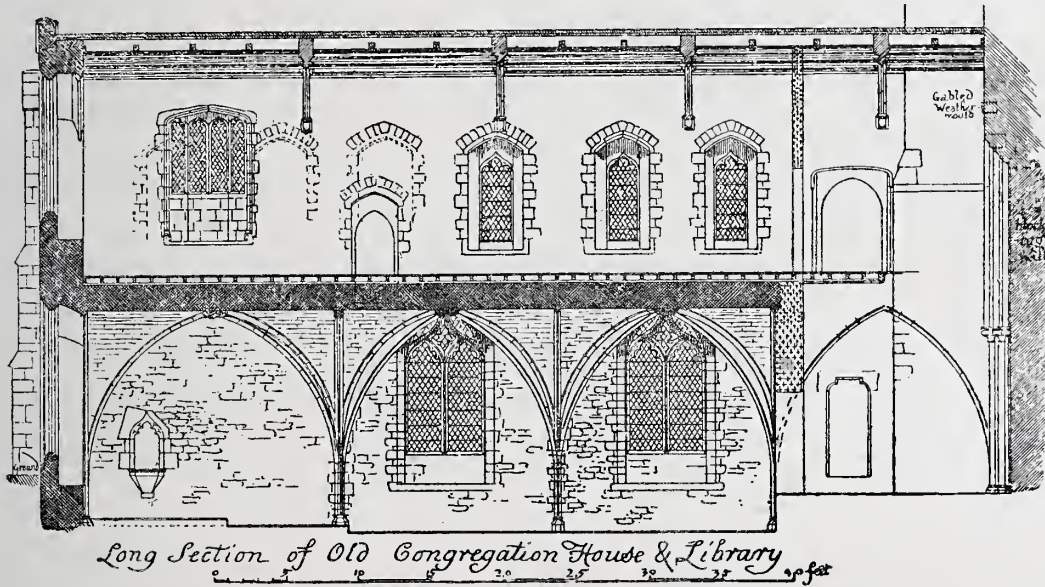
The University, however, did not long submit to this invasion of their rights, as they considered it. The building, they said, was intended for the University, and was built before Oriel College was founded. The books, too, were intended by Bishop Cobham for the whole University, and his intention ought not to be defeated. Those were days when the stronger party was apt to take the law into its own hands, and on a certain day in August 1337 the Chancellor's Commissary, with the Proctor and a multitude of scholars, invaded the college, where there were only a few Fellows at home, and carried off the books, "those few Fellows," as a nearly contemporary writer says, "not daring to resist so great a multitude, nor even to make complaint of so great an injury." Worse still, the invaders went to St. Mary's and burst open the door of the unfinished library, of which they took possession; and here they kept the books in two chests; "and thus," as the same writer plaintively remarks, "the college is wickedly defrauded, both of the said books, and also of the money paid for them." "Alas!" he continues, "how unjustly does the University detain these books, and how great a wrong have the Chancellor of Oxford and Regents lately done to the college and its Fellows, by bursting the door of the chamber and carrying off its locks, and entering the said chamber beside and against the will and assent of the college, besides the contumelies and insults which they have hurled against the Fellows of the college both in the courts of law and elsewhere, and besides other and many more grievances." *

In this somewhat irregular way did that great library which, from its second founder, we know as the Bodleian have its beginning. In this building, the earliest of our mediæval libraries, we see the archetype of all that followed.

I now show you a section of Bishop Cobham's building [*Illustr. No. 1*]. Below is the old Congregation house, with its vaulted ceiling; above is the old library. You

* See my *History of St. Mary the Virgin*. Oxford.

will notice the different disposition of the windows. The lower room has larger windows of two lights each; the upper has smaller windows of a single light each, spaced at even distances along the walls. The latter arrangement results from the way in which early libraries were arranged. The books which were kept there were, you will remember, those that were not to be taken away, or borrowed on pledge. They had therefore to be arranged so that they might be read on the spot, and also to be secured in such a way that they could not be surreptitiously or violently carried off. The tomes, too, were ponderous, and required substantial supports. Good light for reading, security against removal, and support for the weight of the volumes, were the conditions to be satisfied. They were met in



Illustr. No. 1.—BISHOP COBHAM'S LIBRARY, ST. MARY'S, OXFORD.

this way. Long desks were placed at regular intervals at right angles to the walls, on which the volumes lay on their sides. A bench was fixed in front for the reader, and a window came between each pair of desks to light that pew or cell. Every volume had a metal clip riveted to the front edge of the board forming one cover, to which was attached a light iron chain of the requisite length, having at the other end a ring. This ring ran upon an iron rod which was carried along the top of the desk, and was secured at the end by a hasp and padlock to prevent the ring being drawn off. Attached to the church of St. Wallberg, at Zutphen, in Holland, is a library dating from 1555, which is still fitted with desks of this kind about nine feet long.*

At a desk such as these the Oxford student of old would take his place after the librarian had carefully inspected him to see that his clothes were not damp, for that would injure the books; that he had no pen or ink with which to blot them, or perhaps disfigure them; and that he had no knife about his person for cutting out leaves or illuminations that might tempt him. The chains had play enough to enable him to open the volume flat on the sloping desk, and if he wanted to make any extracts he was allowed the use of a wax tablet and style.

You will understand from this description why the windows of the libraries at Oxford

* J. W. Clark, p. 38: See illustration, his Frontispiece.

and Cambridge are small and evenly spaced in the walls, as you see they were in Bishop Cobham's library, though subsequent insertions of doors and an oriel window have somewhat marred their original arrangement.

The dispute over Bishop Cobham's books was still raging when another library was founded in Oxford. In the fourteenth century the cultivation of general learning which was being advanced in Italy by Petrarch and Boccaccio had begun to make way in England. Richard de Bury, Bishop of Durham from 1333-45, was a bibliomaniac and a collector unrivalled in his day. He was not, however, a mere book-collector, but a fair scholar himself and an encourager of learning in others. Petrarch, who met him at Avignon, describes him as "a man of ardent wit, and not ignorant of letters; a student curious of hidden things from his youth, almost beyond belief." He surrounded himself with learned men, and some book was always read to him at table, which he would discuss with his attendants. It is said he possessed more books than all the other bishops together. Wherever he went his room was filled with books, and they lay so thickly scattered about in his bedchamber, that those who entered could scarcely stand or move without treading on them. In his amusing and delightful *Philobiblon*, De Bury tells us how he made the most of the opportunities for collecting books which were afforded him by the foreign embassies on which he was employed by his old pupil, Edward III. In those days the favours of statesmen were matters of open traffic:—

"If," he says, "we would have amassed cups of gold and silver, excellent horses, or no mean sums of money, we could in those days have laid up abundance of wealth for ourselves; but indeed we wished for books, not bags; we delighted more in folios than in florins, and preferred paltry pamphlets to pampered palfreys." No sooner did it get noised abroad that anybody could "more easily obtain our favour by quartos than by money, . . . than crazy quartos and tottering folios, precious however in our sight as well as in our affections, flowed in most rapidly from great and small, instead of new year's gifts and remunerations, and instead of presents and jewelry. Then the cabinets of the most noble monasteries were opened, cases were unlocked, caskets were unclasped, and astonished volumes which had slumbered for long ages in their sepulchres were roused up, and those that lay hid in dark places were overwhelmed with the rays of a new light."

The splendid library thus collected by De Bury in ways that now-a-days would, I fear, be considered "jobbery," was not destined by him to be stowed away in uselessness. A great part of his *Philobiblon* is devoted to expose the shameful neglect with which books were treated in his day. He puts a parable into the mouths of the books themselves, and makes them complain of the indignity with which they are treated by an ignorant and corrupt clergy:—

"In the first place," say they, "we are expelled from the domiciles of the clergy, appropriated to us by hereditary right, in some interior chamber of which we had our peaceful cells; but, to their shame, in these nefarious times we are altogether banished to suffer opprobrium out of doors; our places, moreover, are occupied by hounds and hawks, and sometimes by a biped beast—woman to wit—whose company was formerly shunned by the clergy, from whom we have ever taught our pupils to fly, more than from the asp and basilisk; wherefore this beast, ever jealous of our studies, and at all times implacable, spying us at last in a corner, protected only by the web of some long deceased spider, drawing her forehead into wrinkles, laughs us to scorn, abuses us in virulent speeches, points us out as the only superfluous furniture in the whole house; complains that we are useless for any purpose of domestic economy whatever, and recommends our being bartered away forthwith for costly head-dresses, cambric, silk, twice-dipped purple garments, woollen, linen, and furs."

In a later chapter, De Bury treats of handling books in a cleanly manner and keeping them in order. "It is necessary," he says, "that a book should be much more carefully preserved than a shoe." He draws the picture of a stiff-necked youth lounging in his study, following the line on the page with a filthy finger, marking his place with straws between the leaves, which the stomach of the book cannot digest, and which stay there till they decay. He eats his fruit and cheese over an open book, and moves his cup from side to side on it as he reads, and he leaves the crumbs and fragments between the pages. He chatters with his

friends sprawling with his elbows on the book, leans upon it for a short nap, and on awaking tries to efface the wrinkles he has made in the pages by crumpling them backwards. Impudent boys scribble and draw frivolous pictures on the margins, or thieves cut them off and take out the fly-leaves for their own use. Such were the calamities to which books were exposed in the days of Edward III., and as human nature has not altered much in the main since that time, books occasionally suffer, it is to be feared, from similar ill-treatment even in our own day.

De Bury's books were not intended by him to be consumed by neglect or destroyed by careless usage. He bestowed them partly during his life, and the remainder at his death, on Durham College, at Oxford, whither the novices of the great monastery at Durham were sent for their University course. At first the books were kept for many years in chests under the custody of scholars deputed for that purpose in accordance with De Bury's instructions. At length, however, at the beginning of the fifteenth century, a library was built, and regularly furnished with book-cases or settles enclosing pews or studies between them, where the books were chained. Durham College came to an end at the dissolution of monasteries, together with its parent house; but its buildings were utilised and the college refounded by Sir Thomas Pope in 1555, by the name of Trinity College, under which it still exists. The old library of Durham College still remains the library of Trinity College, and I am able to show you a view of it in its present state.* De Bury's books indeed are no longer there, having been dispersed at the Dissolution; the cases are of a later date,† and the old open roof which still exists above is hidden by the construction within it of a series of attics; but the old walls and windows date from the time of Henry IV., and the latter contain many fragments of old stained glass [*Illustr. No. 2*].*

William of Wykeham's new college at Oxford was the first instance of a complete collegiate plan, where all the buildings, chapel, hall, and lodgings, are placed compactly round a court, and where provision is made in the original plan for every department. Among others we find a library 70 feet long, which, though altered, still forms the upper floor of the east side of the quadrangle. This college set the fashion for all future collegiate buildings at either University, and from that time every college had its library as an essential part of its plan. The size of the rooms thus devoted to books is so considerable that one might imagine the number of volumes to have been much greater than it really was. Yet in 1418, the library of Peterhouse had but 302 volumes, and the University library at Cambridge only 122, a number which increased in 1473 to 330. King's College and Queen's College, Cambridge, at that time had but 174 and 199 volumes respectively.‡ It must be remembered in explanation of this that the chaining of the books on the desks, as I have described, made it possible only to have very few books on each desk, and required a very disproportionately large room for a very moderate number. The difficulty of finding room for books as they increased in number soon led to a modification of the desks. Shelves were formed behind the desks on which books not in use were placed. At first there was but one tier, then more were added, until finally, as you have seen in the last illustration, they reached the ceiling. This, however, did not take place till the seventeenth and eighteenth centuries. The appearance of the fittings before then is nowhere better seen than in the lovely old library of Merton College, Oxford, a place where one breathes the very air of quiet seclusion and restful study [*Illustr. No. 3*].

As usual, it is a long narrow room, though in this case it takes the shape of the letter L, occupying the upper floor of two sides of the quadrangle. This floor was converted into a

* The whole of the illustrations referred to, besides those reproduced in these pages, were shown by lantern during the reading of the Paper.—ED.

† The cases were given in 1618 by Edward Hindmer, *Fellow*. ‡ Willis and Clark's *Cambridge*, iii. 413, &c.

library, it is said, by the benefaction of Bishop Rede, of Chichester, in 1376. The previous library at Merton had been a room where the books were kept in chests. The fittings and decorations which you see in this view and the one that follows do not belong to the date of Bishop Rede, but to that of Sir Thomas Bodley, who was a member of this college, and lies



Illustr. No. 4.—MERTON COLLEGE LIBRARY, OXFORD.

buried in the chapel. At first there were but two shelves above the desk, afterwards increased to three or four. As the books were chained and could not be taken away, the fixed desk was, of course, a necessity, and so was the bench which you see in front of it. In each pew or space between book-case and book-case is a little window to light the desk. All the cases at Merton were provided with chains, as may clearly be seen by the marks left on the woodwork, though all but a very few of the chains have been removed. Here is another view in the same library, which shows the side windows more distinctly [*Illustr. No. 4*].

The multiplication of shelves, on every one of which the books were chained, made a good deal of contrivance necessary. The chains, of course, had to be of various lengths, in order

that the books from every shelf, high or low, might reach the desk. The chains also had to be fixed in such a way that they would not get entangled with one another, an inconvenience which, considering the number of them, was not easily avoided.

There are still in England at least three libraries of chained books, and I am able to show you a picture of one belonging to Hereford Cathedral, which is the most ancient and perfect of the three. This library, which consists largely of manuscripts, some of them very beautiful, was originally placed over the western walk of the great cloister, and when this was pulled down to make way for a grammar school in the time of Edward VI., the books and their cases were placed in somewhat disorderly fashion in the Lady Chapel, which was then disused. At some time since 1841 they were lodged in the triforium over the north transept aisle. When I was there in 1897 they were being transferred to a new library on the site of the original one, Edward VI.'s grammar school having been pulled down; and though the cases had all been placed in their new home, only a few of the books had been set on the shelves and chained [*Illustr. No. 5*].

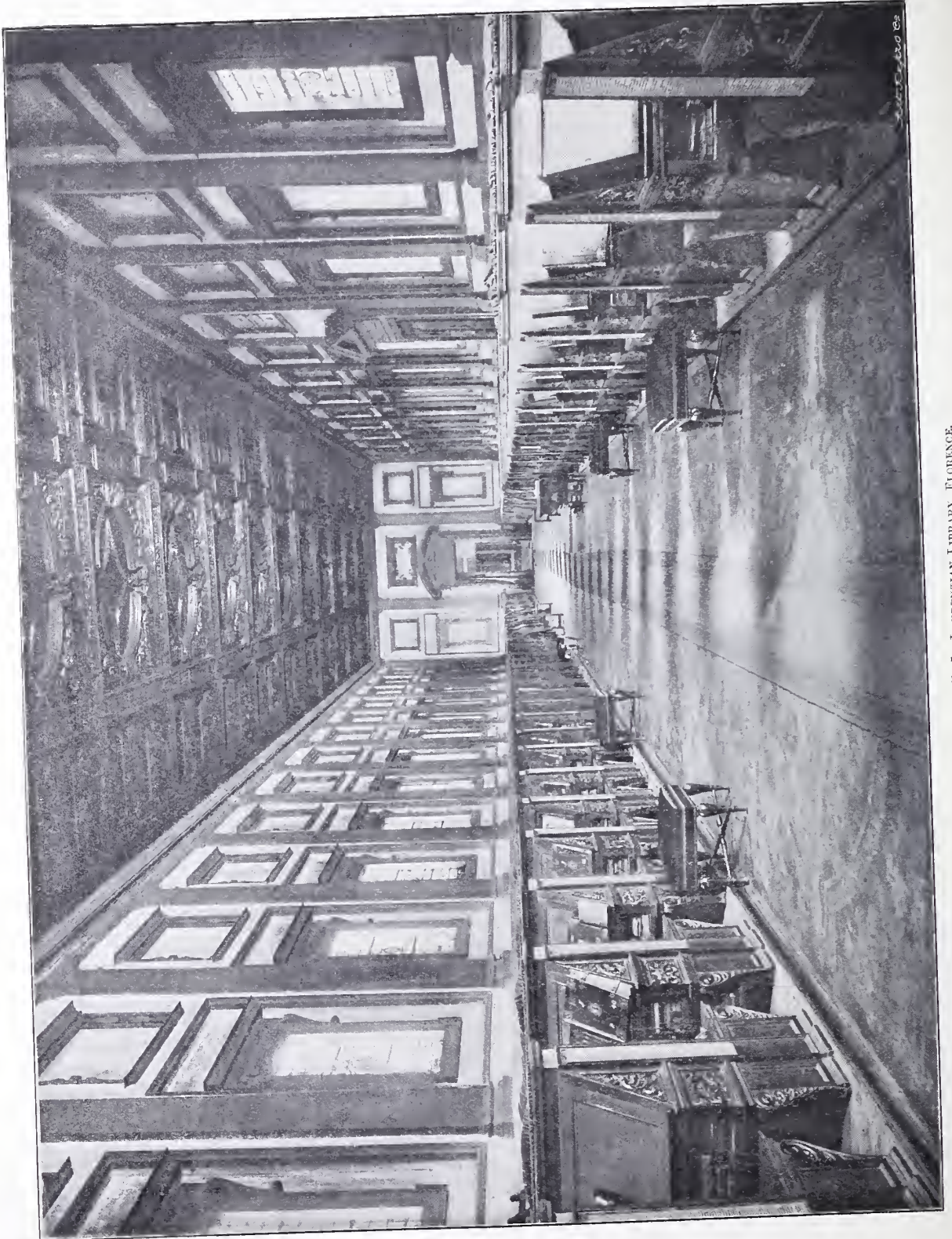
Besides those required for the existing cases, I saw in a corner of the half-dismantled room in the triforium a heap of old chains, and hasps, and staples, for which there was now no place, and by the courtesy of the Dean I am able to show you some of them to-night—specimens of the actual fittings of a mediæval chained library. The mode of attachment was this. One end of a chain was riveted to the front edge of each book, and at the other end was a ring which ran on an iron rod. One of these rods ran in front of the nosing of each shelf. The cases are about 8 feet high and 9 feet 8 inches long, and each one is divided vertically into three compartments. The rods are also divided into three lengths, and are slid in from one end through metal staples nailed to the edge of the vertical partition at the level of each shelf. The last staple at one end is a socket containing the end of the rod first put in, and preventing it from being pushed further. Then came the middle rod resting in the staples of the two middle divisions, and then the third and last rod, which reached to the end of the case. At this end a hinged bar fell down and was secured by a lock. A projection on this bar stopped the last rod from being drawn out, and this rod of course prevented the two inner bars from being drawn out. Consequently, in order to remove a book from the inner compartment, the two outer rods would have to be drawn out and all the chains unthreaded, a somewhat tedious process, probably seldom resorted to.

You will see that as the chains were fixed to the front edge of the cover, it was necessary that the books should be placed on the shelves, not as we do, with the backs outwards, but the reverse. The backs were inwards, and the title of the book was written on the edges of the leaves which came to the front.

“When a book,” said Mr. Willis Clark,* “was added to a mediæval library, it was necessary in the first place to buy a chain; and if the book were especially valuable a pair of clasps (here are some ancient clasps which were lying in the rubbish heap at Hereford); secondly, to employ a smith to put them on; and lastly, a painter, to write the name, with class-mark, across the fore edge. These processes were spoken of collectively as chaining, hosing, and clasping, or simply chaining and desking. . . . Further, it was not uncommon to write the title of the donor's name on a piece of parchment, overlaid with a thin plate of horn. The label thus protected was attached to the side of the book.” There are many books at Hereford so labelled.

Hereford contains another chained library in the vestry of All Saints' Church. Here the presses stand against the wall with a fixed desk on legs in front. The remarkable fact about

* *Cambridge*, iii. 429.



Illustr. No. 7. — LAURENTIAN LIBRARY, FLORENCE.

this is that it was founded as late as 1715, and that some of the chained books were published as late as 1706–1707.

In a room over the vestry at Wimborne Minster is a third chained library which I have not seen. It dates from 1686 [*Illustr. No. 6*].

Mr. Willis Clark, whose knowledge of the subject is probably unrivalled, in his interesting lecture on *Mediaeval Libraries*, gives an illustration of a chained library at Cesena, in the Romagna, dating from 1452. It has a sloping desk on which the books lie, and a shelf below for volumes not in use, both being chained to a rod that runs along the front edge of the desk. I have not seen this library myself.

But the finest chained library in the world is that at Florence, named after the Church of San Lorenzo, to which it is attached. The great hall of the Laurentian Library [*Illustr. No. 7*] was designed by Michelangelo, in 1524, to contain the collections formed by several generations of the Medici, and was still unfinished at the death of Clement VII. in 1535. It is sumptuously decorated with a fine ceiling, and the windows are filled with admirable glass in grisaille, designed perhaps by Giovanni da Udini, the great master of that kind of ornament. The presses of carved walnut-wood, the finest of their kind, are said to be designed by Antonio di Marco Giano, called *il Carota*, and Giambattista del Tasso.* As at Cesena, the book-case, with its desk, forms one piece of furniture with the seat of the next compartment forward. The volumes lie on the desk and are chained to a rod along the lower edge of it, and below the desk is a shelf with other volumes laid on their sides, which are also chained to the same rod. Mr. Willis Clark suggests that this mode of storing the books, instead of their being placed in shelves upright, was occasioned by the heavy metal mountings at the corners and in the centre of the covers, which would have been in the way. At the end of each case is a framed catalogue of the books it contains. The next illustration shows the catalogue, and also gives the detail of the carved ornamentation [*Illustr. No. 8*].

By the multiplication of shelves in the book cases, as at Hereford, the difficulty of providing storage for the books was overcome, but the difficulty of using more than a very few volumes at one time was increased rather than diminished. Though the case held five or even six times as many volumes as formerly, the desk remained the same, and accommodated only the same number of readers. When a seat was occupied, and a volume open on the desk, none of the books standing on the shelves above the space so occupied could be used. Instead, therefore, of providing for new acquisitions by heightening the cases, it was found necessary to increase the size of the rooms, and so find room for more cases. At Oxford the modest dimensions of Bishop Cobham's library were soon found inadequate, and a splendid addition to its library, which the University received towards the middle of the fifteenth century, made it absolutely necessary to move to larger quarters. This was the benefaction of Humphrey, "the Good" Duke of Gloucester, younger brother of Henry V., who bestowed his invaluable collections on the University. Duke Humphrey was a real student and lover of literature. As a collector of books he was as indefatigable as Richard de Bury himself. His literary tastes were wide, and his library included the Latin poets and orators, works on medicine and astronomy, Latin versions of Plato and Aristotle, and Italian poetry, including Dante, Petrarch, and Boccaccio. His title, "the Good Duke," was bestowed by the gratitude of the men of letters whom he favoured, and by the mob, who regarded him as a patriot on account of his opposition to peace with France, and to the exactions of the Papal collectors. Otherwise, he seems to have been as devoid of political or private virtue as the Italian princes of his time, whom he resembled in his taste for letters and art.

* Willis and Clark: *Cambridge*, iii. 426.

To this prince the University addressed itself in 1444, representing its difficulties. The new Divinity School, which was begun in 1426, was being slowly carried towards completion, partly by the aid of the Duke himself. Over this splendid room, which will be remembered by every visitor to Oxford, the University now proposed to build an upper storey for their library. Duke Humphrey had bestowed on the University 129 of his books in 1439, which were valued at £1,000.* His gift was followed by that of 126 volumes in 1440, and nine more in the same year; 139 in 1443, and then 135 more. The number was afterwards increased to over 600, and the Duke promised that after his death the University should have the rest of his library, consisting chiefly of books in Latin, which he reserved for his own use meanwhile. The grateful University wrote to thank their benefactor. "No one," they say, "beholds the books without admiration; all testify with one voice that they have never seen books adorned with such splendour or filled with such weighty matter." They go on to say that they intend to build a special chamber to receive the precious gift, where the books can be more conveniently seen and studied by the scholars. "For at present," they say, "if any one, as it happens, is occupied on one volume, he prevents as many as three or four other students from getting access to the books, on account of their being chained close together." †

Duke Humphrey died intestate in 1447, and it was not without difficulty that the University obtained the promised books and the £100 which he had intended to give towards the new building. By 1480, however, all was ready, and the University library was removed from the old solar or upper chamber at St. Mary's to the new solar over the Divinity School.

The exterior view [*Illustr. No. 9*] shows you the two storeys of this building—the Divinity School below, the library above. You will observe the same difference in fenestration here as at St. Mary's—large windows below, narrower windows evenly spaced in the wall above, each of them lighting a narrow cell or pew between the projecting book-cases or settles in the library above.

The next view [*Illustr. No. 10*] gives you the interior of the library. The fine manuscripts of the Duke's collection were dispersed when the library was rifled by the Commissioners of Edward VI. Only three of those given by him are known to be still there; one of them bears the Duke's arms, and another has his autograph. Six others are in the British Museum, and a few others have been recognised elsewhere. But though his books are gone, the chamber of which the University offered him the title of "founder" still bears his name, and is known to all Oxford men as Duke Humphrey's Library. The fittings, indeed, like the books, are not of Duke Humphrey's time. When the books had been dispersed, the useless cases and settles were sold. The walls and windows are original, but the quaint painted roof, the delightful book-cases with the latticed doors, the galleries with the columns and benches at their foot, are all the gift of the second founder of the library, Sir Thomas Bodley, whose name every lover of books will pronounce with the same reverence with which Hearne says he regarded the handwriting of that religious, good, and learned prince, Duke Humphrey of Gloucester. All the cases you see in this view were originally provided with chains; each of them has a desk on each side, the pew being wide enough for two rows of readers sitting back to back. These desks were hinged, and could be turned up and secured by an iron hook. At the outer end, on the face of the standard, was a frame containing the catalogue of the contents of each book-case. These, unhappily, have disappeared within my own recollection, having been removed to make way for narrow upright book-cases. The date of Sir Thomas Bodley's refitting is between 1598 and 1600. From that day to this, this venerable room has remained

* Wood: *History and Antiquity*, ii. 914.

† Macray: *History of the Bodleian Library*.

practically unaltered; there is no spot more attractive to the student to be found anywhere; you seem to breathe an atmosphere of thought, and a day spent there is the very poetry of study.

To this central room Bodley added a transept at the east end, and a corresponding transept at the other end was built a little later to contain Selden's books. This forms the famous H of the reading-room, Duke Humphrey's Library being the central link, and Bodley's wing and Selden's wing the two cross-lines. Later still, by Bodley's munificence, the quadrangle of the old schools was built eastwards of the library, a three-storeyed building, of which the two lower storeys were destined for schools of the several faculties, and the top storey for a gallery, like that ordinarily found in mansions of the period [*Illustr. No. 11*].

The gallery remains still, though the books, in an ever-rising tide, have long since begun to dispute possession with the pictures. The rest of the building is now entirely given over to books. The schools are removed to a new building in the High Street; the empty rooms are filled with presses, and even this does not suffice. The basement of the Sheldonian is crowded already with cases, and I have lately been engaged in fitting the basement of the old Ashmolean Museum to receive the overflowings. The Radcliffe dome is now a part of the Bodleian, Dr. Radcliffe's books having been taken to the museum in the Parks, whence, having outgrown their present quarters, they are shortly to be transferred to a new library specially built to receive them. And yet, with all this space, the University is at a loss how to provide for the accumulation, which goes on at the rate of over 8,000 volumes in the year, although Oxford does not, like the British Museum, insist on its right to a copy of everything that is published. Could Bishop Cobham, or Richard de Bury, or Duke Humphrey, or even Sir Thomas Bodley, see the surprising dimensions to which their modest beginnings have grown—dimensions which rival, if they do not surpass, those of the great Alexandrian Library, which was one of the wonders of the ancient world—they would perhaps inquire how many books among so great a multitude could be worth preserving at all, and how many of those that were worthy of preservation were read with the same diligent thoroughness as in the olden time.

Here is a view of another part of the gallery at the Bodleian [*Illustr. No. 12*].

The next library of which I show you a view [*Illustr. No. 13*] is that of St. John's College, Cambridge, which is furnished with superb cases of carved wainscot dating from 1623–28, when the library was built. There is nothing finer than these in the way of library furniture to be seen at either University. The arrangement is somewhat novel. Between each pair of windows is, as usual, a tall case standing out at right angles to the wall, but the bay between is wide enough to allow of an intermediate case opposite the centre of the window. These cases are lower, and have a double desk on the top; originally they were so low that they served for a reading-desk, but most of them have since been raised,* as you see, with some detriment to the beauty of the arrangement.

There is no trace of chaining on these cases, but the practice is continued of affixing the catalogue on the outside of the standard end farthest from the wall.

But, though from this time libraries and library fittings were more and more commonly constructed free from the old cumbrous system of chaining, more than a hundred years had still to pass before the chains were removed from the older libraries. In the building accounts of Wadham College, in 1613, are entries for the purchase of bars and staples for the library, and chains at 4s. a dozen. The gift of John Selden's books to the Bodleian Library in 1659

* Willis and Clark: *Cambridge*, iii. 452.

was accompanied with the condition that they shall be placed and chained within twelve months. Chains were bought for the Bodleian Library as late as 1751, and it was not till 1757 that the removal of chains there seems to have begun. In 1761 there is a payment recorded for unchaining 1,448 books, at a halfpenny each. The books at Brasenose were not unchained till 1780, when the library was refitted by Wyatt. Those at Wadham probably disappeared in 1783, when new book-cases were set up, on which there is no trace of iron-work for chaining.*

It is curious to think that little more than a century has passed since the practice was given up.

We have now reached a time when the middle ages have passed away, and I have therefore touched the limits of my subject. But before concluding, I propose to give you a few illustrations of libraries that, without being strictly mediæval, yet conform generally to the traditional arrangement of the preceding centuries. In 1695 Sir Christopher Wren finished the new library which forms the western side of Nevile's Court at Trinity College, Cambridge [*Illustr. No. 14*]. I cannot find words to express my admiration for this stately building, which both within and without is a triumph of architecture, and would suffice by itself to establish Wren's reputation as an artist. The fittings are magnificent,



Illustr. No. 14.—TRINITY COLLEGE LIBRARY, CAMBRIDGE.

and were designed by Wren himself. In their arrangement he has for the first time broken through the conventional plan. His windows are kept up above the cases and he has thus been able to place bookcases against the outer wall, besides setting them out at right angles to the side walls, as usual. He sends the college a plan which he says "*shewes half the ground-plot of the upper floor, the entrances from the staireases, and the disposition of the shelves both along the walls and breaking out from the walls w^{ch} must needs prove very convenient and gracefull, and the best way for the students will be to have a little square table in each eelle with 2 chaires.*"

* *My Wadham College*, pp. 195-6.

. . . at the corners of the room were to be "4 lesser *celles* not to study in, but to be shut up with some neat lattice doors for archives."

The next illustrations show you Queen's College Library, Oxford, by Hawkesmoor, Wren's pupil, 1692-94, and Christ Church Library, Oxford [*Illustr. Nos. 15-16*]. The library at Christ Church, Oxford, is as much picture gallery as library. It was designed by Dr. Clarke, and was begun in 1716, but not finished till 1761.

The next library of which I have an illustration to show you [*Illustr. No. 17*] breaks away completely from the old traditions. In 1714 Dr. Radcliffe, physician to William III. and Queen Anne, both of whom he offended by his brusqueness of speech, though they were forced to follow his advice, left £40,000 for building a library, to contain books of physics and natural science, and for purchasing the site. In 1747 the fine building, with the dome which forms so conspicuous a feature in every view of Oxford, was completed by James Gibbs, the architect of the churches of St. Martin-in-the-Fields and St. Mary-le-Strand. The circular and galleried plan made an entirely novel arrangement of the book-cases necessary, the latter being placed partly on radiating lines and partly against the walls.

In conclusion I venture to show you a view of a library of my own making [*Illustr. No. 18*], in which I have tried to combine the two arrangements of cases against the walls and cases breaking out from them. Windows were possible on one side of the room, which suggested the projecting cases, with cells between each pair, containing a table. No arrangement for readers, to my taste, will compare with this for comfort. On the other side, no windows being possible, cells would have been badly lit, and I have therefore lined this side with the book-cases flat against the wall.

In the space of a single lecture it is impossible to do more than touch hastily on the main features of a subject so wide as this; and I fear I may even now have wearied you by going too much into detail. Of the books themselves I have had less to say than of the mode of housing and using them, which may perhaps be new to a good many among you. It would be interesting to have given some account of the subjects of the books in mediæval libraries, both public and private, which can be gathered from catalogues that have come down to us; but I dare not enter on so wide a field. We must to-night be content to study the outsides of the books as they lie on their desks, or stand, with their edges to the front, on their shelves. This limitation of the subject will remind us that there are two ways of considering a book. You may regard it from the outside or from the inside. You may value it from the literary point of view for its subject and matter, or you may value it for its type, its paper, and its binding as a simple work of art. Either mode of regarding it is apt, by itself, to drive a man into fanaticism and into blindness as regards the other aspect. One has heard of a collector of books who, wishing to show that contempt which it is natural one collector should feel for another, could think of nothing worse to say of his rival than this: "Oh! So-and-so—he knows nothing of books, unless, perhaps, it is the inside of them." The story is told of a man who, hearing that books could only be bound in perfection at Paris, took a volume of Victor Hugo to the prince of Parisian bibliopegists, and gave him *carte blanche* to bind it in his very best way. When the book came home it was a miracle of the bookbinder's art; but, when the owner tried to open it, he found it would only open about two inches. Naturally indignant, he complained to the binder, who replied, "Well, and why should you want to open it? If you want to read Victor Hugo, I can sell you a copy for five francs. But this is a work of art, and cost a thousand francs. What do you want to open it for?" These instances show the extremity of that disregard for the *insides* of books to which the pure collector may attain. As an example of the opposite extreme, I may mention a very learned man and a most accomplished scholar, whom I knew very well, who would hunt up a

DISCUSSION OF MR. JACKSON'S PAPER.

Mr. H. L. FLORENCE, *Vice-President*, in the Chair.

Mr. J. WILLIS CLARK, M.A., Registrary of the University of Cambridge, who rose at the invitation of the Chairman, in expressing his appreciation of the Paper, observed that Mr. Jackson had modestly referred to him as though the Paper had been derived entirely from some little efforts of his in the same direction. If he had begun to study the subject at an earlier date than Mr. Jackson, it was only another instance of what Richard de Bury said about the Mendicant Orders, that although they were the last labourers to enter the Lord's vineyard, yet they soon gathered up greater treasures of literature than their predecessors, the regular monks. If Mr. Jackson had utilised anything that could be legitimately referred to as his (Mr. Clark's) writings, it had been a pleasure to him to hear it illustrated with the charming views, and expressed in the agreeable language they had listened to with so much satisfaction. It was to the libraries of religious houses, especially to those professing the rule of St. Benedict, or the direct offshoots of it, that we owed our modern libraries. St. Benedict was not a prophet, and he could not foresee the extent to which his rule would be obeyed, and the numbers of volumes his votaries would collect, and, consequently, a library did not form any part of the original Benedictine plan. When books became too numerous to be placed in the *armarium*, which was usually in the cloister or in the church—the church first, and the cloister afterwards—the library had to be hitched into any place that could be found vacant for it. For instance, at Durham it was over the sacristy, which was at the end of the south-transept of the church. At Canterbury it was over the prior's chapel. At the great Cistercian house at Clairvaux it was in an independent position, as far as the church went—over the *scriptorium*; and in the same place at Cîteaux. Those libraries were all, as Mr. Jackson had told them, long, narrow rooms, with windows equally spaced. A fairly minute account of the Clairvaux library was fortunately in existence; and the catalogue of it was now in the library at Troyes. The catalogue of the library of Cîteaux was in the town library of Dijon. From those catalogues they could make out, to a certain extent, what the book-cases were like. Of course they had desks, because they were chained, and they must have had seats in front of them, in order to enable them to be used. It was distinctly mentioned that they had two shelves—four shelves, in all—in each bank, as they were called, from the French *banc*, and *banca* in Italian. Therefore he thought they were probably extremely like those which had so fortunately survived at Merton.

He had not yet been able to discover any example of either book-press or book-desk belonging to a mediæval monastery. He hoped some of those present would in their travels try and find such. It was almost impossible that there should not be one somewhere, though he had travelled a good deal in the hopes of finding one. A friend of his, M. Delisle, the Librarian of the Bibliothèque Nationale in Paris, told him that he had failed also. He had approached librarians, keepers of antiquities, curators of museums, &c., all over Europe without success, except at Zutphen, which had a very curious library of the old form, fitted with desks. The libraries of the religious houses were distinctly the prototypes of the lending library of modern times. They would find in the monastic customs, and also in their books, plenty of traces of the great care they took of manuscripts. The manuscripts very often had some injunction upon them to take care of them, or a curse called on the head of every one who should hurt or maltreat them in any way. But they never seem to have minded lending, provided a proper pledge was given. The customs of the house at Abingdon, near Oxford, said it was easier to fall back upon a pledge than to proceed against an individual; and it was that custom which enabled the first public libraries to come into existence. When he was at Assisi, in Italy, about three weeks ago, he had got hold of the library catalogue of the monastery, now preserved in the town library. They had a distinct lending library, of which it is clearly stated that the contents were *ad prestandum clericis et aliis*. Some three hundred manuscripts were in it; there were more in that than in the other. The great French libraries, no doubt, owed their preservation to the fact that they were useful to the neighbourhood; the neighbourhood knew how valuable the treasures were, and took care of them. At the Revolution the MSS. of Cîteaux were carried bodily into the town library of Dijon; and those of Clairvaux into that of Troyes; and at Paris the great libraries of St. Germain-des-Prés and St. Victor were taken into the National Library, where they might still be seen, to a certain extent, as the Fond St. Victor and the Fond St. Germain. Another interesting point he should like to allude to. In his judgment it was not difficult to discover, with tolerable exactness, how monastic libraries were fitted up; and the way to do this was to study the collegiate libraries of Oxford and Cambridge. In this respect Oxford was better off than Cambridge; the colleges were richer, and the book-cases were better designed and taken care of. It must be remembered that although colleges were founded, in the first instance, to counteract monastic influence, yet it was most unlikely that one

body of celibate persons would not copy to a certain extent from another, and as the monasteries had been many centuries in full swing before colleges were thought of, it was only natural that the latter should copy the library fittings used by the former. They copied their library statutes too. In the colleges of both Oxford and Cambridge it would be found that all those about lending and bringing the books back for inspection once a year, &c., were derived directly from the monasteries; and, by an attentive study of the book-cases of Oxford and Cambridge, they would be able to decide what the monastic libraries looked like—those libraries which Leland said he felt awe-struck at the very sight of. With regard to the way in which the modern book-case had been evolved from the ancient one, it was, as Mr. Jackson had told them, the genius of Wren that first introduced it into England, and the first library that Wren fitted up he (the speaker) had discovered since delivering that lecture which Mr. Jackson had been good enough to quote with approval. It was not the Trinity College Library, but that which Wren fitted up some twenty years before, viz. in 1675. The library for Dean Honeywood at Lincoln was the first library where book-cases were set against the wall instead of at right angles to it. So late as 1703 Cole, the antiquary, could speak of book-cases arranged in that way as *à la moderne*. Where did Wren get the idea from? He put the theory forward with great diffidence, but he suggested he got it from Paris, from the Bibliothèque Mazarine, which was fitted up by Cardinal Mazarin. And where did Mazarin get it from? The Bibliothèque Mazarine might still be seen. It was removed after his death to the building where the Institute meets on the left bank of the Seine. Mazarin, he was convinced, got that plan from the Escorial, which was fitted up in 1585, and was, he believed, the first library in Europe where the book-cases were placed against the wall. Such a library would become famous at once, and would be likely to be copied. Wren got the idea from Paris, where he studied a good deal. Another thing he would mention, in case anybody should go in that direction. It was interesting to remember that there were four most splendid desks belonging to the Lincoln library. There was an old timber library there on the east side of the cloister, extending part of the distance from the corner of the cloisters to the chapter house, and that was fitted up with great desks in the Zutphen style. They were just at a convenient height for people to sit at, and were double desks, finely ornamented with great poppy-heads, and carved work on the top. Four of those might still be seen in the Chapter Library, where they were extremely well taken care of. That exhausted the mediæval evidence he had been able to find. There was a very curious old library at Wells, over the cloister.

It had been originally built in the fifteenth century, and was fitted up afresh by Dean Bathurst after the Restoration, between 1670 and 1672. The Dean was also President of Trinity College, Oxford, and evidently wished the library of his cathedral to be fitted with book-cases like those of his college. So he told a carpenter of the day to copy them. The order was faithfully carried out; and, though chaining was no longer the fashion, a book-case was evidently not thought complete without preparation for it, so the carpenter employed provided a complete apparatus for chaining, but never a chain was used. It was a curious instance of a survival of form in furniture. There was not the least trace of chaining on any one of the books, nor in any of the accounts was there any payment for chains.

Mr. H. W. BREWER [H.A.] said he had listened with great interest to Mr. Jackson's admirable Paper, and he really seemed to have exhausted the subject. He came across a notice, a short time back, of a will made by the celebrated John Carpenter, founder of the City of London School, and compiler of the *Liber Albus*, who also paid for the paintings round the cloister of Old St. Paul's, representing the Dance of Death. John Carpenter appeared to have had an extremely good library, and he bequeathed the bulk of it to the library which had been founded by Richard Whittington at the Guildhall. He stipulated that the books should be chained, so that they should be open to all the poor scholars of the City of London who might wish to consult them. The library of John Carpenter seems to have comprised a very interesting collection, and had one book which would especially interest the Institute. He bequeathed to a relative, Dr. John Carpenter, afterwards Bishop of Worcester, "a book upon Architecture which was given to me by William Cleve." A book upon architecture of the middle of the fifteenth century must have been a great curiosity. William Cleve was Controller or Master of the Works to Henry V. and Henry VI., and he added buildings to the royal palace at Westminster, and built, he believed, the fine hall at Eltham. He also executed works in connection with the Tower of London and Sheen Palace. There was a curious letter of his extant, addressed to the Privy Council of Henry VI., in which he stipulates that a sum of £1000 should be set aside for him for the works he had carried out at Eltham. He said he wished that sum to be put on one side for him, because, in building the kitchen at the Tower of London, he had not received so much as forty pence!

Mr. H. H. STATHAM [F.] proposed a vote of thanks to Mr. Jackson, for what, he said, was one of the most delightful and interesting Papers they had had at the Institute for a long time, partly because of the realism with which he had traced out the history of the development of the Library,

and its practical arrangements. That was the point of view, perhaps, from which it was most interesting to architects. They had been shown the practical conditions out of which, by degrees, such a library as that designed by Hawksmoor, shown among the last illustrations, became gradually developed, from the practical necessity of having books arranged in such a way that they could be read with a light upon them; and the production of the actual chains and other articles with which they were secured to the cases, gave the realism which almost brought them face to face with the people who had used those books. There was another very fascinating thing, too, in the contemplation of the interest which books must have had for people just at the time of the revival of learning—so different from the present day, when people were almost smothered in books they did not want. At that time books were hard to come at, but they were the opening of a new world of ideas. As Chaucer said, in reference to his scholar:—

“For him was lever han at his beddes hed
A twenty boke, clothed in black or red,
Of Aristotle, and his philosophie,
Than robes riche, or fidel, or sautrie.”

The reference to “clothed in black or red” gave an idea of the kind of binding used for books in those days. In regard to that subject, he was in favour of good binding for good books. Nowadays they were bound in a very flimsy fashion indeed, for the most part. If a book were worth reading, it was worth being bound well, not necessarily expensively, but at least solidly. There was a clever little book by Mr. Henry Stevens, of Vermont, entitled, “Who spoils our new English Books?” and the flyleaf had various quotations on the subject. One of them was a sentence from the Bible: “Whom Satan hath bound.” Furthermore, though we had arrived at the days when books were no longer chained, yet human nature had not altered much. Only three days ago he had read in the hall of a well-known London club, frequented by literary men, a notice that such and such a volume “has been missing from the reading-room for a fortnight. The member who took it away in mistake for his umbrella is invited to return it”!

PROFESSOR BALDWIN BROWN [H.A.], M.A., in seconding the vote of thanks, said it seemed quite in accordance with the best traditions of the Institute to find one who as creative artist had so thoroughly identified himself with the modern life of architecture, going back with such freshness of interest to the places and buildings connected with the past history of his art. There was one part of Mr. Jackson's Paper which came home to him personally, namely, the reference to the early days of Oriel College, of which he had the honour to be a member. In the early days of Oriel he said there was a doubt whether

there would not be more books than men. Oddly enough, that same difficulty arose in his own time. He happened to be at Oriel College at a time when very few men were reading for honours. There was a certain gift of books devoted to those who were reading for honours, and it was somewhat difficult to find a proper recipient for the books, and those who were reading for honours got more than their share of the books because there were more books than men at that time. With regard to that branch of the subject which, as Mr. Jackson said, time did not permit him to touch upon, namely, the character of the books, as well as their housing, one could not help feeling the debt one owed to the monastic libraries for preserving to them the treasures not only of sacred, but of profane, literature. He was reminded of an earlier monastic library than any mentioned that evening, namely, the famous library of St. Gall, in Switzerland, which possessed a catalogue going back to the tenth century. That catalogue, which had been printed, showed that the library contained profane books—*i.e.*, copies of the classics—just as it contained copies of the Gospels, of the Psalms, &c. Books like Vitruvius and the other classics had been preserved to us owing to the fact that they were contained in these monastic libraries. In connection with the old Benedictine monastery of St. Gall, he might mention that that arrangement, which had been explained as being common in the old monastic libraries, of leaving a desk in between two windows, was found in the plan for the monastery of St. Gall in the early part of the ninth century. There was a building devoted to books in the corner between the chancel and the north transept. It was square, not long, with windows on two sides of it, and in two storeys, with the place for writing the books, or *scriptorium*, below, and the library, or place for keeping them, above. The windows were arranged with desks between every two, so that that arrangement went back to an earlier date than Cîteaux or the other religious establishments that had been referred to.

MR. E. W. HUDSON [A.] said there was one library which had not been mentioned, but in which they must all feel great interest, and that was the library founded at Paris by St. Louis, King of France. St. Louis got his idea from the East. He was ashamed, when he came to his capital, to find that there was no fine library there, and he established one in connection with the palace. It was, he understood, on the north side of La Sainte Chapelle (A.D. 1242–47), the magnificent work of Pierre de Montereau. He should like to ask for some information with regard to the extent of that library or its arrangement, or any traces that could be found of it. It was the one which the King, himself a man of literary tastes, attended, and not only lectured on, but explained individually the various books to the

students. This was probably the pioneer of free libraries in Christendom. Even as the work of such a great architect it must be of considerable interest to us. The building, a plan only of which was shown in Viollet-le-Duc's *Dictionnaire* as an annexe to the Sainte Chapelle, was quite a small structure; but it was of three storeys, the two lower ones being sacristies to the chapels, and the upper one the repository for the manuscripts (*Trésor des Chartes*). A small room like that on the third storey, reached by a turret staircase, could scarcely have been the public room where all this instruction took place. It was quite a small room of only three bays, just about one-fifth of the area of the chapel itself, and its length was only about the width of the latter. It had, like the chapel, an apsidal termination. He should like to know whether this was the entire public library, the precursor of the larger one at the Louvre, which became the nucleus of the Bibliothèque Nationale of France. Some corresponding members in Paris might, perhaps, be able to give particulars of the most interesting among the ancient French libraries. There was the library at the Conservatoire des Arts et Métiers, which was not intended for such purposes, but was the refectory of the monastery, designed by the same architect. It showed the adaptability of the style at that time and subsequent times to the purpose of a library, and also repudiated the statement, so often refuted by mediæval buildings, that Gothic architecture could only produce

"Windows that exclude the light,
And passages that lead to nothing."

It was only necessary to mention the library at Winchester College, which had been housed for over 250 years in a gem of a chapel, built in 1430 in the cloister garth by John Fromond, and the library of the Arts et Métiers, housed in the old refectory of St. Martin des Champs, designed by De Montereau, and measuring 138 feet by 23 feet, to which he had referred. One is struck by the beauty of design and convenience of furniture of mediæval libraries, although the comfort is not such as modern ideas require. Old MSS. and drawings show rotary tables and lecterns for holding several books at one time, sloping desks with cords and weights to keep the MSS. flat, the slopes being hinged and fixable at various angles. In some cases the revolving lectern was fixed to a square box, which formed at the same time a seat and contained a row of books beneath. A central stand, or a sconce for the candle required for night study, was also provided. The library of Charles V. in the Louvre is described as being most elaborately fitted up.

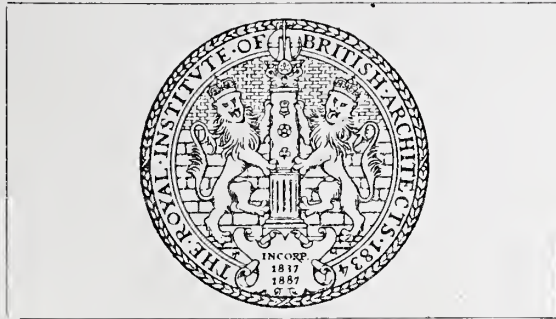
MR. W. H. ST. JOHN HOPE, M.A., said that if architects and architectural students would keep their eyes open when visiting our monastic ruins, they would find a number of traces of those very

libraries to which reference had been made. For instance, in the cloisters of places like Worcester, Kirkstall, Fountains and elsewhere, there were queer recesses, generally in the east wall, that unquestionably belonged to the safe-keeping of books, and it would generally be found that there were two of them, one quite small, which contained books of reference required by the novices and others; the other the library proper, which was represented in the Cistercian abbeys by a room, only between four and five feet square, between the transept and the chapter house. There was a very good example at Kirkstall; and from an inventory which was made of the belongings of Meaux Abbey, by an abbot who apparently had nothing else to do—he had made an inventory of everything, down to every pig and sheep—they knew every book in the cloister library and exactly where it was placed, and how the shelves were arranged. A little ingenuity would show that that description applied to a cupboard like one still existing at Kirkstall. There was an interesting example at Furness, in precisely the same place, only it had a larger area, and it had a fellow cupboard on the other side of the chapter house, showing that by the time Furness was built, which was considerably later than the foundation of the monastery, they were getting more books and wanted more room to put them in. Then there were places like Castle Acre and Fountains, where there were traces of an upper storey over the gallery connecting the infirmary buildings with the church, with a wide and ample stair leading up to it from the gallery itself. That stage was paralleled by the later libraries, of which that at Canterbury was an example. Then besides the buildings there were occasional glimpses to be got from documents which helped considerably to explain the arrangements of these mediæval libraries. There was the inventory at Meaux already referred to, and a corresponding inventory of the books of a little abbey at Titchfield, near Southampton, which enabled one to discover the arrangement which existed there in precisely the same way; and he had had the satisfaction of calling Mr. Clark's attention to a book lent him by the Dean and Chapter of Canterbury, where a monk had recorded the repairs which were necessary in the library at Canterbury. This monk went round to the presses in the library and noted down everything that wanted doing, whether chaining, or clasping, or what not; and from this very curious memorandum Mr. Clark had been able, with his accustomed ingenuity, to recover the exact arrangement of the library at Canterbury, the number of the bookshelves, their precise position, and in fact to draw the whole thing out practically to scale. This showed what dainty little crumbs of information were waiting to be picked up if people would only keep their eyes open.

MR. WILLIS CLARK, with regard to the

French libraries mentioned by Mr. Hudson, said that there was probably a chapter about the Sainte Chapelle in Henry Franklin's book on *Les Anciennes Bibliothèques de Paris*, a work in three volumes published on the history of Paris by order of Napoleon III. In the same book there were details given of a great number of mediæval libraries—one very interesting one, which had only lately been destroyed, belonging to the Collège de Navarre. That was on the same plan essentially as the others which had been mentioned by Mr. Jackson, with the windows placed at regular intervals, only that they had long narrow slits at least three times as high as any of the English ones. He had a photograph of it, which he hoped to reproduce in the work he was now engaged on. There also remained in Paris one other interesting thing, which any visitor to Paris could see—namely, the old Bibliothèque St. Geneviève, which was very little known. Almost every one knew the new Bibliothèque de St. Geneviève, but the old one still existed in the Lycée Henri Quatre. The porter would show the visitor upstairs, where he could trace out the library, cruciform in shape, now turned into a dormitory for the boys. All the ancient libraries were gone with the exception of this one.

MR. T. G. JACKSON, R.A., in reply, referred to the catalogue still existing of the old library at Oriel College. It was mentioned first, he believed, by Dibdin, who described it as a roll. It existed now, however, as a small book, having been since bound up, and it contained a catalogue of the library very soon after the foundation of the college. All the books were referred to by the first word on the second page—such and such a book, of which the first word on the second page is so and so. Whether that was to guard against the difficulty that might arise from the loss of title pages he did not know. [Mr. Willis Clark intimated that that was the usual way of cataloguing in the old libraries.] Mr. Jackson, continuing, said that as an architect he was naturally jealous of the reputation of Wren, and he would like to suggest that he possibly might not have borrowed that new departure in book-shelves from anybody. If one looked at the outside of Trinity College Library, it would be seen that it consisted of an arcade below, and a range of lofty windows which seemed from the character of the design—it was a lofty room—to come naturally high up upon the wall. To have brought them down nearer the floor would have made a disproportioned window. Having that high blank wall under the windows, it would naturally occur to Wren that it would be a good opportunity to line it with books. There was nothing else to put there; the windows were high above the head, they lit the pew sufficiently, and there was a blank wall which seemed to invite the bookcase; therefore, he would believe that Wren did not borrow from anybody, but invented this new plan for himself.



9, CONDUIT STREET, LONDON, W., 21st May 1893.

CHRONICLE.

The Loan Library.

With a view to extending the usefulness of the Loan Library, the Council have resolved that for a year—so as to see how the new system will work—the rules 10 and 11 relating to the Loan Library on pp. 281 and 282 of the current **KALENDAR**, shall read as follows:

“10. Application for works must be made personally, except in the case of members of the Institute, who may send a written request by a person authorised to receive and sign for them, *or may apply in writing to the Librarian for the volume to be sent by post or rail.*

“11. A borrower is required to sign a voucher for each book he takes out, and is responsible for the work so long as the voucher remains uncanceled. A book will not be accepted as returned unless it be delivered by hand to the officer in charge at the Library during Library hours, and the borrower's receipt obtained in exchange. *In the case, however, of a member of the Institute borrowing through the post, his letter of request shall be countersigned by the Librarian on the day when the volume is despatched, and shall be regarded as the member's voucher. Volumes shall be despatched at the cost of the Institute and returned at the cost of borrowers. On the return of a book the Librarian shall at once send the member a receipt. Books due for return on days when the Library is closed must be returned on the first following day when it is open.*”

Fireproof Stairs.

Mr. FRANK CAWS [F.] writes:—

The article by Mr. Simpson on the above subject in the **JOURNAL** of the 29th January last seemed to me to suggest the need for action, not only on the part of individual architects and builders, but also on the part of committees, and especially of municipal bodies entrusted with the guardianship of the life and property of the people. I therefore sent the Mayor of Sunderland a copy of the article, suggesting that he should bring it to the special notice of the Sunderland

County Council, who are at present engaged in remodelling their Building Byelaws. I also obtained, from leading architects of Edinburgh and Glasgow, letters confirming the statements made in Mr. Simpson's article, and the Mayor of Sunderland laid these letters also before the Committee of the Corporation who are framing the new byelaws.

I have now received from the Mayor the enclosed copy of the result of these proceedings, and I trust the Council at large will approve these proposals, and that other Corporations will speedily follow the lead of Sunderland in thus safeguarding their people against fire.

Proposed Byelaws respecting Floors and Staircases.

Every person who shall erect a new public building shall construct the floor of every lobby, corridor, passage, and landing, and every flight of stairs in any staircase in such building, and all the supports of every such floor and flight of stairs of incombustible and fire-resisting material, and of adequate strength.

Provided always, that the foregoing requirements shall not apply to the floor of a lobby, corridor, passage, or landing, or to any flight of stairs intended to be used otherwise than as means of access to or egress from any part of a public building intended to be used for any public purpose.

Every person who shall erect a new building intended to be used, or which may, in the opinion of the Corporation, be capable of being used as an hotel, inn, or public-house, or a building intended to be occupied in flats, or which, in the opinion of the Corporation, may be converted in the future for such occupation, or a building of more than three stories in height, shall, if required by the Corporation, construct the floor of every lobby, corridor, passage, and landing, and every flight of stairs in any staircase in such building, and all the supports of every such floor and flight of stairs, of incombustible and fire-resisting material, and of adequate strength.

I hope and trust the day is coming when to construct non-fireproof dwellings will be an offence against the law of the land. Meanwhile I hail the above proposed byelaws as a step, or rather a good long stride, in the right direction; and I think the JOURNAL, for publishing Mr. Simpson's exceedingly valuable article, deserves the thanks of all interested in this much-needed reform.

REVIEWS. LXXIII.

(194)

CLASSIC DECORATIVE WORK.

Examples of Greek and Pompeian Decorative Work: measured and drawn by James Cromar Watt. Fo. Lond. 1897. [B. T. Batsford, 94 High Holborn.]

This fine work has been aptly dedicated to the present distinguished President of the Royal Academy, Sir Edward J. Poynter:—

In gratitude for encouragement,
In admiration of his achievements.

Mr. Watt's book reveals an appreciation of the refinement of Greek ornament seldom met with nowadays. Though the classical revival produced a number of volumes dealing with the subject, considered more or less as a whole, it may be

doubted if any work previously given to the public excels, or even equals, that just published in the true feeling and perception of the character of this subject.

Mr. Watt is the master of a beautiful line, and owing to excellence of reproduction his drawings retain all their original charm.* His work, moreover, shows that peculiar care which goes far to inspire complete confidence in his accuracy, and he has had the courage to dispense almost entirely with such an adventitious aid to the appearance of his drawings as shading, for which he cannot be too highly commended when treating work of this kind.

Though the exact practical value of a book like that now under consideration to practising architects may be a matter of individual opinion, no one can venture to doubt, or fail to appreciate, its educational value to the student of any branch of art, more particularly as a demonstration of the importance of regulating the form of the ornament by the sectional outline which it clothes and decorates, the value and composition of curves, and the conventionalised treatment of natural forms, all great postulates of Greek art. To the antiquary and the archæologist also, without doubt, such accurate records of many of the famous examples from the great national museums of Athens, Naples and Palermo, as well as many other less known perhaps, but certainly not less interesting, will be of great value.

It has frequently been said that the Greeks were not remarkable for any great variety in their decorative themes. This is doubtless the case, but Mr. Watt's book serves to show us that at all events it was not a lack of inventive capability which created these limitations, for we invariably find their anthemions, frets, and guilloches treated with the infinite variety of fertile imagination.

In several of the plates, notably in Nos. 4 and 5, it is interesting to notice the alien influences of Egyptian and Assyrian work, while the examples given of Greek colonial work show once more that cruder and less refined treatment, the result of severance from the parent stem.

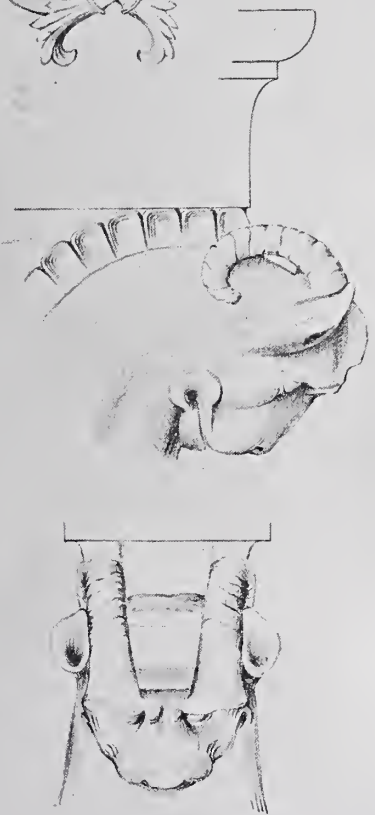
Mr. Watt has grouped the different subjects of his illustrations in a useful manner, thus enabling us to compare with facility each variety of ornament, the treatment of Ionic capitals, &c. He has devoted no fewer than ten plates to the illustration of some of the bronze candelabra at the Naples Museum, and he gives three other sheets to one of the famous tripods from the same collection.

If there are any faults to be found in Mr. Watt's book they are at all events minor faults, and they do not affect the value of the book as a

* The three illustrations to this review are from the original pencil drawings, kindly lent for this purpose by Mr. J. C. Watt himself. It is impossible, however, by the ordinary processes of reproduction to do justice to the extreme beauty and delicacy of his work.—Ed.



2' 11 7/8"



PLAN
OF ABACUS

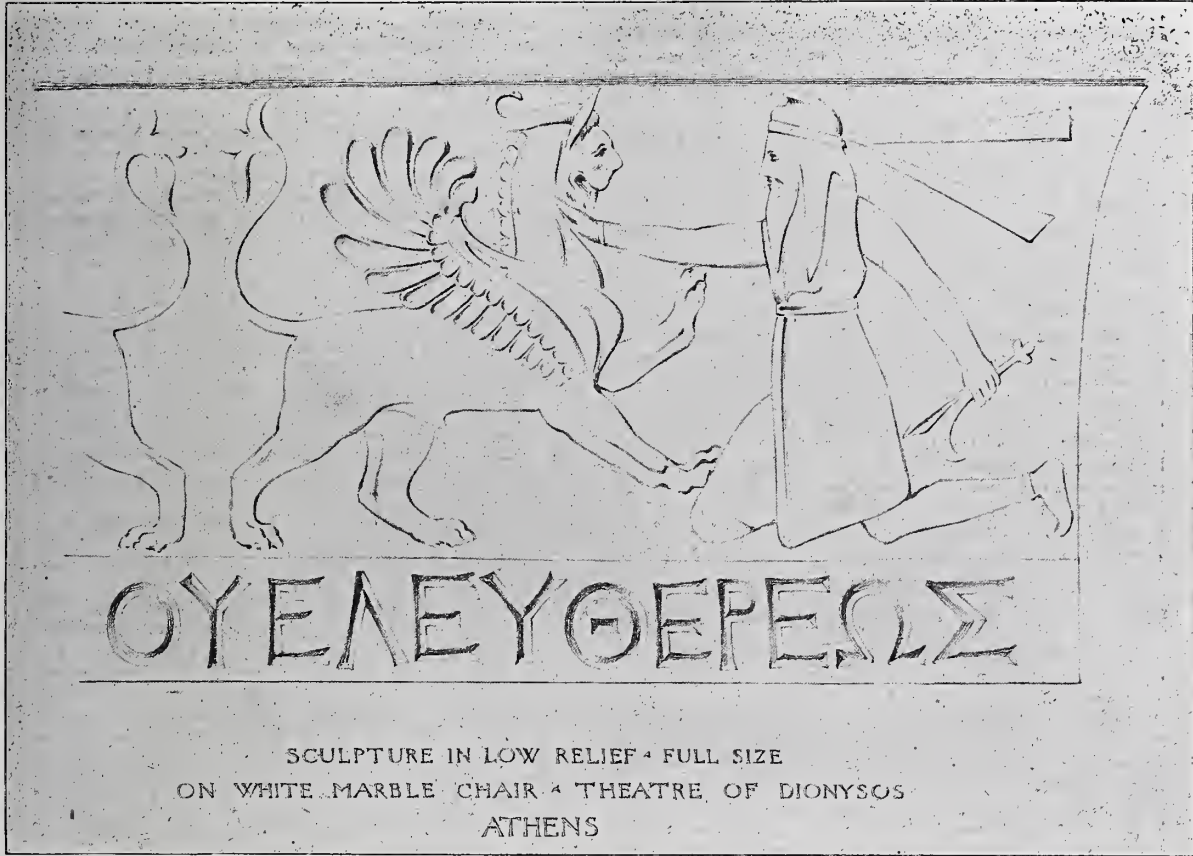


WHITE MARBLE CAPITAL
ELEUSIS

whole. It is a pity, for instance, that the little notes about the various subjects illustrated, given in the list of plates, were not relegated to a more useful position on the drawings themselves, and the numbering of the illustrations is not all that might be desired and does not facilitate easy reference to any particular sheet. The reason

given for placing one of the drawings obliquely on the page seems scarcely adequate to explain why some less clumsy expedient was not adopted, to obviate what in reality mars the otherwise charming and excellent manner in which the book has been turned out by Mr. Batsford.

R. S. BALFOUR.



ALLIED SOCIETIES.

The Devon and Exeter Society.

At the Annual Meeting of the Devon and Exeter Architectural Society, held on the 7th May, the officers and Council for the ensuing year were elected as follows:—

President, Mr. James Crocker [F.]; *Vice-President*, Mr. H. G. Luff [A.]; *Council*, Messrs. Arnold Thorne [F.], Charles King, G. S. Bridgman, C. J. Tait [A.], S. Dobell, J. Jerman [F.], B. P. Shires [A.]; *Hon. Treasurer*, Mr. C. Ralling; *Hon. Secretary*, Mr. Harbottle Reed.

In addressing the Meeting, the outgoing President, Mr. James Hine [F.], said that his successor Mr. James Crocker's early work gave him the keynote of a few observations he should like to offer. The Royal Institute of British Architects had always recognised that there was no more valuable part of a student's training than the study of good examples of ancient buildings, and the sketching and, more particularly, the making exact measured drawings of such buildings. The idea of some might be that this tended to make a man a plagiarist; but experience

showed that this kind of work gave him a mastery of his art, and a degree of freedom in designing which he would not otherwise possess. In this respect what was good for the painter was good for the architect. Their distinguished Devonshire painter, Sir Joshua Reynolds, said to the Royal Academy students, 130 years ago, that he whose mind had been disciplined by long converse with the great masters, and who was best acquainted with the compositions of others, would be the most capable of new combinations and originality. The period of pupilage was obviously the time and opportunity for cultivating the artistic side of an architect's work, because—as each found out—in the actual carrying out of an architect's business he had often to face very practical duties to the exclusion altogether of æsthetic considerations. Loyal, however, to his profession of a noble art, his principal aim should ever be to represent it adequately. It was much to the honour of Mr. Crocker that at the commencement of his professional career he had distinguished himself by securing an Institute Silver Medal for his most admirable set of drawings and details of Exeter Guildhall, and to

their Hon. Secretary (Mr. Harbottle Reed), who had been recently awarded the Grissell Gold Medal for his clever design for a wooden church. There was no work so open to criticism as the work of architects. Public and private, free and open, candid and spiteful, it lasted for all time, or as long as the building stood, and happy was the architect who was not very thin-skinned. . . . Why was it that in the more modern towns, fashionable and unfashionable, which had sprung up during the present century the impress of architecture was so imperfect and unsatisfactory? Because for the most part they had not been the creations or work of architects. This had been a misfortune for the profession, but it had been a greater misfortune for the towns, and the occasion of numberless blots on the face of Nature. Occasionally it had, no doubt, been possible to carry out in such new towns a well-considered and effective design; but one good building alone could not make a beautiful street. In an age like the present, when nearly everything pertaining to a building could be produced by machinery, including carving, moulded bricks, terra-cotta, doors, windows, and reversible materials of all kinds that would go anywhere and do everything, there must necessarily follow great monotony and absence of artistic interest in the buildings largely composed of them. Trade-catalogue architecture might be very well from a strictly commercial and economical point of view; but the tendency of it was to destroy all individuality in a building, and to drag architecture proper to oblivion. Buildings were being pulled down in all parts of England possessing historical interest and features of great architectural beauty. Were they to be supplanted by lifeless structures of this automatic type? This was a subject which demanded the consideration of all architects. Their hope must be that in the coming century, as in all great periods of architecture, buildings might be more and more the reflex of the individual mind of the architect.

MINUTES. XIV.

At the Fourteenth General Meeting of the Session, held on Monday, 16th May 1898, at 8 p.m., Mr. H. L. Florence, *Vice-President*, in the Chair, with 27 Fellows (including 14 members of the Council), 23 Associates (including 2 members of the Council), 2 Hon. Associates, and several visitors, the Minutes of the Meetings held on the 2nd May 1898 [p. 358], were taken as read and signed as correct.

Mr. Edward James Bridges [A.], attending for the first time since his election, was formally admitted, and signed the register. Mynheer Jan Stuijt, architect, of Amsterdam, was introduced to the Meeting by the Chairman.

The following candidates for membership, found by the Council to be eligible and qualified according to the Charter and Bye-laws, and admitted by them to candidature, were recommended for election, namely:—As FELLOWS, Michael Francis Cavanagh [A., *qualified* 1888], Vice-President of the West Australian Institute of Architects (West Australia); John James Thomson [A.]; Charles Edward Bateman [A., *qualified* 1895], President of the Birmingham Architectural Association (Birmingham); James Souttar, President of the Aberdeen Society of Architects (Aberdeen); Frederick William Lacey, M.Inst.C.E. (Bournemouth); George Campbell Sherrin; William Banks Gwyther, Assoc.M.Inst.C.E. [A., *qualified* 1886], (Bengal, Calcutta). As ASSOCIATES, George Benson [*qualified* 1885], President of the York Society (York); Frank Peck [*qualified* 1895]. As HON. FELLOW, Sir Edward John Poynter, President of the Royal Academy.

A Paper, by Mr. T. G. Jackson, R.A., on THE LIBRARIES OF THE MIDDLE AGES, having been read by the author, and illustrated by lantern slides, a discussion ensued, and a vote of thanks was accorded the author by acclamation.

The proceedings then closed, and the Meeting separated at 10.10 p.m.

LEGAL.

The London Building Act, Section 43.

Paynter v. Watson, heard before Mr. Justice Wills and Mr. Justice Kennedy, on 9th May, was a special case stated by a Metropolitan police magistrate raising a new question under the London Building Act 1894, section 43, as to the right of an owner of premises to rebuild them in a different manner from the old buildings without first obtaining the leave of the London County Council.

The appellant was Major George Paynter; the respondent was the District Surveyor of the district of St. George's, Hanover Square north. The case was stated on an appeal to the magistrate from a notice of objection served by the district surveyor under Section 150 of the Act. The appellant had served a building notice under Section 145 on the district surveyor, and had annexed thereto the plans and sections of the new buildings which he proposed to erect on the site of Nos. 12 and 13, Grafton Street. These plans showed that the new buildings would not cover any ground that was uncovered before, but the arrangement of the upper floors was such that a certain amount of the old existing air-space would be occupied by the new buildings, which were to be higher and to contain more cubic feet than the old. The magistrate found that the plans of the proposed new buildings did deviate in certain respects, and particularly in regard to the height, from the plans of the old buildings, and he held that the word "deviate" in Section 43 (2) applied not only to the ground covered by the old buildings, but also to that of the buildings in respect to height and width and depth on the several floors, and he therefore affirmed the surveyor's objection.

Mr. Macmorran, for the appellant, contended that the owner was within his rights so long as he covered no more or different ground with the new buildings than the old buildings covered.

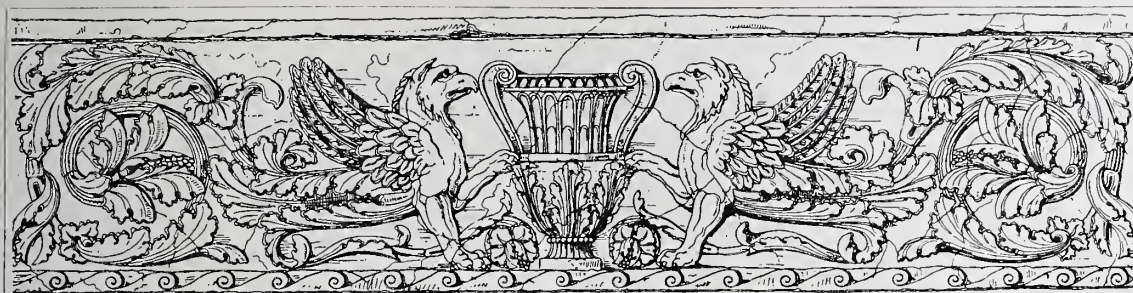
Mr. Avory, for the district surveyor, pointed out that by Section 41 all new buildings were to leave air-space from the ground upwards. Under the law before this it was enough to have air-space from the ceiling of the ground floor. As, under the old law, the ground floor did not necessarily have air-space, it followed that if a person re-erecting old premises chose to build up straight above the ground floor no air-space would be left at all.

The Court supported the decision of the magistrate.

Mr. Justice Wills said he had in this case no doubt, and had not had any during the argument. All depended on what was meant by "the plans showing the extent of the previous existing domestic building in its several parts" in Section 41 (1). It would be the most extraordinary synonym for ground plans possible. It was clear that a complete set of plans was intended. If a person chose to rebuild an old house exactly as it was, he might get the protection of this section. The cardinal condition of the section was that no ground previously uncovered should be covered. But if a person desired to deviate in any respect, and not in one respect only, then he was subject to the jurisdiction of the County Council. The general purview of the Act was the limitation of private rights over property for the general good. It could not be doubted that the magistrate had put the right construction on the section. If the building owner desired to alter his old buildings, he must submit to the discretionary sanction of the County Council.

Mr. Justice Kennedy concurred.

A Correction.—Mr. Owen Fleming [A.] writes that his remarks at the Annual General Meeting, advocating an annual grant to the Science Standing Committee for original investigation, should read: "There is great need of information as to the strength and making of *concrete*"—not "brick," as printed in the report [p. 361].



THE LAGOONS OF VENICE. By GIACOMO BONI [*Hon. Corr. M.*].

TEN years ago there was a project for widening some of the streets of Venice, and for opening new ones in imitation of those which run from one end to the other of a modern city. At that time, I said to myself it was strange that, if this work had to be done, the fifteenth century had not thought of doing it, when the population of Venice was half as large again as now, when the bulk of the commerce of the East and West centred on the Rialto, and when there was a beautiful original and living art which would have impressed its character on what was done.

It often happens that, in enlarging a street, not only are the houses pushed back more than is necessary, but everything is torn down to give place to new and pretentious monstrosities, and to display, one after the other, modern imitations of ancient buildings, repeated until one is sick of the very originals. Or even an attempt is made to better these originals, there being certain periods, as Leopardi said, when, to say nothing of other matters, the effort is made in art and in teaching to remake everything because people can make nothing new themselves. The project of widening the streets of Venice was not necessary for the development of modern industries, because all those natural to the place are either prospering now or might be revived without any such rebuilding, and therefore the fancied need for broadening and straightening the streets seemed to me a mere aberration.

The disastrous fire which, in the year 64 of the present era, destroyed two-thirds of Rome, was a scheme of Nero's, just as if, as Suetonius says, the unevenness of the buildings and the congestion of the ancient quarters irritated him. According to Tacitus, this fire destroyed the monuments of ancient time which many of the older inhabitants remembered and which could not be replaced. "The reconstructions were in accord with a plan for the entire rearrangement of the city with broad streets and freer quarters, though some believed that the ancient form of the city was more healthy, because the high houses and the narrow streets kept out the sun's rays which now beat down with unbroken ardour." (*Annales*, xv. 43.)

The worst parts of the scheme for modernising Venice were not allowed to be carried out, but the new streets which are already constructed are like large trenches, into which the sun pours until it melts the asphalt pavement. On the other hand, little has been done to clear and regulate the canals, and nothing whatever underneath the city in making tunnels where the sea-water might flow freely and maintain the constant scour on which the purity of the water and the health of Venice so much depend. Instead of sanitary works of this kind, we are threatened now with a new impediment: a second bridge over the lagoon, which must necessarily cause the accumulation of mud, and check the flow of the too gentle tide.

Whoever, with the blood of the *zente de mar* in his veins, has been for many years, as I have, far from this my native city, travelling through different lands, must have felt his

love for her increasing, stirred by the records of her which he finds scattered in other countries.

In Istria and Dalmatia, and in the Greek islands, the Venetian civilisation left marked traces in the architecture, and even in the dialects which have the forms and accents of Goldoni, such as are found among a few old people in Venice herself. In the interior of the Peloponnesus there are still used silver coins with the winged lion, and the people speak of



MAP OF THE LAGOONS OF VENICE.

Venice as the "beautiful one." On the mountain of Erix, on the extreme point of Trapani, the women, wrapt in their long black Venetian shawls, remind one of the Greek Tanagra figurines, and the shepherds on the rocks watching the sea never get tired of asking one questions on the beauty of Venice, her canals, and her lagoons. In the village of Kelmscott, near the sources of the Thames, in the house of William Morris, who brought to life again in Northern Europe the arts of coloured glass, of tapestries, of weaving, and of artistic printing, among the learned and thoughtful people who are England's greatness, I felt bursts of joy that almost overcame me at hearing my native city spoken of with more than filial love, and at



THE LAGOONS OF VENICE. From a wood-cutting of the year 1500, by Jacopo de' Barbari.

realising how much inspiration the most beautiful of the cities of Italy still continued to dispense.

A student from the extreme East called to my attention that the Japanese name of the narcissus (*suisen*) conveys the idea of the water out of which it grows. To Théophile Gautier, Venice, seen from far off on the lagoon, seemed a shell of mother-of-pearl bristling with points and (without any poetic license) in her true element.

Only a few years are necessary for one to perceive how the conditions of the lagoon are becoming more and more insanitary, owing undoubtedly to causes imposed by modern engineering works, by the railway bridge, the filling up of part of the lagoon with refuse, and the fish-hatching stations. After leaving the station of Mestre one crosses high and fertile fields, followed by others more marshy, and then the line is only supported by the embankment which leads to the beginning of the bridge; here the submerged land begins, and we have little brackish lakes separated by mounds on which grows a meagre useless herbage. Then comes the lagoon, quite neglected, which the ordinary tide leaves in too great part uncovered, so that sea-weeds die, and molluscs and water-insects rot in the sun. The stone railway bridge, two miles long, weakens the transverse tidal movement of the water in that part of the lagoon, which has life only from the undulations caused by the scirocco on the one side and the Greek winds on the other. The much-needed tidal motion is impeded by the numerous large piers of the bridge and by the embankment, and has become now so insufficient that, in the signal-stations at the end of the bridge, the mortality from malaria would be one hundred per cent., if the railway company did not have recourse to the expedient of changing the watchmen every twenty-four hours, and of keeping them saturated with quinine.

It is to this sad region the new roadway would conduct the Venetians, by a bridge which could never be shaded by trees without filling the lagoon, and so intensifying the malarious conditions; while, if a promenade were wanted from San Nicolò del Lido to the Port Alberoni, that is to say, along the lagoon and by the edge of the sea, there might be made a walk of the most wonderful beauty—pleasant, and healthy; and it could be rendered more beautiful still by the shade of the pines.

Doctor Paluello, a Venetian of great experience, has noticed that malarial diseases have become of late more frequent in Venice; and everybody can understand that if a new bridge is constructed, and another stretch of the lagoon is shut off, there will be nothing left to do but to erect a temple to the goddess Fever.

The health of Venice depends on the daily flow and ebb of the sea-water which, entering through the ports, flows up the canals, and spreads over the marshes and the lowlands. The "Serenissima" Republic, jealous guardian of the watery plain which circles Venice like a wall, and distinguishes her among the cities of the world, threatened whoever made encroachments on its freedom with the same penalties as were inflicted on those who violated the sacred walls of the Fatherland. In our time, on the other hand, too many permissions have been given, one after the other, to make new land and to drain pools which, even though they were not very deep, played a necessary part in the movement of the water of the lagoons. With the modern progress of agricultural studies, and with the extension of the lowlands in the districts of the estuary, easily approached through navigable canals, it would be possible to turn into fertile land, by means of the salts which it contains, the greater part of the 300,000 cubic metres of mud which are annually dredged from the channels, and then diffused in the waves of the Adriatic, to be brought back by the following tides.

For every cubic metre of mud excavated from the surface of the flats there would enter at the port of Lido one cubic metre more of water—sea-water, salt and pure—which would pass twice a day, like a disinfecting wash, through the canals of Venice, dragging with it and

imparting a little more life and motion to the water of the canals, now a sluggish green solution, which can hardly make up its mind to thread the labyrinth, and seems to have exercised a fatal influence on the Venetians since the time when Venice forgot with what great solemnity she celebrated her marriage with the sea.

If we wanted to excavate, we should have a hundred million cubic metres of this fertilising mud, which might serve to fill up the hollows or to raise the level of the lowlands and of the dead marshes beyond the confines of the lagoon, and to give growth to vines and grain where now only bedding for cattle, miasma, and mosquitoes flourish. A little excavation made in the canals of Torcello freed for several years the unhappy fishermen of that island from fever.



MALARIOUS MARSHES OF VENICE: VIEW FROM THE BELFREY OF TORCELLO.

The filling up, carried out by the engineer Piemonte and his associates, over five hectares of lowland which they owned on the Lido, where the rain water stagnated through lack of sufficient drainage, has changed the spot into a first-rate vineyard, doubling its value, and making it suitable for the construction of pleasant villas.

The Venetian lagoon has a special need of these life-giving dredgings to counteract the deadening action of the railway bridge and of the dykes which carry forward the port of Lido three kilometres into the sea. There is need also of connecting the little closed lakes, which too rarely feel the benefit of the tide. The mud from the dredging might be put along the edge of the live lagoon, where it could dry and harden, and then afterwards be carried by means of small railroads into the low and damp lands, some of which now cannot be cultivated except by costly artificial drainage. Merely from San Giuliano to the Dosso delle Giare, the estuary of the lagoon offers a district, ten kilometres long by one broad, which could be rendered healthy by being raised; and in this district there would be found homes in Italy for several thousand farmers who now are forced to emigrate, and the country would not lose

so many arms able to nourish and defend her. From this point of view, the double benefit to be obtained from the dredging of the canals and the raising of the land ought to be of interest also to the Minister of the Interior, who might employ a penal colony on this work.

Besides the canals already existing, others might be made which, when this new land is finished, would serve for the trade of the *terraferma*. This is not the place to bring together the statistics that prove the commercial superiority of water carriage to land transport, but for him who knows a little history, it would be sufficient to cast a glance at the maps to convince himself that the first factors of prosperity and civilisation of a nation are due to the cutting up of its coasts and to communications with the interior by means of rivers and canals.

The new bridge for waggons and foot-passengers, if it were more than a hanging addition to the present one, would obstruct some of the archways, would occupy part of the lagoon surface, and would act like a tentacle of the *terraferma*, sapping the strength of Venice, similar to that called *dei lupi* (of the wolves), which the Republic, alarmed by the approach of the malaria, once caused to be destroyed, employing for the work some thousand peasants.

The new bridge would be of no commercial utility, but, on the other hand, would be of harm, to Venice; for the need of loading the boats with the merchandise carried in carts would still exist, the need of the military pontoons for the transport of troops to the forts of the city would not disappear, and the boats and little steamers, which now work perfectly, are sufficient for the communications between the Canal Grande and the inhabited spots of the estuary of the lagoons. But once established, this new bridge would be the cause of many other novelties, concession would follow concession, bridges would be levelled, canals would be filled up, other streets would be widened to the very heart of the city, to the great satisfaction of the tribe of middlemen for whose profit this new highway into Venice is to be made; and who, with less inconvenience to themselves, might then sneer at the Rialto, and at the last remaining shadow of the well known and pleasant industry of the merchant of Venice.

Some disinterested and outspoken voices have already protested in the name of the artists of Venice against the new bridge: "Why not turn our aspirations to the sea, to that most ancient friend; and why not devote our intelligence and our energies to the limitless ways which she opens before us? Through a development of mercantile activity on the sea, even the artistic side of our city would gain, blooming again with happy youth in the memories of her past; and this conviction which animates a great number of us, ought to overcome the prejudice that our love for Venice is nothing but a love of antiquarians. We love our Venice living and energetic, continuing the splendid traditions of the past, and able, without changing her nature, to accommodate herself to the utilitarian ideas of the day. And it is because of this very love for the living Venice that when we speak of her character, unique in all the world, we do not think of it as restricted to the architectural beauties which are her pride, but as embracing all that marvellous fairyland which gives everything, from St. Mark's to its further shores, a mysterious fascination and an expression of ineffable harmony. To destroy this without most urgent reasons would be a crime.

"For in fact the works of Titian, of Tintoret, of Veronese, of Carpaccio, of the Bellini, and of all our great men, have in these surroundings, in this royal frame, as it were, their complement, their reason for existence, their commentary, fruitful of inspiration to the artist, inspiring the noblest ideals in whoever has a heart that hears the voice of the past, and through this faculty has his genius opened and brightened before the hopes of the future."

But I fear that these generous endeavours will not avail; and since it is not the Venetians alone who are interested in causing the vital conditions of this wonderful city to be respected, we turn to all those who know and love her, begging that they should use what authority and influence they possess in defending her lagoons.

REVIEWS. LXXIV.

(195)

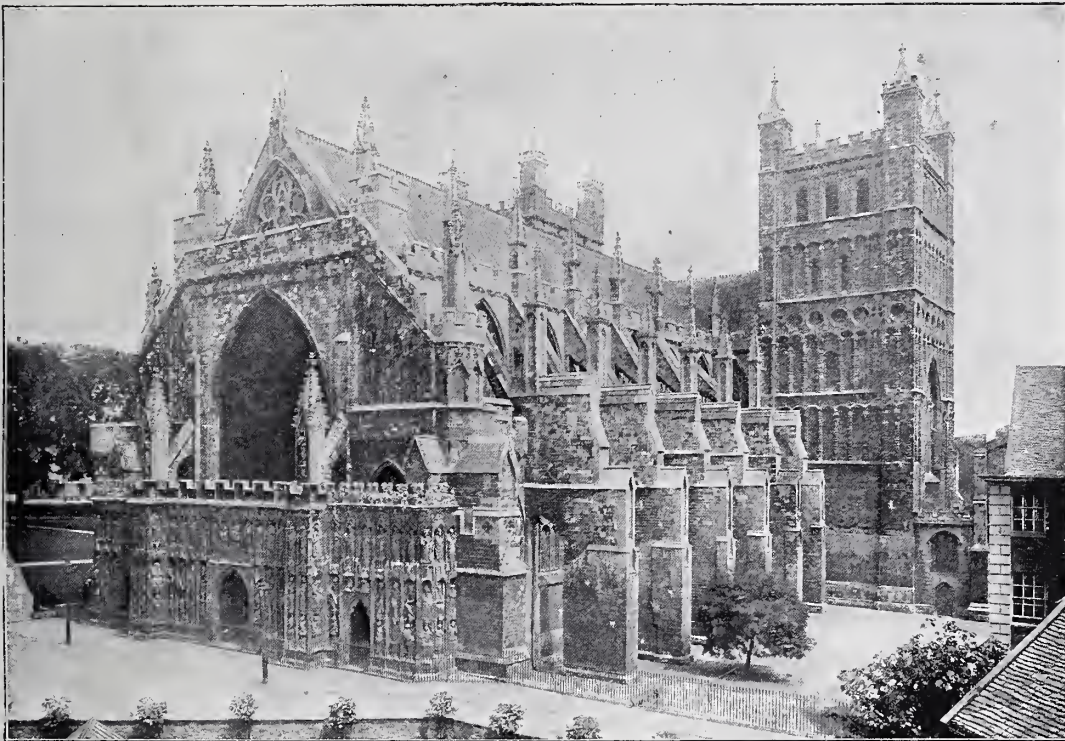
EXETER.

Exeter: the Cathedral and See. (Bell's Cathedral Series.)
By Percy Addleshaw, B.A. So. Lond. 1898. Price
1s. 6d. [Messrs. George Bell & Sons, York Street,
Covent Garden.]

This is a neatly got up and profusely illustrated guide-book, containing a large amount of information, which, with careful revision, would become

the diocese. It is, therefore, appropriate that it should seem most beautiful to the dwellers in the villages and hamlets beyond the city, giving them, as it were, a kind of property in the building, which they might not have felt had it been less visible."

Why the author should assert that "a closer view is at first most disappointing" is not apparent, for the surrounding "dwelling-houses of such disparate character" were long ago removed, and of late years the quaint old row of



The Photochrom. Co. Ltd. Photo.

EXETER CATHEDRAL, FROM THE SOUTH-WEST.

considerably enhanced in value, especially as the first aim of the work is stated to be accuracy. In this feature, however, it is somewhat lacking; which is to be regretted, as the author, in recognising that places derive one of their greatest charms from historical association, has interwoven some extremely interesting facts about the personages concerned with the buildings he describes, and has thus produced a very readable book.

Passing from the builders to their work, it is claimed that "the best views of the building are those to be got from a distance. In some ways this is not without compensation; for the cathedral church was, and is, not only splendid as a building, but the centre of the spiritual life of

collegiate houses in the Calendarhay has unfortunately followed suit.

The west front as a façade is subjected to adverse criticism, but the assertion that "the part above the screen is the work of Grandisson" is probably incorrect, if it is meant that this portion was entirely built by him. And here it may be remarked that some explanation is afforded of the curious appearance of this west front, if it is proved that Grandisson only remodelled the Norman or Transition work; the walls still stand, altered and re-clothed by that prelate, and this the investigations of Canon Edmonds have lately made clear to be the case.

One looks in vain for any detailed description

of the Chapter House, containing, as it does, some beautiful early English work, as well as a very fine Perpendicular wooden roof. This is passed over in favour of the Episcopal Palace, of which a photographic view is given in the nature of a puzzle to be solved by looking through the wrong

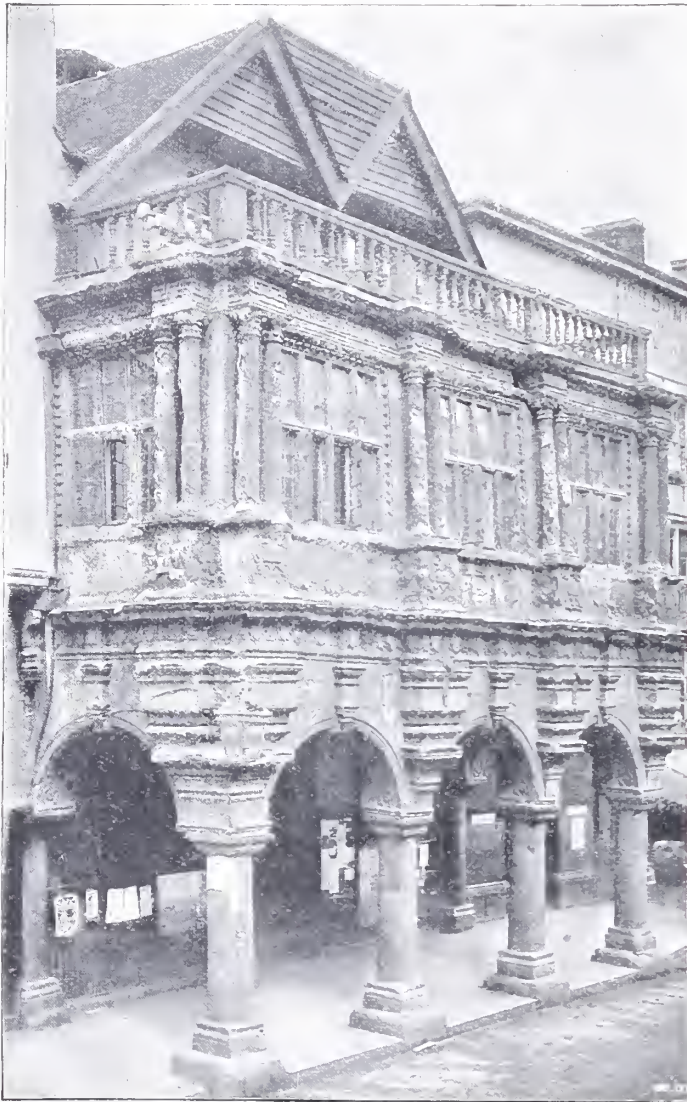
of parts being so well maintained that it affords a sense of completeness that is wanting in many larger and loftier edifices, and this effect is gained without monotonous repetition, for the variation of detail is sufficient to sustain the interest.

When the author proceeds to a description of the nave, it becomes evident that he has viewed it through the eyes of others. Instead of "little of the Norman masonry is now to be seen," he would, on examination, have discovered that the walls of the nave aisles are Norman, also that the glorious vaulting is *not of wood* (except to the towers). Technical description has been generally avoided; but seeing that there is not a vestige of carving on the pier caps, from which (not from the corbels) the arches spring, the following would have been better omitted also: "The nave is supported by thirty clustered pillars of Purbeck marble, showing various tints of blue and gray. The bases of the pillars are of three courses of moulding, and the capitals, though very simple, are admirably carved. On corbels of beautifully wrought foliage rise fourteen wide arches, seven on each side, graceful in form and rich with mouldings corresponding with the arrangement of the pillars that support them."

The author's condemnation of "the system of erecting large unsightly tablets" will be approved by all art lovers, who would also no doubt admire the simplicity of one of the latest memorial brasses—that to the late Bishop of Japan.

Among so many capital matter-of-fact photographic illustrations, as well as sketches of more artistic kind, it is a pity that Britton's old plan should have been inserted unaltered, being far from up-to-date, as is also the description of the so-called Leofric's Tomb, which was removed years since. The chantry of the Holy Ghost is *not* in the South Tower, and there does not seem to be any substantial reason for supposing the present building to be one of the most ancient portions

of the cathedral; for its construction demonstrates the contrary. Further, the font was reinstated in its old position in the nave a few years ago. There is no door to the Close from the Speke chantry, it having been blocked at the restoration. Recent investigation has shown that there is no crypt below St. Edmund's Chapel; on the other hand, the author, like most other writers, overlooks the crypt beneath St. James's Chapel.



The Photochrom. Co. Ltd. Photo.

THE GUILDHALL, EXETER.

side of the page. There are many much more interesting points about the Palace than the no longer existing prison; and surely the books and charters, in which Exeter is so rich, should not have been dismissed with a five-line reference in the paragraph about St. Andrew's Chapel.

Returning to the nave, the author rather misses the point, for the charm of Exeter interior lies in the harmony of the whole composition, the balance

In the arrangement of the book the sequence of some of its paragraphs is peculiar—for instance, there does not seem any particular reason why from the south transept the visitor is directed to the ambulatory at the east end of the choir, while the next part described is St. Radegund's Chapel outside the western door. With regard to the two seventeenth-century monuments in the ambulatory it is noted "Both are extremely beautiful." This is of course a matter of taste, but it is difficult to see wherein their beauty consists, especially as one of them covers up the greater part of a very fine mural painting, the remains of which are more interesting, from an

£100,000, unless it is meant relatively to present-day value, for the income was rated in 1535 at £1,566 14s. 6½d. (*vide* Oliver).

Musicians may forgive the omission of any description of the new pulpits, but scarcely the want of reference to the organ; while artists will smile at the conjecture that the panel paintings on the choir screen may "date from the same period as the screen itself."

Leaving the Cathedral, a few pages are devoted to the city, and a plate is given of old houses in *Fore Street* (not *North Street*, as printed), also of the old *Castle gateway*, which was, however, stripped of its ivy three years ago, and a large part of it rebuilt, thus losing much of its picturesque appearance; but the unveiling of the masonry enables its early characteristics to be seen. A good print is given of the front of the *Guildhall*, which was built in 1593 (not 1464, the latter being the date of the hall itself).

Exeter.

HARBOTTLE REED.

(196)

LIBRARIES.

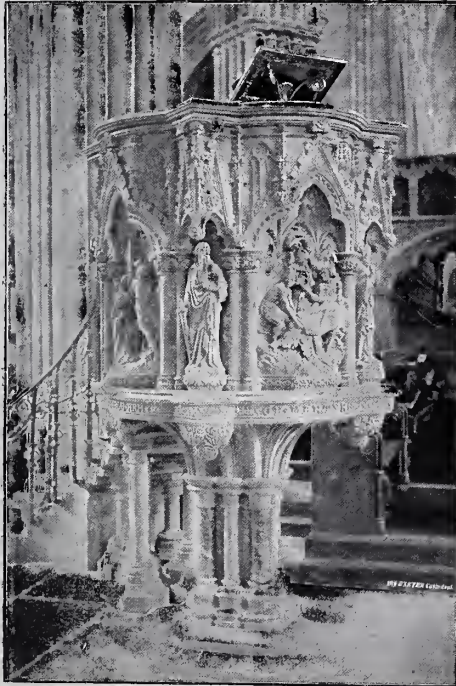
Library Construction, Architecture, Fittings, and Furniture. By F. S. Burgoyne, M.A. Vol. II. of the *Library Series* edited by Dr. R. Garnett. 8o. Lond. 1897. Price 6s. net. [George Allen, 156, Charing Cross Road.]

This volume, which is the second in the *Library Series* edited by Dr. R. Garnett, deals with the various problems of library planning and construction, and with the fitting up of the different rooms and departments, and cannot fail to be of service to the architect who has to design and erect this class of building.

In the early chapters the writer lays down certain general principles in reference to site and plan, lighting, and a variety of matters bearing upon the comfort of readers and the satisfactory working of the building, the result of the experience of the general body of librarians, which is now very considerable. On some points there is not a universal consensus of opinion, but in very many there is not only a practically unanimous opinion as to what should be done, but as to what is to be avoided.

The system on which a library is to be worked is not, as a rule, determined by the architect, but it should be clearly settled and understood before the plans are put in hand; and the chapters relating to book-cases, fittings, and catalogues, which are exceedingly clear and complete, will enable him, once the system to be used is fixed upon, to determine what space is required for storing, cataloguing, and issuing a library of any definite number of books. The author lays great stress upon the necessity, in almost all cases, of providing, from the very purchase of the site, for space and accommodation for the easy extension of the buildings.

The later chapters of the book give some account



The Photochrom. Co. Ltd. Photo.

THE "PATTERSON" PULPIT, EXETER.

artistic standpoint, than the ponderous monument. And in referring to the monuments it is not made clear that the effigy on Bronescombe's tomb is of much earlier date than the canopy over; while the figure mentioned as Barthomæus (Bartholomæus) Iscanus is not in armour, and has a double-bodied head at the feet. The figure of Bishop Stapeldon holds a book, and not a crook, in the right hand.

To printer's errors may possibly be attributed the substitution of *Caer Wise* for *Caer-wise*; *Hollar* for *Holker*; *Secklade* and *Lochlade* for *Lechlade*; *Dupont* for *Duport*, and *Patterson* for *Patteson*; and from the same source may arise the statement that the arches of the *sedilia* are 50 feet high instead of 10; and also that the revenues of the See in Bishop Veysey's time were

of most of the important public libraries in Great Britain, America, and on the Continent, and these chapters, as well as the earlier ones, are well and profusely illustrated with plans and drawings of the buildings and details, which are also described in the text.

To the architect it will be a matter of regret that this most useful series of plans is not rendered even more serviceable and complete by the addition of a scale to each drawing. The plans are evidently reproduced to a variety of scales, and though in many cases the dimensions of the principal rooms are given in the text, this by no means answers the same purpose.

In the case of fittings, however, such as indicators, catalogue-stands, &c., the exact dimensions required are usually figured in the illustrations as well as described in the text.

R. ELSEY SMITH.

Books received for Review.

The Book of Glasgow Cathedral: a History and Description. Edited by George Eyre-Todd, with special chapters written by Archbishop Eyre, D.D., J. F. S. Gordon, D.D., P. McAdam Muir, D.D., John Honeyman, R.S.A., James Paton, F.L.S., A. H. Millar, F.S.A., Scot., and Stephen Adam. With 118 views, drawings, &c., including full-page photogravures on Japanese vellum, and drawings by David Small, Herbert Railton, J. A. Duncan, and others. Limited to 1,000 copies. 4s. Glasgow, 1898. Price 42s. net. [Messrs. Morison Brothers, 52, Renfield Street, Glasgow.]

Architectural Photography: Practical Lessons and Suggestions for Amateurs. By G. A. T. Middleton, A.R.I.B.A., Author of *Surveying and Surveying Instruments, Stresses and Thrusts*. So. Lond. 1898. [Messrs. Hazell, Watson & Viney, Ltd., 1, Creed Lane, Ludgate Hill, E.C.]

The Cathedral Church of Hereford: a Description of its Fabric and a Brief History of the Episcopal See. By A. Hugh Fisher. Bell's Cathedral Series. So. Lond. 1898. Price 1s. 6d. [Messrs. George Bell & Sons, York Street, Covent Garden.]

Elementary Architecture, for Schools, Art Students, and General Readers. By Martin A. Buckmaster, Art Examiner to the Department of Science and Art. So. Oxon., 1898. Price 4s. 6d. [The Clarendon Press, Oxford.]

The Church of St. Martin, Canterbury: an illustrated Account of its History and Fabric. By the Rev. C. F. Routledge, M.A., F.S.A., Hon. Canon of Canterbury. So. Lond., 1898. Price 1s. 6d. [Messrs. George Bell & Sons, York Street, Covent Garden, W.C.]

NOTES, QUERIES, AND REPLIES.

The "Chapel of Bones," Great Hospital, Valletta.

From ARTHUR S. FLOWER [A.], M.A., F.S.A.—

The illustration opposite—one of the series exhibited at the reading of a Paper last November on Renaissance Architecture in Malta*—shows the interior of the underground charnel-house, sometimes called the "Chapel of Bones," in

the cemetery of the Great Hospital at Valletta, in Malta. There is nothing remarkable about the actual architecture of this crypt, but its strange decorations, composed of bleached human bones, arranged in a variety of patterns, all set upon a background of dull black, give it a very singular and weird effect. Some thousands of skeletons must have been used up in carrying out this adornment, and every part of the human frame seems to have its place somewhere in the scheme, each particular bone having been carefully sorted out, and employed in a decorative manner suggested by its own special form. It is said that the whole was the work of one man, a chaplain or chantry-priest attached to the place, and that the piles of bones seen in the foreground of the photograph, simply stacked up without ornamental motive, are the remainder of the raw material which the designer did not live long enough to arrange upon the walls or vaults of the building. There are several places, in different parts of Europe, where a vast number of exposed human bones forms a "sight" for the curious; but probably in no other instance has a collection of this kind been treated with such an ingenious appreciation of the purely decorative aspect of anatomy.

Ownership of Drawings.

From R. M. HAMILTON [A.], Christchurch, N.Z.—

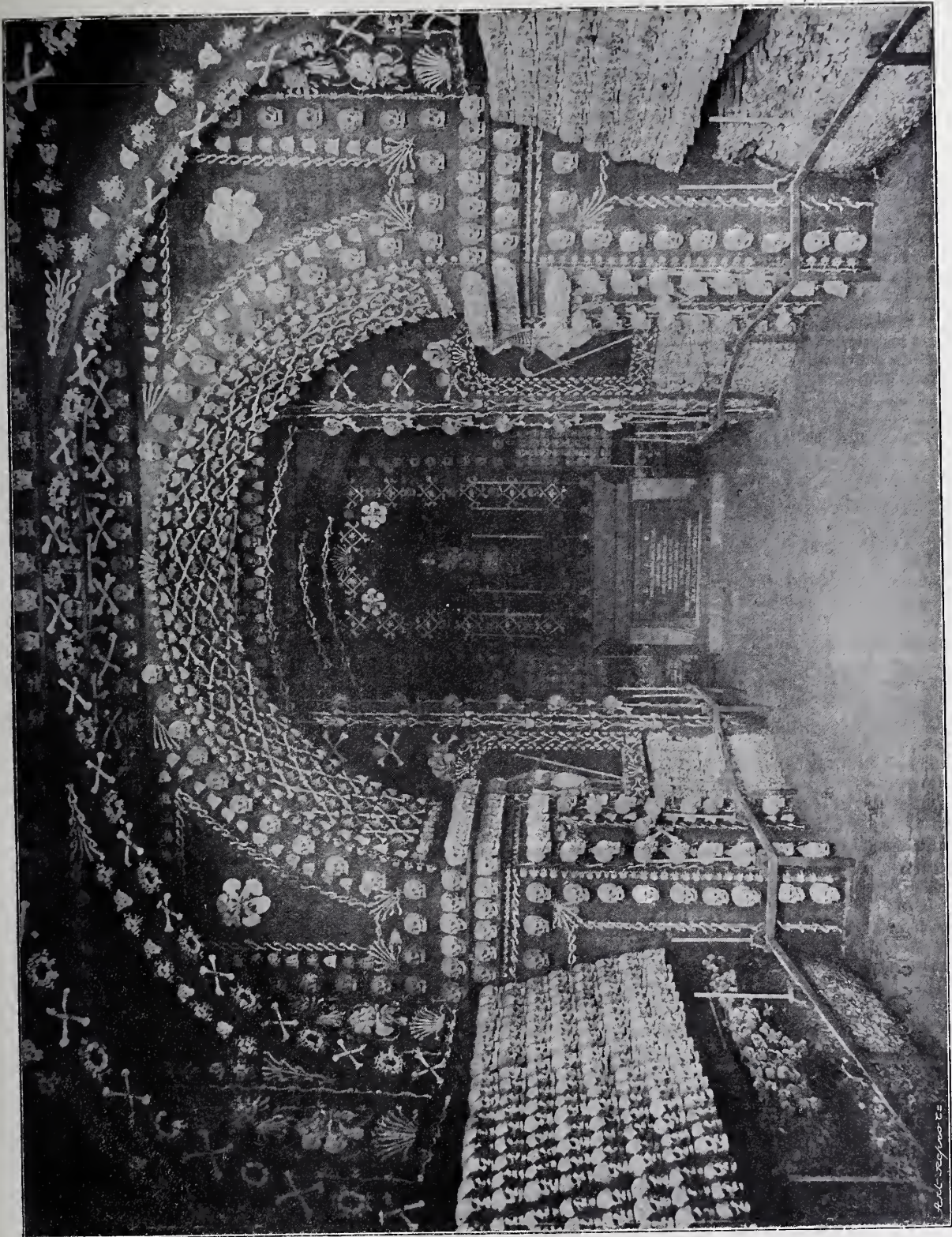
In the Institute JOURNAL for 6th November 1897, under "Notes and Queries," a discussion is raised on the ownership of drawings, several questions being asked by Mr. F. Warren, with replies by Professor Kerr. I do not think the whole question has ever been thoroughly thrashed out from the ethical point of view, and the development of the architect into a specialist traced back in connection with this question. His genesis has largely been lost sight of, which will help to account for the conflict of ideas at present existing.

The question now principally draws round the point of payment for drawings, with the right of possession by the client; and the reply, that they belong to the architect and are his instruments. The point is most generally raised when drawings have been prepared and no building has been erected from them.

It may be asked: "Are drawings a necessity at all? Is not the specification the essential document?" All the architect's instructions could be conveyed by writing in the specification, even to describing the dimensions of every room and the thickness of every wall. The drawings exemplify those instructions, and convey the meaning more readily, showing the builder more clearly and efficiently what is required of him, on the principle of "a ha'p'orth of showing is worth a bushel of telling."

Would a layman ever demand a specification as

* JOURNAL, Vol. V., 3rd Series, p. 25.



THE CHAPEL OF BONES, GREAT HOSPITAL, VALETTA.

200/500-774

his consideration for payment of fees to the architect? Hardly; it is not pretty enough. The drawings are really part of the instructions to the builder, and the architect could just as effectually draw the plan full size on the ground. He prefers to make the builder do it himself, and gives a description of what he wants done by means of a reduced scale drawing. Why, a clause of general conditions stipulates always that the drawings and specification are to be taken and read together. What is the true "inwardness" of that? Now if on payment the documents—drawings more particularly—belong to the client, how would it have fared with a prince in India if he gave an order for a "lordly pleasure-house"? The palace in days gone by would have been built without a drawing.

An ethical change has taken place in the original relative positions of architect and client which has been lost sight of in the course of ages, though some of the results remain. Originally he was *magister operis*, or *magister lapidum*—in fact, the builder, who has developed into a specialised individual, calling in another man now to erect the building for him from his instructions. Would a patron demand from an artist-decorator his cartoons or coloured sketches by which the workman carried out the internal decorations of his mansion? Hardly. Yet those sketches are similar to the architect's drawings. When a patient who has passed under the hands of a surgeon pays the fee, will he ask for the saws and knives by which he has lost his leg? Hardly. He pays for "services rendered." So in the other cases.

In the mind of the layman the drawings have come to be looked upon as essentials to the undertaking, instead of being a means to an end. A plan might have been a freehand sketch with figured dimensions on a piece of brown paper, though all the necessary thought and arrangement might have been expended thereon. Would a client demand that in exchange for his cheque? No. His house is what he has contracted for with the architect, and paid for. The architect has become a specialised intermediary, who now calls in another man to do the actual building. His fees have become separated from the cost of the contract, but nevertheless they are part of the cost of the house to the owner.

The drawings therefore, I consider, are a non-essential to the contract between the architect and client, and in relation to any demand by the latter may be considered as non-existent. The client pays for "services rendered," &c., just as the patient does who has been relieved of a limb. When drawings are prepared and nothing further results, the client pays for the architect's time, trouble, and thought, a great deal of which may have been undergone before a pencil had been put to paper.



9, CONDUIT STREET, LONDON, W., 11th June 1898.

CHRONICLE.

THE ANNUAL ELECTIONS.

THE COUNCIL.

At the Business General Meeting of Monday, the 6th inst., the Council for the year of office 1898-99 were declared to be duly elected as follows:—

PRESIDENT.—Professor Aitchison, R.A.

VICE-PRESIDENTS.—William Milner Fawcett, M.A.Cantab., F.S.A.; Henry Louis Florence; Ernest George; and Edward Augustus Gruning.

HON. SECRETARY.—William Emerson.

MEMBERS OF COUNCIL.—John Belcher; Thomas Blashill; James Brooks; John McKean Brydon; William Douglas Carøe, M.A.Cantab., F.S.A.; Campbell Douglas (Glasgow); John Alfred Gotch, F.S.A. (Kettering); Alexander Graham, F.S.A.; Benjamin Ingelow; Edward William Mountford; Beresford Pite; John Slater, B.A.Lond.; Percival Gordon Smith; Richard Phenè Spiers, F.S.A.; Henry Heathcote Statham; Leonard Stokes; Paul Waterhouse, M.A.Oxon.; and Aston Webb, F.S.A.

ASSOCIATE-MEMBERS OF COUNCIL.—Arthur Smyth Flower, M.A.Oxon., F.S.A., and Henry Thomas Hare.

REPRESENTATIVES OF ALLIED SOCIETIES.—Robert Isaac Bennett (Manchester Society); William Larkins Bernard (Bristol Society); Albert Nelson Bromley (Nottingham Society); John James Burnet, A.R.S.A. (Glasgow Institute); Thomas Drew, R.H.A. (Royal Institute of Ireland); Charles Busted Fowler (Cardiff, South Wales, and Monmouthshire Society); James Hine (Devon and Exeter Society); Leslie Ower (Dundee Institute); and Albert Edwin Sawday (Leicester and Leicestershire Society).

REPRESENTATIVE OF THE ARCHITECTURAL ASSOCIATION (London).—George Halford Fellowes Prynne.

THE STANDING COMMITTEES.

At the same Meeting the following Fellows and Associates were declared duly elected to serve on

the respective Standing Committees for the ensuing year of office, viz. :—

ART STANDING COMMITTEE.

Fellows.—John Macvicar Anderson, F.R.S.E.; James Brooks; John McKean Brydon; William Douglas Carøe, M.A.Cantab., F.S.A.; Ernest George; Edward William Mountford; Beresford Pite; Henry Heathcote Statham; Alfred Waterhouse, R.A., LL.D.; and William Young.

Associates.—Robert Shekleton Balfour; Owen Fleming; James Sivewright Gibson; Henry Thomas Hare; George Campbell Sherrin; and John William Simpson.

LITERATURE STANDING COMMITTEE.

Fellows.—Henry Louis Florence; Alexander Graham, F.S.A.; Benjamin Ingelow; John Tavenor Perry; William Alfred Pite; Sydney Smirke; Richard Phenè Spiers, F.S.A.; Henry Heathcote Statham; Paul Waterhouse, M.A.Oxon.; and Ralph Selden Wornum.

Associates.—Arthur Thomas Bolton; Arthur Smyth Flower, M.A.Oxon., F.S.A.; Andrew Noble Prentice; Ravenscroft Elsey Smith; Leslie Waterhouse, M.A.Cantab.; and Percy Scott Worthington, M.A.Oxon.

PRACTICE STANDING COMMITTEE.

Fellows.—Thomas Batterbury; Samuel Flint Clarkson; Thomas Harris; George Hubbard; Alexander Henry Kersey; Joseph Douglass Mathews; Walter Hilton Nash; James Osborne Smith; Charles James Smithem; and Edmund Woodthorpe, M.A.Oxon.

Associates.—William H. Atkin-Berry; Charles Henry Brodie; Francis Thos. Wilberforce Goldsmith; Herbert Hardwicke Langston; Augustus William Tanner; and William Henry White.

SCIENCE STANDING COMMITTEE.

Fellows.—Lewis Angell, M.Inst.C.E.; Hampden William Pratt; John Salmon Quilter; Herbert Duncan Searles-Wood; William Howard Seth-Smith; Percival Gordon Smith; Alfred Saxon Snell; Lewis Solomon; William Charles Street, Assoc.Inst.C.E.; and Benjamin Tabberer.

Associates.—Sydney Benjamin Beale; Henry William Burrows; Max Clarke; Bernard John Dicksee; Matthew Garbutt, Assoc.-M.Inst.C.E.; and George Pearson.

The Auditors are Messrs. Zeph. King and Frederick William Marks.

The Institute Register for Assistants.

Whether it be a sign or not of the non-overcrowding of the profession, the demand on the part of principals for assistants far exceeds the supply that the Institute can provide. It therefore seems advisable to draw special attention to the facilities for obtaining employment offered to assistants by the Institute. A register of assistants

desiring employment is kept in the office, and members of the Institute, Students and Probationers, are charged no fee. It is assistants or some experience for whom there appears to be so much demand.

THE AMENDED BY-LAWS.

The sanction of the Privy Council to the alterations in By-laws 9, 15, 30, and 31 has been conveyed to the Institute in a document, of which the following is a copy :—

[PRIVY SEAL.]

AT THE COUNCIL CHAMBER, WHITEHALL.

The 19th day of May 1898.

By the Lords of Her Majesty's Most Honourable Privy Council.

PRESENT :

LORD CHANCELLOR.

LORD PRESIDENT:

LORD BALFOUR OF BURLEIGH.

WHEREAS there was this day read at the Board a letter dated the 3rd day of May 1898, from Messrs. Markby, Stewart, & Co., transmitting certain Resolutions varying Bye-Laws Nos. 15, 30, 9, and 31 of the Royal Institute of British Architects, passed at Special General Meetings of the Institute held on the 14th day of June 1897, the 29th day of November 1897, and the 18th day of April 1898, and confirmed at subsequent Special General Meetings held on the 12th day of July 1897, the 13th day of December 1897, and the 2nd day of May 1898.

And whereas by Section 33 of the Supplemental Charter of the Institute it is provided that no Bye-laws made by the Institute shall be of any force or validity whatever unless and until they have been approved by The Lords of the Council.

NOW THEREFORE, Their Lordships, having taken into consideration the said Resolutions, are pleased to approve the amendments of the Bye-Laws (copy of which is hereunto annexed).

J. H. HARRISON.

BYE-LAW 9.

The following clause to be added :—

“Provided always that when the Council of the Institute receive a unanimous recommendation formally submitted by the Council of any Allied Society that a practising member of the profession is eligible and worthy of being elected as a Fellow, the Council shall, during the five years from the date of approval of this provision by the Privy Council, have power to elect him, if in their opinion his work be of sufficient merit. The Council shall also have the power to elect annually to the Fellowship without ballot the President or President-elect of any of the Allied Societies who may be eligible and apply for admission.”

BYE-LAW 15.

To be added to as follows :—

“Provided always that the Council may during their pleasure dispense with the payment of an Entrance Fee in the case of Non-Metropolitan Fellows.”

BYE-LAW 30.

To be altered as follows, viz. :—

“That in the last line but one of the final clause the word ‘last’ be substituted for ‘first.’”

“That the words ‘the said Meeting’ in the antepenultimate clause be altered to ‘the close of the last General Meeting in June.’”

BYE-LAW 31.

“The word ‘first’ in the last sentence to be altered to ‘last.’”

Mr. Gladstone and the Institute.

The following letter, just discovered among the Council documents, may be of interest at the present time :—

“Hawarden Castle, Chester: 28 Oct. 1874.

“SIR,—I am very sensible of the compliment conveyed to me by the request which is contained in your letter of the 22nd.

“Nevertheless, it is my fear that I shall not be able to comply. My time is more than filled with engagements that I cannot set aside, and I could not readily turn to the thorough consideration of any matter such as would be suitable to be laid before the Society of British Architects. If within a reasonable period such a topic as would be manageable should occur to me, I will not scruple again to address you.—I have the honour to be, Sir, your faithful servant,

C. L. Eastlake, Esq.

W. E. GLADSTONE.”

This letter was in response to a letter from the Council inviting Mr. Gladstone to read a Paper before the Institute. The Paper was never read, but at the Meeting of the 30th April 1877, when Dr. Schliemann delivered his lecture on “The Architecture of Troy,” Mr. Gladstone, who was present, opened the discussion in a scholarly speech,* and finally moved the vote of thanks.

Mr. Penrose.

It is announced that the honorary degrees of Doctor in Letters, Cambridge, and Doctor of Civil Law, Oxford, are to be conferred upon Mr. Penrose, F.R.S., *President* 1894–96.

Obituary.

The *Daily Chronicle* announces the death of Mr. Sydney Stent [F.], M.Inst.C.E., of Cape Town, on the 20th ult. Mr. Stent, who was fifty-two years of age, had been a Fellow of the Institute since 1880. His architectural education was received in the office of his father, the late Mr. W. J. Stent, of Warminster. In 1868 he started practice in Frome, but left England in the following year for South Africa, where he practised successively in Natal, Cape Colony, and Griqualand West, finally settling at the Cape on his appointment as Resident Architect to the Government in 1873.

His Honour Judge Meadows White, Q.C., F.R.S.,

who died on the 21st ult., had been an Hon. Associate of the Institute since 1883. While a practising barrister Mr. White was standing counsel to the old Metropolitan Board of Works. The Institute TRANSACTIONS of 1888 [Vol. IV. N.S.] contains a Paper, “Recent Legal Decisions affecting Architects,” read by the deceased before the Institute in that year.

Commission du Vieux Paris.

At a meeting of the *Commission du Vieux Paris*, held on the 5th ult. under the presidency of the Prefect of the Seine, a letter was read from Monsieur Ch. Lucas [*Hon. Corr. M.*], who, summoned as a witness, was unable to attend, referring to the Royal Institute’s publications, “Conservation of Ancient Monuments” and “Hints to Workmen engaged on the Repairs and Restoration of Ancient Buildings,” of which he submitted copies. The result of M. Lucas’s recommendations was a resolution that a short practical guide should be issued for the use of workmen engaged on the demolition or restoration of ancient monuments, and that the two publications of the Royal Institute should serve as a basis for the compilation.

The above is gathered from the report in the *Bulletin Municipal Officiel de la Ville de Paris* of the 21st ult.

PROFESSIONAL CHARGES.

The Revised Schedule.

At the conclusion of the ordinary business before the Meeting of Monday, the 6th inst., the Meeting proceeded to the consideration of the amended Schedule of Professional Charges recommended by the Council for approval and adoption. The revised Paper, which was issued to members in the Supplement to the last JOURNAL, is as follows :—

THE PROFESSIONAL PRACTICE AS TO THE CHARGES OF ARCHITECTS.

SCHEDULE SANCTIONED BY THE ROYAL INSTITUTE OF BRITISH ARCHITECTS, AND CONFIRMED AT A GENERAL CONFERENCE OF ARCHITECTS OF THE UNITED KINGDOM, 1872; REVISED BY THE ROYAL INSTITUTE, 1898.

1. The usual remuneration for an architect’s services except as hereinafter mentioned is a commission of 5 per cent. on the total cost of works executed under his directions. Such total cost is to be valued as though executed by a builder with new materials. This commission is for the necessary preliminary conferences and sketches, approximate estimate when required (such, for instance, as may be obtained by cubing out the contents), the necessary general and detailed drawings and specifications, one set of tracings and duplicate specification, general superintendence of works, examining and passing the accounts, exclusive of measuring and making out extras and omissions. The clerk of the works should be appointed by the architect, his salary being paid by the client.

2. This commission does not include the payment for services rendered in connection with negotiations relating to the site, or in surveying it and taking levels, making

* Printed in the TRANSACTIONS 1876–77, pp. 197–200.

surveys and plans of buildings to be altered, making arrangements in respect of party-walls and rights of light, or for drawings and correspondence with local and other authorities, or consequent on the failure of builders to carry out the works, for services in connection with litigation or arbitration, or in the measurement and valuation of extras and omissions. For such services additional charges, proportionate to the trouble involved and time spent, are made.

3. In all works of less cost than £1,000, and in works requiring designs for furniture and fittings of buildings, or for their decoration with painting and mosaics, sculpture, or stained glass and other like works, and in cases of alterations and additions to buildings, 5 per cent. is not remunerative, and the architect's charge is regulated by special circumstances and conditions.

4. When several distinct buildings, being repetitions of one design, are erected at the same time from a single specification and one set of drawings and under one contract, the usual commission may be charged on the cost of one such building, and a modified arrangement made in respect of the others; but the arrangement does not apply to the reduplication of parts in one building undertaking, in which case the full commission is to be charged on the total cost.

5. If the architect should have drawn out the approved design complete, with plans, elevations, sections, and specification, the charge is 2½ per cent. upon the estimated cost. If he should have procured tenders in accordance with the instruction of his employer the charge is ½ per cent. in addition. These charges are exclusive of the charge for taking out quantities. Preliminary sketches and interviews, where the drawings are not further proceeded with, are to be charged for according to circumstances.

6. The architect is entitled during the progress of the works to payment by instalments on account at the rate of 5 per cent. on the amount of the certificates when granted, or alternatively, on the signing of the contract, to half the commission on the amount thereof, and the remainder by instalments during their progress.

7. Should the client, having approved the design and after the contract drawings have been prepared, require material alterations to be made, whether before or after the contract has been entered into, an extra charge is made in proportion to the time occupied in such alterations.

8. The charge per day depends upon an architect's professional position, the minimum charge being three guineas.

9. The charge for taking a plan of an estate, laying it out, and arranging for building upon it, is regulated by the time, skill, and trouble involved.

10. For setting out on an estate the position of the proposed road or roads, taking levels, and preparing drawings for roads and sewers, applying for the sanction of local authorities, and supplying all necessary tracings for this purpose, the charge is 2 per cent. on the estimated cost. For subsequently preparing working drawings and specifications of roads and sewers, obtaining tenders, supplying one copy of drawings and specification to the contractor, superintending works, examining and passing accounts (exclusive of measuring and valuing extras and omissions), the charge is 4 per cent. on the cost of the works executed, in addition to the 2 per cent. previously mentioned.

11. For letting the several plots in ordinary cases the charge is a sum not exceeding a whole year's ground rent, but in respect of plots of great value a special arrangement must be made.

12. For approving plans submitted by the lessee, and for inspecting the buildings during their progress, so far as may be necessary to ensure the conditions being fulfilled, and certifying for lease, the charge is a percentage not exceeding 1¼ per cent. up to £5,000, and above that by special arrangement.

13. For valuing freehold, copyhold, or leasehold property the charge is—

On £1,000 . . .	1 per cent.
Thence to £10,000 . . .	½ " "
Above £10,000 . . .	¼ " " on residue.

In valuations for mortgage, if an advance is not made, one-third of the above scale. The minimum fee is three guineas.

14. For valuing and negotiating the settlement of claims under the Lands Clauses Consolidation Act or other Acts for the compulsory acquisition of property, the charge is on Ryde's scale, as follows:—

On Amount of Settlement, whether by Verdict, Award, or otherwise.

Amount	Gs.	Amount	Gs.	Amount	Gs.	Amount	Gs.
£ 100	5	£ 2,200	24	£ 5,200	39	£ 8,200	54
200	7	2,400	25	5,400	40	8,400	55
300	9	2,600	26	5,600	41	8,600	56
400	11	2,800	27	5,800	42	8,800	57
500	13	3,000	28	6,000	43	9,000	58
600	14	3,200	29	6,200	44	9,200	59
700	15	3,400	30	6,400	45	9,400	60
800	16	3,600	31	6,600	46	9,600	61
900	17	3,800	32	6,800	47	9,800	62
1,000	18	4,000	33	7,000	48	10,000	63
1,200	19	4,200	34	7,200	49	11,000	68
1,400	20	4,400	35	7,400	50	12,000	73
1,600	21	4,600	36	7,600	51	14,000	83
1,800	22	4,800	37	7,800	52	16,000	93
2,000	23	5,000	38	8,000	53	18,000	103
						20,000	113

Beyond this Half-a-Guinea per cent.

The above scale is exclusive of attendances on juries or umpires, or at arbitrations, and also of expenses and preparation of plans.

15. For estimating dilapidations and furnishing or checking a schedule of same, the charge is 5 per cent. on the estimate, but in no case less than two guineas. For services in connection with settlement of claim by arbitration or otherwise, extra charges are made, under Clause 8.

16. For inspecting, reporting, and advising on the sanitary condition of premises, the charge must depend on the nature and extent of the necessary services rendered.

17. In all cases travelling and other out-of-pocket expenses are paid by the client in addition to the fees. If the work is at such a distance as to lead to an exceptional expenditure of time in travelling, an additional charge is made under Clause 8.

18. When an architect takes out and supplies to builders quantities on which to form estimates for executing his designs, he should do so with the concurrence of his client, and it is desirable that the architect should be paid by him rather than by the builder, the cost of such quantities not being included in the commission of 5 per cent.

DISCUSSION ON THE ABOVE SCHEDULE.

The CHAIRMAN, after formally moving the adoption of the Paper as above printed, said that the Schedule was now open to discussion by members, but he would ask the Chairman of the Practice Committee, who had presided over the numerous meetings at which the Paper was revised before submission to the Council, to go through it, and compare it with the original.

MR. J. DOUGLASS MATHEWS [F.] explained that the desire of the Committee had been to alter the Schedule as little as possible. The old Schedule might be said to have been

a tentative document, and whereas the charges were rather permissive, in the new it was thought desirable to make it an authoritative schedule of charges of the Institute. That was met by the title, "The Professional Practice as to the Charges of Architects," instead of, as formerly, "Professional Practice and Charges of Architects"; and in order to identify it with the present the same heading was used, with the words "Revised by the Royal Institute 1898." To give members the opportunity of noting the chief alterations he would run speedily through the several clauses. In Clause 1, he pointed out that Clauses 1, 5, 11, and 12 of the old Schedule had been compressed into it in order to make the architect's duties clear and definite in one clause rather than in four. The first alteration was in the fourth line, "Works executed under his directions," instead of as in the former Schedule "Works executed from his designs." Then the last paragraph was new: "The Clerk of the Works should be appointed by the architect, his salary being paid by the client."

Mr. JOHN SLATER [*F.*] suggested that to save going over the ground twice, Clause 1 should be at once discussed and disposed of, and that each clause should be treated in a similar manner as the changes were explained by Mr. Mathews.

Mr. BERESFORD PITE [*F.*] questioned the expediency of withdrawing the old Schedule, and was proceeding with a general criticism of the revised Paper, when the Chairman ruled that Mr. Douglass Mathews should continue with his review of the Paper, and afterwards each clause could be discussed in turn.*

Mr. DOUGLASS MATHEWS, continuing, said that Clause 2 defines works not included in Clause 1, and embodies No. 7 in the old and also No. 5. The new words were "or for drawings and correspondence with local and other authorities." The words "or arbitration" were added; and at the end, "For such services additional charges, proportionate to the trouble involved and time spent, are made." It was an absolute impossibility to lay down exact charges for everything; and therefore the Committee had endeavoured to make the charges as definite as they could be, but certain things must be regulated by the time involved and skill and experience. Clause 3 embodied Clauses 4 and 10 of the old Schedule. £1,000 had been inserted instead of £500; because it was not always fair to charge upon a definite ascending scale. The words added were "in cases of alterations and additions to buildings." In Clause 4 the only alteration was a modification of Clause 3 of the old Schedule, and the addition of the words "but the arrangement does not apply to the reduplication of parts in one building undertaking, in which case the full commission is to be charged on the total cost." Clause 5 embodied practically Clauses 9 and 10 of the old Schedule; the words "2½ per cent." had been added, and the following sentences: "These charges are exclusive of the charge for taking out quantities. Preliminary sketches and interviews, where the drawings are not further proceeded with, are to be charged for according to circumstances." Clause 6 was also Clause 6 of the old Schedule. Reference to the custom of the Office of Works had been omitted because the Schedule had now been withdrawn, and therefore it was a false statement at the present moment. The words "the certificates when granted" and "instalments during their progress" were new. Clause 7 was Clause 8 of the old Schedule; the words "after the contract drawings have been prepared" was a slight alteration; the words "entered into, and in proportion to the time occupied in such alterations" were inserted, and "the

architect's approximate estimate" omitted. Clause 8 was practically the same as the old Clause 13, and Clause 9 the same as the old Clause 17. Clause 10 was instead of 21, but more explicit. It often happened that in setting out an estate preliminaries had to be done in the first instance, and the works were not done for a considerable time, and therefore it was thought desirable to charge 2 per cent. on the estimate, to be paid when the work was done, and then, when the roads and work had been carried out, instead of charging 5 per cent. on the whole, 2 per cent. being already paid, the remainder was charged at 4 per cent. Clause 11 was practically the same as Clause 18 of the old Schedule, with the addition of the words "but in respect of plots of great value a special arrangement must be made." Those words had been added, because in very valuable properties it was absurd to expect one year's ground rent. Clause 12 was practically Clause 19 of the old Schedule, but differently worded. Clause 13 was practically Clause 22 of the old Schedule, but made more definite, and the following words were added: "In valuations for mortgage, if an advance is not made, one-third of the above scale. The minimum fee is three guineas." Clause 14, a new clause entirely, was inserted in order to bring the Institute more into line with the Surveyors' Institution and other bodies. Ryde's scale was acknowledged under the Lands Clauses Act, and therefore had been printed *in extenso*. Clause 15 was similar to the old Clause 23, with the following alterations: In the first line the words "and furnishing or checking a schedule of same" were added, and the last paragraph: "For services in connection with settlement of claim by arbitration or otherwise, extra charges are made, under Clause 8," was new. Clause 16 was entirely new, because the work included in the clause was not considered necessary at the time the old Schedule was prepared; but, in consequence of altered circumstances, it was thought necessary to recognise it. Clause 17 was practically the same as the old Clause 20, but in the first part of it the words "and other out-of-pocket expenses" were added; and the final paragraph was generally similar to the old Clause 1. Clause 18 was practically the same as the old Clause 15, except that the words "takes out and" were inserted. The foregoing were all the material alterations. It would be seen that they were not very great, but at the same time sufficiently important to justify the issue of a new Schedule, as practice had altered very much since 1872, when the old Schedule was prepared.

Mr. BERESFORD PITE [*F.*] suggested that it might not be worth while to adopt the alterations. The additions to the document were comparatively few; there were two new clauses, and omissions of three clauses. That being the case, was it worth while for the sake of two new clauses to omit three old ones? There was a slump in one direction and a boom in the other. Admitting that the existing document had been unsatisfactory, yet it had become recognised among clients, was referred to again and again, and unless some radical and important alterations or improvements were made, the great balance of opinion in the profession at large would be found to be against altering the condition of things which had slowly and with a great deal of trouble come to be recognised. Architects had always treated this Schedule in the past as being evidence of custom. If it was evidence of custom, what was the good of re-issuing evidence of custom? The suggested improvements in the wording were all highly indefinite. In every case it was impossible to be definite. But why make an indefinite statement? Why not leave the thing out as is done in the previous Schedule? For instance, at the end of Clause 2: "For such services additional charges proportionate to the trouble involved and time spent are made"; at the end of Clause 3: "the architect's charge

* The substance of Mr. Pite's remarks at this stage are given in the report of his remarks following Mr. Mathews's summary.

is regulated by special circumstances and conditions ;" at the end of Clause 11 : "but in respect of plots of great value a special arrangement must be made"; at the end of Clause 12 : "by special arrangement"; at the end of Clause 17 : "an additional charge is made under Clause 8." These clauses creating a large number of exceptional circumstances were highly indefinite, and it did not add to the value of the Schedule. Mr. Mathews had said that the alterations were very few, and that in itself was sufficient reason for not reissuing under new numbers and in a new guise a document which had been steadily circulated by the Institute for over a quarter of a century. The vagueness of some of the clauses would certainly leave room for trouble between architects and clients. The general tendency, of course, was to make things better for the architect. Such delicious phrases as "out-of-pocket expenses" covered, of course, hotel expenses and champagne, which were not covered at the present time. With regard to sanitary matters, it was an everyday matter of business for an architect to have to report on the sanitary condition of premises and to make charges. But how did this new Schedule help him by saying they depend "on the nature and extent of the necessary services rendered." That did not help the architect a jot. It did not suggest that those services should be charged for by time or skill, or for use of apparatus where necessary. The insertion of Ryde's scale in the Institute Schedule was quite unnecessary; no document was better known. Three clauses—10, 14, and 16—were really matters more connected with the Surveyors' Institute than the Institute of British Architects. Clause 14 of the old Schedule, which had been left out, ought not to have been left out. It gave a sinister appearance to the whole document. Supposing counsel in a court of law, when an architect's charges are involved, produced the new document, and counsel on the other side produced the old document, and asked why Clause 14 was left out. Clause 14 ran : "The above payments alluded to in this document are to be made by the employer to the architect, who is not to receive commission or payment of any kind from the builder or any tradesman in respect of works executed under the architect's direction." In spite of all the improvements, he would rather have the old Schedule with that in than the new one with it out. He hoped the Meeting would not think that he was running a-tilt at the work of the Committee; but he did not think there was justification for the upsetting of the existing order of things; and, whether it would be proper or not for him to make a definite motion, he was of opinion that it would be better to postpone consideration *sine die* than to proceed with the matter, which, on the whole, in spite of the care and trouble bestowed upon it, would not benefit the Institute in its action.

[After a long discussion on procedure, the Hon. Secretary, to bring matters to an issue, formally proposed, and Mr. Gruning seconded, a motion that the old Schedule be retained. The motion was lost. The Chairman then invited discussion on each clause separately.]

Mr. WILLIAM WOODWARD [A.] said that he had a few remarks to offer on the first clause. He proposed to eliminate the whole of the last four lines; that would make it stop with a full stop after the word "accounts." Extras and omissions were very properly referred to in Clause 2. And with regard to the Clerk of the Works, he proposed to put that provision as an entirely new clause at the end of the Schedule, and make it Clause 18 : "The Clerk of the Works shall be appointed by the architect; his salary is paid by the client." The Clerk of the Works and the making out of extras and omissions should not be included in a clause which defined exactly the remuneration for which an architect charged 5 per cent.

Mr. C. H. BRODIE [A.], Hon. Secretary of the Practice

Committee, explained that the object of this was that Clause 1 combined four clauses in the old Schedule. That was quite sufficient statement in reply to all that Mr. Pite had said. If the revised Schedule only made that alteration it would be worth adoption by the Institute. The clause stated what an architect was paid for, and finished by stating what he was not paid for.

Mr. WOODWARD observed that Clause 2 stated what was not included in the architect's 5 per cent. The Clerk of the Works had nothing to do with the payment of the architect.

Mr. E. W. HUDSON [A.] agreed with Mr. Woodward. But he could not see why the words "works executed from his designs" need be omitted because "under his directions" were adopted. It would be quite as well to have it "works executed from his designs or under his directions." He did not see in the other clauses anything about charging for omitted works, *i.e.* works which had been designed but cut out during progress.

Mr. MATHEWS replied that there was no objection to the words "The clerk of the works should be appointed by the architect, his salary being paid by the client" being put in a separate clause; but in reference to extras and omissions, the desire of the Committee was to make this clause very definite, so that there should be no doubt about it without having to fish through other clauses. Clients had an idea that in passing the accounts the architect must verify them by measurement and valuation if necessary; therefore it was desirable that those words should stay in; the matter was fully considered by the Committee and by the Council.

Mr. WOODWARD was willing to accept Mr. Mathews's suggestion; there was no harm in mentioning it twice.

The CHAIRMAN then put Clause 1 to the Meeting, with the exception of the final sentence, "The clerk of the works, &c."

Mr. BERESFORD PITE, referring to Mr. Hudson's proposal, requested the insertion of the words "executed from his designs." He understood that Mr. Hudson proposed that as an amendment, and he himself would second it.

The CHAIRMAN decided that the two amendments must be taken separately, and having put Mr. Hudson's—*viz.*: that the words "executed from his designs and under his directions" be inserted—the Meeting voted against it. The second amendment—*viz.*, that the words "The clerk of the works should be appointed by the architect, his salary being paid by the client" should be omitted from Clause 1 was carried.

Mr. MATHEWS then proposed that the clerk of the works sentence should come in as Clause 1a.

Mr. BERESFORD PITE suggested that it should be Clause 19.

Mr. W. D. CARÔE, after some discussion, moved that the words should come in at the end of Clause 2. Mr. ZEPHANIAH KING seconding, this amendment was put and carried.

Mr. WOODWARD proposed in Clause 2, after the words "negotiations relating to the site" in line 3, to insert "or premises"; and then insert the words "or in supplying drawings to ground or other landlords." In London considerable trouble and expense was incurred by architects in submitting plans to ground landlords, and revising them as the ground landlords from time to time desired. He proposed further that after the words "rights of light," in line 6, the sentence should read "or for drawings for and correspondence with local and other bodies." Then in the next line, between "or" and "consequent," the words "for services" should be inserted, so as to read "or for services consequent on." After the word "arbitration," fifth line from bottom, he proposed the insertion of the words "or in the taking out of quantities." In his view that was the right place for those words, so that it should be brought clearly to

the client's notice that taking out quantities was not included in the 5 per cent.

Mr. BERESFORD PITE thought the last sentence of the clause was useless: "For such services additional charges proportionate to the trouble involved and time spent are made." They did not say that sort of thing about measuring extras and omissions, or about taking out quantities. There were regular recognised charges for those works, and the last sentence did not in any way strengthen the clause. It was sufficient to state definitely that the commission did not include those things. With regard to this clause, if the Institute could introduce into their new Schedule any sort of scale of charge in connection with party-wall notices it would be exceedingly interesting and very important; because architects of modest charges were brought face to face with gentlemen, Fellows of the Institute, who were anything but modest for very small services in connection with party-wall notices, and if amongst themselves they could agree upon a scale per notice or interview or award, it would be of very great value. It was not a difficult matter, and would be a most useful addition to the Schedule.

Mr. MATHEWS explained that those words were put in at the end for the express purpose of giving some idea what those charges should be, and not leaving it so indefinite. It was impossible to give the actual amount.

Mr. BERESFORD PITE said he referred only to party-wall notices.

Mr. MATHEWS remarked that it all dealt with the same question.

Mr. BERESFORD PITE disagreed. Rights of light would come under the Taxing Master, and measurement and valuation of extras go on costs. The party wall matter wanted dealing with by the Institute; and he moved that the last sentence should be omitted.

Mr. WOODWARD seconded Mr. Pite's proposition, that the last words commencing "For such services" be eliminated. The clause amended as he proposed would then stand thus: "This commission does not include the payment for services rendered in connection with negotiations relating to the site or premises, or in supplying drawings to ground or other landlords, or in surveying the site or premises and taking levels, making surveys and plans of buildings to be altered, making arrangements in respect of party-walls and rights of light, or for drawings for and correspondence with local and other authorities, or for services consequent on the failure of builders to carry out the works, or for services in connection with litigation or arbitration, or in the taking out of quantities, or in the measurement and valuation of extras and omissions."

Mr. CARÖE thought the quantities should not come into this clause at all. The Schedule was easily divided into two parts, the first eight clauses referring to architect's work and the remainder to surveyor's work. The quantities were quite rightly placed at the end of the Schedule.

Mr. MATHEWS said the Committee would be prepared to accept Mr. Woodward's amendment, except as to the quantities clause, which the Committee desired to keep separate altogether; and also as to the last sentence, which should be retained, as it was of considerable importance, because it gave something like a scale which architects should charge. If the last sentence were omitted the value of the clause would be considerably reduced.

Mr. WOODWARD pressing his point about the insertion of the words "or in the taking out of the quantities," the matter was put to the Meeting as a separate amendment, and lost. The question of the omission of the last sentence—viz. "For such services additional charges proportionate to the trouble involved and time spent are made"—was then voted upon, and the majority declared for their retention.

Mr. H. H. Fox [A.] suggested that something more should be put into the clause as to how the Clerk of the Works should be paid. The architect might fix the Clerk of the

Works' salary at a certain amount and the client might object to pay it.

The HON. SECRETARY replied that that must be a matter of arrangement between the architect and the client.

With regard to the sentence struck out of Clause 1—viz. "The Clerk of the Works should be appointed by the architect, his salary being paid by the client,"—the matter being put to the vote, it was decided that it should be inserted at the end of Clause 2.

The debate was then adjourned, on the motion of Mr. WOODWARD, seconded by Mr. ZEPH. KING.

* * A Special General Meeting has been convened for the 27th June, when consideration of the Revised Schedule will be resumed.

MINUTES. XV.

At the Fifteenth General Meeting (Business) of the Session, held Monday, 6th June 1898, at 8 p.m., Mr. H. L. Florence, *Vice-President*, in the Chair, with 20 Fellows (including 11 members of the Council) and 11 Associates (including 1 member of the Council), the Minutes of the Meeting held 16th May 1898 [p. 388] were taken as read and signed as correct.

The Hon. Secretary announced the decease of the following members:—Sydney Stent, *Fellow*, of Cape Town, and Judge Frederick Meadows White, *Q.C.*, *Hon. Associate*.

The following Associate attending for the first time since his election was formally admitted and signed the Register—viz. Louis Antonio Hayes (Manchester).

The Chairman announced that the Privy Council had sanctioned the amendments and additions made to By-laws 9, 15, 30, and 31, in accordance with the Resolutions passed and confirmed by the Institute.

The Hon. Secretary announced the receipt of donations to the Library [see *Supplement*], and an expression of thanks to the several donors was ordered to be entered on the Minutes.

The Chairman read the Reports of the Scrutineers appointed by the Annual General Meeting to conduct the election of the Council and Standing Committees.* The following were declared to be the results:—

THE COUNCIL.

PRESIDENT.—Professor Aitchison, R.A. [unopposed].

VICE-PRESIDENTS (4).—William Milner Fawcett; Henry Louis Florence; Ernest George; Edward Augustus Gruning [unopposed].

HON. SECRETARY.—William Emerson [unopposed].

MEMBERS OF COUNCIL (18).—Aston Webb, 457 votes; John McKean Brydon, 408; Edward William Mountford, 405; John Belcher, 374; John Alfred Gotch, 373; Richard Phené Spiers, 357; William Douglas Caröe, 355; James Brooks, 351; Paul Waterhouse, 327; John Slater, 325; Alexander Graham, 320; Henry Heathcote Statham, 316; Thomas Blashill, 315; Leonard Stokes, 297; Beresford Pite, 288; Campbell Douglas, 284; Benjamin Ingelow, 278; Percival Gordon Smith, 264. Not elected: *Thomas William Cutler*, 261; *Edwin Thomas Hall*, 257; *Ralph Selden Wornum*, 255; *Charles Hadfield*, 223; *William Howard Seth-Smith*, 217; *Herbert Duncan Searles-Wood*, 213; *William Young*, 211; *Hampden William Pratt*, 182; *John Tavenor Perry*, 168; *Arthur Benjamin Plummer*, 155; *Delissa Joseph*, 77.

* The Scrutineers were Messrs. H. O. Cresswell, H. P. Burke Downing, John Hebb, Francis Hooper, Zeph. King, and Hugh Stannus, *Fellows*; H. Hardwicke Langston, Fred. W. Marks, E. W. Wimperis, Harold A. Woodington, and Herbert A. Satchell, *Associates*. Their Report states that 532 voting-papers were received, and of this number three were invalid.

ASSOCIATE-MEMBERS OF COUNCIL (2).—Henry Thomas Hare, 233 votes; Arthur Smyth Flower, 215. Not elected: *Edward Guy Dawber*, 197; *Andrew Noble Prentice*, 123; *James Sivewright Gibson*, 122; *Alfred Henry Hart*, 47.

REPRESENTATIVES OF ALLIED SOCIETIES (9).—Robert Isaac Bennett (Manchester Society of Architects); William Larkins Bernard (Bristol Society of Architects); Albert Nelson Bromley (Nottingham Architectural Society); John James Burnet (Glasgow Institute of Architects); Thomas Drew (Royal Institute of the Architects of Ireland); Charles Busted Fowler (Cardiff, South Wales, and Monmouthshire Architects' Society); James Hine (Devon and Exeter Architectural Society); Leslie Ower (Dundee Institute of Architecture); Albert Edwin Sawday (Leicester and Leicestershire Society of Architects) [unopposed].

REPRESENTATIVE OF THE ARCHITECTURAL ASSOCIATION (LONDON).—George Halford Fellowes Prynne [unopposed].

[The above members declared to have been duly elected compose the Council.]

AUDITORS.—Zephaniah King, *Fellow*; Frederick William Marks, *Associate* [unopposed].

THE STANDING COMMITTEES.

Art Standing Committee.

FELLOWS (10).—Ernest George, 442; John McKean Brydon, 435; Alfred Waterhouse, 433; Edward William Mountford, 420; William Douglas Caröe, 406; James Macvicar Anderson, 405; James Brooks, 405; Beresford Pite, 364; William Young, 323; Henry Heathcote Statham, 316. Not elected:—*John James Burnet*, 307; *Charles Hadfield*, 247.

ASSOCIATES (6).—James Sivewright Gibson, 463; Henry Thomas Hare, 461; George Campbell Sherrin, 460; Robert Shekleton Balfour, 453; John William Simpson, 455; Owen Fleming, 426.

Literature Standing Committee.

FELLOWS (10).—Alexander Graham, 435; Richard Phenè Spiers, 430; Paul Waterhouse, 414; William Alfred Pife, 412; Henry Louis Florence, 406; Benjamin Ingelow, 398; Henry Heathcote Statham, 396; Sydney Smirke, 363; John Tavenor Perry, 347; Ralph Selden Wornum, 347. Not elected:—*Francis Edward Caws*, 260; *John Hebb*, 218.

ASSOCIATES (6).—Arthur Smyth Flower, 395; Percy Scott Worthington, 385; Leslie Waterhouse, 374; Andrew Noble Prentice, 346; Arthur Thomas Bolton, 325; Ravenscroft Elsey Smith, 317. Not elected:—*John Humphreys Jones*, 253; *Edward William Hudson*, 159.

Practice Standing Committee.

FELLOWS (10).—Thomas Batterbury, 457; Walter Hilton Nash, 450; Joseph Douglass Mathews, 449; Edmund Woodthorpe, 449; Samuel Flint Clarkson, 446; James Osborn Smith, 444; Thomas Harris, 441; George Hubbard, 440; Alexander Henry Kersey, 439; Charles James Smithem, 418.

ASSOCIATES (6).—William Henry Atkin-Berry, 402; Charles Henry Brodie, 384; Augustus Henry Tanner, 380; William Henry White, 368; Herbert Hardwicke Langston, 362; Francis Thomas Wilberforce Goldsmith, 352. Not elected:—*Robert Stark Wilkinson*, 300.

Science Standing Committee.

FELLOWS (10).—Percival Gordon Smith, 471; William Charles Street, 465; William Howard Seth-Smith, 455; John Salmon Quilter, 453; Lewis Angell, 451; Herbert Duncan Searles-Wood, 449; Hampden William Pratt, 441; Alfred Saxon Snell, 441; Benjamin Tabberer, 438; Lewis Solomon, 437.

ASSOCIATES (6).—Matthew Garbutt, 426; Henry William Burrows, 425; Max Clarke, 425; Sydney Benjamin Beale,

389; George Pearson, 387; Bernard John Dicksee, 383. Not elected:—*Arthur Richard Mayston*, 249.

On the motion of the Chairman, a cordial vote of thanks was passed to the Scrutineers for their services, and briefly acknowledged on their behalf by Mr. Zeph. King [*F.*].

The Chairman announced that by a resolution of the Council under By-law 20, the following Associates had ceased to be members of the Royal Institute; viz.: William Nicholson Cumming, Clement Weyland Jackson, George Mann, and James Tolley, junior.

ELECTION OF MEMBERS.

The following candidates for membership were elected by show of hands under By-law 9, namely:—

As Fellows (7).

MICHAEL FRANCIS CAVANAGH [*A.*, *qualified* 1888], Vice-President of the West Australian Institute of Architects (Perth, West Australia).

JOHN JAMES THOMSON [*A.*].

CHARLES EDWARD BATEMAN [*A.*, *qualified* 1895], President of the Birmingham Architectural Association (Birmingham).

JAMES SOUTTAR, President of the Aberdeen Society of Architects (Aberdeen).

FREDERICK WILLIAM LACEY, M.Inst.C.E. (Bournemouth).

GEORGE CAMPBELL SHERRIN [*A.*].

WILLIAM BANKS GWYTHYR, Assoc.M.Inst.C.E. [*A.*, *qualified* 1886] (Calcutta).

As Associates (2).

GEORGE BENSON [*Qualified* 1885], President of the York Society of Architects (York).

FRANK PECK [*Qualified* 1895].

As Hon. Fellow.

SIR EDWARD JOHN POYNTER, President of the Royal Academy.

THE REVISED SCHEDULE OF PROFESSIONAL CHARGES.

The Chairman having presented and formally moved the adoption and issue of the revised Paper "The Professional Practice as to the Charges of Architects," as recommended by the Council for approval and adoption, and Mr. J. Douglass Mathews, Chairman of the Committee responsible for the revision of the document prior to its consideration by the Council, having explained to the Meeting the nature of the variations made from the original, Mr. Beresford Pite [*F.*] objected that such variations were of too trifling a character to justify the withdrawal of the existing Schedule, which had become familiar to and was generally accepted by the public as an authoritative document. Being pressed to move an amendment, Mr. Pite declined to do so at that stage, but intimated his intention of moving the rejection of the revised Schedule after its clauses had been discussed in detail. A long discussion ensued, whereupon the Hon. Secretary, in order to take the sense of the Meeting, moved that the original Schedule should be retained in its present form. The amendment, seconded by Mr. E. W. Gruning, *Vice-President*, was put from the Chair, and lost.

Discussion on the original motion then proceeded, and various amendments on clauses 1 and 2 brought forward by Mr. Wm. Woodward [*A.*] having been discussed and with one or two exceptions adopted, it was ultimately

RESOLVED, that clauses 1 and 2 of the Revised Schedule should read as follows:—

1. The usual remuneration for an architect's

services, except as hereinafter mentioned, is a commission of 5 per cent. on the total cost of works executed under his directions. Such total cost is to be valued as though executed by a builder with new materials. This commission is for the necessary preliminary conferences and sketches, approximate estimate when required (such, for instance, as may be obtained by cubing out the contents), the necessary general and detailed drawings and specifications, one set of tracings, duplicate specification, general superintendence of works, and examining and passing the accounts, exclusive of measuring and making out extras and omissions.

2. This commission does not include the payment for services rendered in connection with negotiations relating to the site or premises, or in supplying drawings to ground or other landlords, or in surveying the site or premises and taking levels, making surveys and plans of buildings to be altered, making arrangements in respect of party-walls and rights of light, or for drawings for and correspondence with local and other authorities, or for services consequent on the failure of builders to carry out the works, or for services in connection with litigation or arbitration, or in the measurement and valuation of extras and omissions. For such services additional charges proportionate to the trouble involved and time spent are made. The clerk of the works should be appointed by the architect, his salary being paid by the client.

On the motion of Mr. Wm. Woodward [A.], seconded by Mr. Zeph. King [F.], the debate was then adjourned, and the Meeting separated at 10 p.m.

ALLIED SOCIETIES.

The Leicester Society: Annual Report.

The Twenty-fifth Annual Report of the Leicester and Leicestershire Society of Architects states that its membership numbers eleven honorary, sixteen assistant, and five pupil members, or a total of 79 members all told. The Society now embraces nearly all the architects practising in Leicester, and members of the profession resident at Loughborough. Market Harborough and Melton Mowbray have joined; consequently a more uniform system of professional practice and charges is ensured. For the first time in the annals of the Society one of its members, Mr. Arthur Wakerley, has been selected to fill the office of mayor of the ancient borough of Leicester. The Council, in their report, record their appreciation of and admiration for his abilities to fill the chief magistrate's chair, and refer to the great services Mr. Wakerley rendered the town as chairman of the Highway and Sewerage Committee of the Corporation. Building operations in the district have been seriously hampered by a dispute between the Operative Bricklayers and Plasterers respecting the laying of *in situ* paving and screeding for wood-block and tile floors. The chief matter affecting the Society is the scarcity of plasterers, there being more plastering to be done than skilled men to do it. It has become a question for the profession to consider whether in many cases some substitute cannot be found for plastering, particularly in the more ornamental work. Appreciative reference is made in the report to the exhibition of the R.I.B.A. Prize Drawings at Leicester, as forming an incentive to local students to attain a higher and better standard of design and drawing. Members are urged to record the discovery of any archaeological or geological remains found in their district. The Curator of the Town Museum is open to receive all such particulars, and it is suggested that the Society may assist in preventing damage being done to the ancient landmarks

by reporting any danger threatening the destruction of interesting architectural remains. The Prizes Committee lament the paucity of competitors for the prizes offered by the Society for designs and drawings, indicating as it does much apathy on the part of the majority of architectural students in Leicester. Only four sets of drawings were received. The first prize for a design for a dining-room interior was awarded to Mr. W. H. Pick, and the second to Mr. W. H. Riley. Mr. B. W. Bailey took the first prize for architectural sketches. In a brief review of the works submitted, Messrs. Pick and Bailey's work receive high commendation. The prizes and subjects for the ensuing session are as follow:—

1. Design for Seniors: First Prize, £2 2s.; Second Prize, £1 1s. Subject: Design for a Street Façade, having 25 feet frontage, with double-fronted shop to the ground floor, and being not less than three storeys in height.

2. Design for Juniors: First Prize, £2 2s.; Second Prize, £1 1s. Design for a Block of Four Rural Cottages.

3. Architectural Sketches and Measured Drawings of either Old or New Work: First Prize, £2 2s.; Second Prize, £1 11s. 6d.; Third Prize, £1 1s.

4. Travelling Studentship, value £5 5s., to be awarded the competitor in any of the foregoing competitions whose work the committee adjudge to be of highest merit. The winner is expected to undertake an architectural sketching tour of not less than ten days, and submit sketches done during the tour.

The competition is open to students under the age of 25 years, in the office of any architect or surveyor in the town or county of Leicester.

Educational Facilities at Bristol.

The Principal of the Merchant Venturers' Technical College, Bristol, has intimated to the Allied Society at Bristol that it is proposed to hold a special course of lectures for students desirous of presenting themselves for the Intermediate Examination of the Institute.

NEWLY-ELECTED OFFICERS AND COUNCILS.

The Bristol Society.

President, Mr. W. L. Bernard [F.]; *Vice-Presidents*, Messrs. W. V. Gough and Joseph Wood; *Hon. Sec. and Treasurer*, Mr. H. Dare Bryan; *Hon. Librarian*, Mr. R. C. James [A.]; *Council*, Messrs. F. Bligh Bond [F.], W. S. Skinner, J. H. La Trobe [F.], G. H. Oatley, F. W. Wills, J. F. Wood [A.]; *Auditors*, Messrs. Thos. Nicholson and T. H. Weston [A.].

The Devon and Exeter Society.

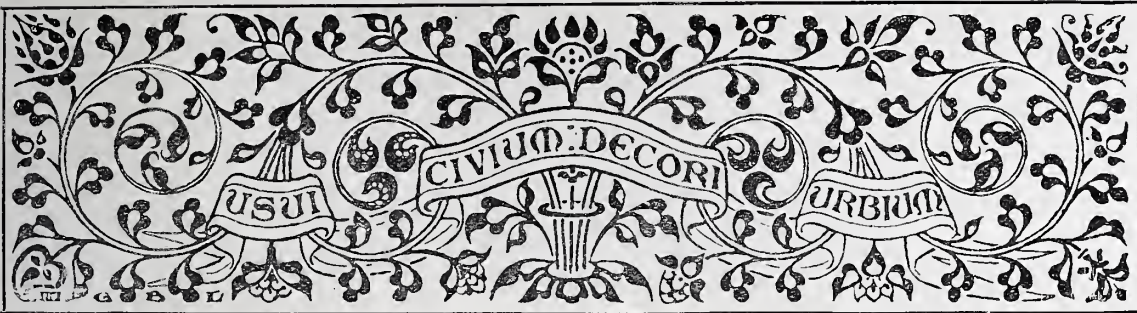
President, Mr. James Crocker [F.]; *Vice-President*, Mr. Henry George Luff [A.]; *Council*, Messrs. Arnold Thorne [F.], Charles King, George Soudon Bridgman, C. J. Tait [A.], S. Dobell, James Jerman [F.], B. Priestley Shires [A.]; *Hon. Treasurer*, Mr. Octavius Ralling; *Hon. Secretary*, Mr. Harbottle Reed; *Ex-officio member of Council*, Mr. James Hine [F.], Past President.

The Liverpool Society.

President, Mr. W. E. Willink [A.], M.A.; *Vice-Presidents*, Messrs. W. Owen [F.] and J. Woolfall; *Joint Secretaries*, Professor F. M. Simpson and Arnold Thornely [A.]; *Hon. Treasurer*, Mr. James Dod; *Hon. Librarian*, Mr. J. W. Blakey [A.]; *Members of Council*, Messrs. C. J. Anderson, H. L. Beckwith, J. W. Blakey [A.], T. E. Eccles [A.], Henry Harley [F.], William Owen [F.], J. Woolfall, F. E. Pearce Edwards [A.], and E. P. Hinde [A.].

The York Society.

President, Mr. George Benson [A.]; *Vice-Presidents*, Messrs. C. H. Channon and J. T. Pegge; *Hon. Treasurer*, Mr. William Hepper; *Hon. Secretary*, Mr. A. B. Burleigh; *Hon. Librarian*, Mr. S. G. Highmoor; *Committee*, Messrs. J. Ferguson, A. Hirst, T. Monkman, A. J. Penty, and E. A. Pollard.



THE ROYAL GOLD MEDAL 1898.

Presentation to Professor AITCHISON, R.A., at the Meeting of the 20th June 1898.

ADDRESS BY MR. F. C. PENROSE, F.R.S., Litt.D., D.C.L., *President* 1894-96.

BROTHER ARCHITECTS, LADIES, AND GENTLEMEN,—

I HAVE had great pleasure in responding to the request made to me that, as preceding President of the Institute, I should undertake an office the only one I can imagine which your actual President would not perform a great deal better than I can; but under the circumstances I can understand his hesitation in respect to the function which has called us together to-night. And it is, perhaps, better also that the person who undertakes the duty of investing the recipient of this honour should be independent of the body who made the selection of the name to be presented to Her Majesty. Few, if any, of our own members will want to be told of the claims of George Aitchison, R.A., for this honour; but the proceedings of this evening will have a wider circulation, and it is incumbent on me to show, as I hope to do, how fully the Council are justified, both on architectural and literary grounds, in the choice that has been made.

Our President's father was an architect, and appears to have destined him for the profession from the very first. There have been, no doubt, cases where this "predestination," if I may call it so, has had an unfavourable effect, and some of the most brilliant careers (of which those of Lord Leighton and the President of the Royal Academy are instances) have been of those whose natural bent opposed itself successfully to parental proposals. But exceptions do not disprove a rule, and it is evident that in general the rule has worked well, as it certainly has in the case before us. Mr. G. Aitchison, senior, up to the time of his death, was architect to the St. Katharine's Docks Company. His practice was mainly in wharves, warehouses, and offices, and structural alterations on a large scale, and he built the road stations on the London and Birmingham Railway. In his younger days he was very intimate with Donaldson, who may be called the Father of the Institute; with T. H. Wyatt, who acted under him during the building of the Docks; and he reckoned amongst his acquaintances Sir Charles Barry and Professor Cockerell. The two former of these took great interest in our President as a boy. Thus he was bred in an architectural atmosphere.

His regular education began at Merchant Taylors' School, where he remained until his sixteenth year, when he was articled to his father, and during his pupilage attended the science and art classes at Somerset House, where the late Mr. Herbert, R.A., was then master. In 1847 he became a student of the Royal Academy, and after the completion of his articles took the degree of B.A. at the University of London, in 1851, after having gained two prizes in

mathematics at University College. In January 1853 he travelled through France, and thence to Genoa, Leghorn, and Pisa, and arrived in Rome just before the Holy Week, visiting with keen interest the most important buildings. From Rome he travelled by land to Naples with a friend of his father, and thence to Amalfi, Salerno, and Pæstum. Returning to Rome, he made valuable friendships with the artists assembled there in that year (1853)—viz. G. H. Mason, the idyllic painter, by whom he was introduced to two future Presidents of the Royal Academy, Leighton and Sir Edward Poynter; and he also met Waterhouse and W. Burges. Leaving Rome after the Holy Week of 1854, he travelled in company with Burges to Arezzo, Perugia, and Assisi, where they stayed some weeks, making notes and sketches of the important fresco decorations of Cimabue and Giotto in the church of San Francisco. Thence they went to Florence, where they stayed several months, making notes and taking sketches and measurements of some of the palaces and other monuments; then continuing their studies at Siena, Pisa, Lucca, and Pistoja. As the cholera was raging they could not visit any places further north in Italy, but proceeded *via* Leghorn to Marseilles, and visited Lyons, Beaune, Dijon, and Troyes together, where they sketched and measured. The two friends then separated, and Mr. Aitchison met his parents at Paris, and then returned to Italy, visiting Milan, Venice, Padua, Ravenna, Faenza, Bologna, Ferrara, and Verona, and then, by way of Switzerland, Strasburg, and Paris, returned to London in the summer of 1855. He then became his father's head clerk, and was taken into partnership with him in 1859. Before this partnership he saw a great deal of work of an engineering character on the Chester and Holyhead Railway.

In June 1861 his father died, and he began practice on his own account, becoming architect to the St. Katharine's Docks Company, and after the amalgamation of the St. Katharine's with the London and Victoria Docks Company he was joint architect. He was engaged chiefly on large massive works—wharves, warehouses, and suites of offices—but was enabled occasionally to introduce architecturally designed fronts and staircases. The tobacco warehouse at the Victoria Docks had a frontage of 500 feet, by 170 in depth, costing £65,000. Messrs. Hubbuck's warehouse on the Thames, another of his buildings, has some architectural character.

Having thus laid the sound foundation of constructive execution, as indicated above, we find him, in 1865, emerging into genuine and finished architecture by the building of Lord Leighton's house, to which the glass house, the Arab hall, and picture gallery were subsequently added; and he also designed the ornamental furniture of the house, thus making it a complete work, not less admirable for its architectural form and fitness than for its masterly decoration, as an example of what may be done in permanent colour. The decoration is not of an evanescent character, being mainly of marble, mosaic, and tiles, the ancient tiles being Saracenic. The same is the character of other works by our President, as, for instance, 15 Berkeley Square, 1 South Audley Street, 9 Chesterfield Gardens, 52 Prince's Gate, and 1 Grosvenor Crescent, where the structural wood is carved or inlaid with ivory, mother-of-pearl, and lapis lazuli.

In 1869, through a chance recommendation given by Leighton, he altered and decorated the hall and staircase at 44 Belgrave Square for the Hon. Percy Wyndham, for which paintings in combination were made by Leighton; and this led to his being employed in much decorative work, viz. for Her Royal Highness the Princess Louise at Kensington Palace, for the Duke of Montrose, Lord Leconfield, Sir Wilfrid Lawson, Sir Sydney Waterlow, Mr. Eustace Smith, M.P., Mr. John Aird, M.P., Mr. J. H. Renton, and a great many others.

In 1868 he built the new Board Room for the Thames Conservancy, designing also the

furniture, whilst Leighton modelled the frieze of the Board Room. In 1871 he altered and enlarged the house of Mr. F. Lehmann, M.P., 15 Berkeley Square, and designed the furniture. In 1884 a house for Mr. J. Stewart Hodgson, which had been left unfinished by the death of his friend F. P. Cockerell, was put into his hands to complete. This implied the design of the whole of the interior work and decorations. For the same owner he also made large additions to his house at Lythe Hill, designed the fittings, and decorated the rooms with colour and bronze. In 1877-78 he rebuilt Founders' Hall, and in 1886 the Royal Exchange Assurance Offices in Pall Mall, and in 1892 decorated in colour the Livery Hall of the Goldsmiths' Company. The works above enumerated are only a small part of the list that could be mentioned.

He designed the decorations for the British Art Section at the Paris Exhibition of 1878, and was elected one of the officers of Public Instruction in Paris. He has been elected a member of the *Société Centrale* of the French architects, and also of that of Belgium, is a foreign Associate of the Royal Academy of Belgium, and has received numerous medals from America and our own colonial associations in recognition of his claims as an architect.

In 1881 he was elected Associate of the Royal Academy, and in that position annually gave some lectures, but, after being chosen Professor of Architecture in 1887, he has given a whole course of lectures annually.

To his architectural he has added much good literary work, besides the lectures already referred to. He wrote the Science and Art Syllabus on the Principles of Ornament. He edited Ward's *Principles of Ornament* in 1892, and four years later added an Appendix on the Orders. In fact, he not only edited but practically rewrote the whole work.

He is a contributor to the *Dictionary of National Biography*, and one of the Examiners in the Science and Art Department at South Kensington.

Although the claim for nomination to the Royal Gold Medal is not in the least confined to members of this Institute, and has been so considered by the Council on various occasions, it is nevertheless a source of great satisfaction to find one so worthy to receive it amongst our own body, and one who has so continually assisted our pursuits.

Elected thirty-six years ago, our Gold Medallist of this year has assisted frequently in the Council, was Vice-President for four years reckoning from 1889, has contributed various Papers of great interest, has been an Examiner in the Voluntary Examinations, and has worthily maintained since 1896 the honourable but not unonerous post of President.

I wish to conclude with a few remarks on the Royal Academy Professorial lectures before closing this short summary of our President's claims to this distinction. No one can have read these valuable lectures, always fully reported in *The Builder*, without feeling that they are calculated to encourage the architectural students who heard them, as well as those who have followed them as readers, to keep before their eyes a high ideal of Architecture as an Art, based on sound construction, technical knowledge, and true principles of design as its essential aim; and that whilst archæological considerations are not to be ignored they should never be allowed to dictate or force the hand of the architect into lines inconsistent with the former more important principles, and that it is only on such lines that Architecture can flourish as a living Art. I am not aware that any one has urged these views, which appear to me to be perfectly sound, so persistently and so well as our President, whom, with, I am sure, your approval, I shall now proceed to invest with Her Majesty's gracious gift.

PROFESSOR AITCHISON'S REPLY.

BROTHER ARCHITECTS, LADIES, AND GENTLEMEN,—

AFTER the flattering remarks that have been made by my learned predecessor, Mr. Penrose, who has just received honours from Cambridge, and is about to receive more from Oxford, it would be difficult to know what to say if it were necessary to speak of myself, but I do not think it is. All I need say is to return you my heartfelt thanks for the honour you have done me. In proposing me for this gracious gift of Her Majesty the Queen, and thus adding my name to the illustrious catalogue, you have, in my opinion, conferred on me as an architect the greatest honour that England can bestow.

The most ardent desire I have is to see English architecture come to the forefront, and erect masterpieces in England which epitomise the grand thoughts of the day, and give them a character which will attract mankind. When I look at Salisbury, at Westminster, at York, at Peterborough, at Durham, and at Lincoln I cannot think that they fall greatly below the most renowned cathedrals of Europe. I cannot believe that the nation that has given us the steam-engine, the railway, the telegraph, the steamboat, and all the triumphs of iron; that has given us Darwin, Tyndall, Huxley, and Herbert Spencer; Parkes, Simpson, and Lister; Turner, Leighton, Millais, and Burne-Jones; Wordsworth, Browning, Tennyson, and Swinburne, can have sunk so much below the standard of our semi-barbarous forefathers as to be incapable of developing the architecture we have into a true presentment of the highest aspiration of the nation and the ideal beauty of our time. No, it is that we have got into a wrong groove, and we must get out of it before architecture ever again becomes a progressive art, and can equal or surpass the glorious masterpieces of the past.

The Renaissance men, although they did some noble and some beautiful work, got architecture out of the way of progress by casting themselves at the feet of the Romans, and proclaiming that Roman architecture was perfection, and therefore could not be surpassed; ever since all the architects of Christendom have only paraphrased some deceased architecture.

No one can deny that architecture is the poetry of arrangement and construction, and we must have these at our finger-ends before we can hope to progress, so that when the heaven-born genius comes he will have his tools ready. Genius to us is a causeless *sport*, to use the breeder's term; but, looking at its paramount importance to mankind, one would think it of more importance for us to study the causes that produce genius than to improve the breed of racehorses or of sporting dogs. You are not to think that arrangement and construction alone will give us all we want, for if construction alone could do it the marvellous works in iron of the engineers would have given it us. We have first to conceive the proper character each of our buildings should have, and then to study the methods of expression that the masters of our art have employed, and to learn how we may express our thoughts in our own climate; and we have both to study and to strive, for these are the foundations of all improvement. We must, too, of necessity have change and novelty; different times, different surroundings, and different circumstances beget a different frame of mind. We cannot suppose that the delight at the lark's song affected the Greeks, the Romans, the mediævals, and people of the Renaissance exactly in the same way as it affects Englishmen of the nineteenth century. Homer and the Greek dramatists, Virgil and Horace, Dante and Chaucer were possibly poets superior to our own, but they do not come home to us like those of our own day. The loves and misfortunes of the past do not touch us as those of the present, and few of us can weep over the misfortunes of Hecuba, Iphigenia, Antigone, and Dido. Our own poets, Shake-

spere and Milton, whom we look on as the greatest, do not touch the inmost strings of our hearts like the poets of yesterday or to-day. Walter Scott saw this, and said the surroundings may be of any time you like, but the heroes and heroines must be of to-day, or no one will take an interest in them. Our revivals of Classic, of Gothic, or of Renaissance may be very clever and very good, but no one of them ever caused the same emotion in us as the originals did in the people of their day. I know you will say people did care for architecture in those days, and they do not now; but while there are buildings to be erected it depends mostly on the architect whether they are to be true and good, for he can always refuse to erect that which he feels is not true or not proper.

I feel sure that there must be structural poets among that vast army of architects with which the country is now furnished, and though I feel it is rather an impertinence to suggest what a poet should do, I cannot help feeling that there are vast fields still untouched. One of the greatest merits of Athenian architecture is that it takes the utmost advantage of the clear air and brilliant sunshine of Athens both in the main structure of its buildings and also in its mouldings; and, mind you, the materials are marble.

We, since Gothic times, have never taken the slightest trouble with our mouldings, to make them tell their tale in the damp and dulness of our climate, and when one considers that architecture has been defined as the art of moulding this alone offers a large field.

Another field, not altogether so untouched as moulding, is proportion, and that field is infinite. And here I speak of the infinity of good proportion, for there is a still greater infinity of bad. In a handful of flowering grasses each one will give you a different and elegant proportion at least for iron, and we need not be confined for ever to the classic proportions perfected by Vignola and Palladio.

We have scarcely tried to bring cast iron within the pale of architecture, although it has a capacity for taking almost every form, and is open to the magnificence of enamel. In fact, colour is almost untried, and, seeing the dust and soot of large manufacturing towns, it would add both to their healthfulness and to our good spirits, if, in our damp and depressing climate, the fronts of our buildings ceased to be of dingy brick and were resplendent with gorgeous colour and gleaming with gold. I know that there is a prejudice against the use of coloured and enamelled pottery (ironically called buildings of crockery), but since Nature has coloured all her work we need not be ashamed of colouring ours, and the gorgeous and monumental decoration of Darius's Palace at Susa should dispel this misconception.

I have only touched on a few subjects, but even with these I fear I have exhausted your patience. Let us hope that our new structural poets may give us a beauty and magnificence hitherto undreamt of; and that Architecture may again captivate the public and be the boast and pride of the coming century.



9, CONDUIT STREET, LONDON, W., 25th June 1898.

CHRONICLE.

Presentation of the Royal Gold Medal.

A numerous company of members and their friends, including several ladies, assembled at the Institute on the 20th to witness the presentation of the Royal Gold Medal. The President and Mr. Penrose met with the heartiest of receptions. Mr. Penrose, who has been a member of the Institute over fifty-two years, and himself received the Medal fifteen years ago, absent members will be glad to hear was looking remarkably strong and well. The President, unhappily, was suffering from a severe cold, which made speaking an effort. Other Gold Medallists present were Mr. James Brooks (1895) and Mr. Ernest George (1896).

On the walls of the Meeting-room were hung a collection of between fifty and sixty of the President's drawings, mostly water-colour, some of them done in the early fifties during the tour mentioned by Mr. Penrose. These included the exquisitely coloured vault of the Sanctuary of San Vitale, Ravenna; the Baptistery of St. Mark's, Venice; bits of the interior of Pisa Cathedral, one showing the famous lamp the oscillations of which suggested to Galileo the theory of the pendulum; interiors of Sant' Agnese, Rome; the Bocca della Verità, Santa Maria in Cosmedin, Rome, and other sketches. Others, representative of the President's executed designs, consisted of many well-known decorated interiors, some mosaic pavements, stained-glass windows, various ceilings and staircases, park gates, &c.

There were also exhibited a series of portraits of Gold Medallists since the first grant of the Medal in 1848. This collection, it may be mentioned, has been got together at some pains during the past twelve months. There are many gaps, but it is hoped to make the series quite complete. They are now hung in the recently opened Tea and Smoking Room.

Dr. A. S. Murray [*H.A.*], in a few remarks at the close of the Meeting, said he would not pretend to express the pleasure it gave them all to listen to Mr. Penrose when he was recounting

the achievements of the President from his youth up to the present date. To most of them that extraordinary versatility of his was more or less strange; they knew him chiefly from his drawings, from his lectures to the Academy, and from certain of his works, like the grand staircase for Lord Leconfield, in Chesterfield Gardens. Speaking for himself, he was not at all prepared to hear of the vast amount of work he had done in his earlier days. Most of them—at least, he himself—knew their President chiefly as a friend, as a man to whom classical architecture was dearer than perhaps to any other man he (Dr. Murray) had ever met; and especially because of the services the Professor had rendered in the Museum when they had been in difficulties of one kind or another in the restoration or reparation of pieces of ancient Greek architecture that had come down to them. No pleasure had ever been greater to him in such a difficulty than to have the assistance—the ready and warm assistance—of the President of the Institute. He would not have risen for a moment (he had no right to speak among people learned in architecture) except for this fact of a long friendship—which, however, was no matter of uniqueness, because they were all old friends of his—and except for his intimate connection with Greek architecture, which, so far as it was represented in the British Museum, was under his (the speaker's) charge for the time. Every one must have been much impressed by Mr. Penrose's record, and have listened with the greatest delight to the President's speech in reply.

The Congress of Hygiene at Madrid.

Mr. T. W. Cutler [*F.*], who kindly accepted the Council's nomination to represent the Institute at the recent International Congress of Hygiene and Demography at Madrid, reports as follows:—

5, Queen Square, W.C.: 20th June 1898.

TO THE PRESIDENT AND COUNCIL OF
THE R.I.B.A.

GENTLEMEN,—The Congress was opened on Sunday, the 10th of April, in the large hall of the National Library, and was a State function. It was expected that Her Majesty the Queen Regent and H.M. Alfonso XIII. would have opened the Congress in person, but owing to the hourly expectation of war being declared they were prevented. The Congress was opened by the Minister of the Interior, supported by other Ministers of State, the Archbishop, the Governor and Mayor of Madrid, distinguished naval and military officers, the Foreign Ambassadors, officers and savants from all the Courts of Europe, making a brilliant gathering of 2,000 persons. The rich costumes of the ladies vied with the orders, decorations, and uniforms of all nationalities. There was an unusually small number of

English delegates—only 43, whilst France and Germany were represented by 150 each.

I need not enter into the work of the Congress, as full details will be published later in the official proceedings which I hope to present to the Library of the Institute.

Notwithstanding that war was declared during the Congress, the delegates were treated with great courtesy and hospitality by the people and the State. Visits were arranged to Government buildings, hospitals, and other places of interest during the afternoons, and to banquets and receptions in the evenings. In particular I may mention that H.M. the Queen Regent and the King received us at the palace, and entertained us most regally.

The Prime Minister gave a State banquet at the Opera House—where I had the honour of being placed at the high table. On Sunday the 17th, the closing day of the Congress, the President, Council, and members of the Central Society of Architects of Spain most graciously and hospitably entertained me at a banquet which they gave in honour of the representative of the R.I.B.A. Most flattering speeches were made, and I thanked them for their good-fellowship, on behalf of the President and Council of the R.I.B.A., and assured them of a hearty welcome if they came to England.

I have the honour to remain,

Yours obediently,

THOMAS W. CUTLER.

The Library of Corpus Christi College, Oxford.

The following note has been received from the Rev. T. Fowler, D.D., President of Corpus Christi College, Oxford:—

May I be allowed, as President of the College, to call attention to what appears to me the singular omission in Mr. T. G. Jackson's paper on Mediæval Libraries, published in your number of May 21, of any mention of the interesting and historic Library of this College? It is the "trilinguis bibliotheca" (the three tongues being Latin, Greek, and Hebrew) of which Erasmus, writing to John Claymond, the first President, in 1519, says that it will attract more scholars to Oxford than were formerly attracted to Rome. This language is doubtless exaggerated; but still, a library amply furnished with printed books, the most recent products of the great continental printing-presses, in classical and secular as well as patristic and theological literature, must have been a notable and pleasing novelty to the learned world of Oxford. But it is, of course, the buildings rather than their contents with which Mr. Jackson is concerned. Still, it is curious that he should have overlooked a library which, with its fine barrel roof, its beautiful Tudor windows, and its ample proportions, is so characteristic a speci-

men of the domestic architecture of that time. Add the rows of benches, desks, and bookcases, which are probably of the same date as the building (1516 or 1517), and we have a library which, with its fittings, notwithstanding the removal of the chains and rods from the cases, and the substitution of plain balls for the more decorative finials which originally surmounted the benches, yields to none of the older libraries in Oxford, unless it be that of Merton, in historic or architectural interest.

Mr. Penrose's New Honours.

At Cambridge, on the 15th inst., the Public Orator, Dr. Sandys, in presenting Mr. Penrose for the honorary degree of Doctor in Letters, welcomed him back to his University as one who had taken his degree in the Mathematical Tripos of 1842, and who had thrice rowed in the University boat race some fifty-seven years ago, only once among the vanquished, but twice among the victors. He was probably the only man living who had stood not only on the summit of St. Paul's, but also on that of the Olympieum at Athens. *Viro ad tantam altitudinem evecto non sine reverentia quadam in hoc templo honoris lauream nostram læti decernimus.*

In the list of Mr. Penrose's honours given in *The Times*, one greatly prized by him was omitted—that of the Knighthood of the Order of the Saviour in Greece, conferred by the King of the Hellenes some years ago.

At Oxford, on the 22nd, Mr. Penrose received the honorary degree of Doctor of Civil Law, the Public Orator referring to him as the interpreter of the Parthenon, to whom archæological studies owed much of their present vitality.

Société Française d'Archéologie.

The Comte de Marsy (*Hon. Corr. M.*) has written to invite the co-operation of members of the Royal Institute at the Congress of the Société, to be held at Bourges early in July. Members wishing to attend should communicate at once with the Comte de Marsy at the office of the Société, Compiègne, France.

The Aberdeen Allied Society.

The establishment of a new Allied Society in Aberdeen has rendered necessary a partition of the old Province north of the Forth, of which Dundee was the centre. The Dundee Institute and the Aberdeen Society have come to the following arrangement, which has received the approval of the Council:—

Dundee to be the centre for the counties of Forfar, Perth, Fife, Kinross, and Clackmannan.

Aberdeen to be the centre for the counties of Aberdeen, Kincardine, Inverness, and the northern part of Scotland.

The Holborn-Strand Improvement.

The Improvements Committee of the London County Council have submitted to their Council a scheme for a new thoroughfare from Holborn to the Strand, which in the Council's recent publication, *History of London Street Improvements*, is officially described as "in accordance with the suggestions of the Royal Institute of British Architects as modified by the Improvements Committee." The Institute plan, which was submitted early in 1896, is given in the *JOURNAL*, Vol. III. 3rd Series, p. 435. The following is an extract from *The Times* of the 20th inst. :—

"The present scheme is to carry a new road, 100 feet wide, from a point in Holborn immediately opposite Southampton Row directly towards the Strand. The new street would absorb Little Queen Street, and, not touching, but running to the west of, Lincoln's Inn Fields, would cross the lines of Great Queen Street, Sardinia Street, Vere Street, and Stanhope Street. The approach to the Strand would take the form of a crescent, one horn of which would strike that thoroughfare at the corner of Wellington Street, thus giving direct access to Waterloo Bridge, while the eastern horn would enter opposite the church of St. Clement Danes, and in the immediate neighbourhood of the Law Courts. In forming the road it is proposed to acquire the whole of the buildings between the Strand and the new crescent, Wych Street being thus wholly and Drury Lane partially abolished. The area thus cleared would form one of the most valuable sites in London, and buildings of importance and architectural value would naturally be placed upon it. Holywell Street and the blocks of houses between it and the Strand would, it is unnecessary to say, disappear. The two churches of St. Mary and St. Clement Danes, on the other hand, would be untouched; and the Strand would be widened on the north of St. Mary's so as to place that striking building in a proper setting. The Law Courts would gain in dignity from the new approach and would group into the architectural features.

"We have said that the present is an appropriate time for carrying out such a scheme. Several improvements necessarily connected with such a street have already been authorised. The demolition of Holywell Street was sanctioned by Parliament last year. The widening of Southampton Row to 60 feet is in progress, arrangements for that purpose having been made with the Duke of Bedford by voluntary agreement; and the insanitary areas between Clare Market and Drury Lane are to be cleared and rebuilt under the authority of the Home Office and Parliament. Not only do these improvements facilitate the formation of the proposed street, but they furnish reasons against delay. The removal of the buildings between Holywell Street

and the Strand will greatly raise the value of the houses now standing on the north side of the former street, and, if these are at any time to be in turn taken for such a thoroughfare as that suggested, it is foolish to wait till their value is enhanced. The whole improvement should be carried out at the same time. Again, the insanitary areas, when cleared, will obviously be dealt with in one way if the neighbourhood remains as it is, and in quite a different way if one of the great streets of London runs through their midst. Hence, if the street is to be formed at all, the necessary Parliamentary power should be obtained without delay.

"Mr. Shaw Lefevre's estimate of the cost of the new street is surprisingly low. This arises from the fact that the property to be taken is mostly of a very poor character, while from its central position a great new street will supply sites of very great value. Poor as they are, the buildings taken (with the trade compensation incident to such a taking) are valued at no less than 4,442,500*l.* But the selling value of the ground-rents which will be created on the frontage lands is put at no less than 4,088,300*l.*, leaving a net cost of 354,200*l.* only. To this is to be added 120,000*l.* for the actual making of the street, with the accompanying subway and sewers, and 150,000*l.* for the expense of re-housing persons of the labouring class displaced. The total cost thus reaches 624,200*l.*, which represents about 3-16ths of a penny in the pound on the county rates for the first year after the commencement of the improvement. Against this is to be set such receipts as the Council may obtain from a betterment rate of the character authorised by Parliament in the case of the Tower Bridge approach. The expenditure will be a mere bagatelle for a thoroughfare which will enormously facilitate traffic in the heart of London, and will give air and space and dignity to a part of the capital which is at present a mere network of obscure streets."

REVIEWS. LXXV.

(197)

THE GUILDHALL, LONDON.

A Guide to the Guildhall of the City of London: together with a short account of its Historic Associations, and the Municipal Work carried on therein. Printed by order of the Corporation of London under the direction of the City Lands Committee; and compiled by John James Baddeley, Chairman of the Committee, 1898."

By the courtesy of the Corporation of London this official guide to their Guildhall has been added to the Library of the Institute. It is a fresh token of the revived interest which the Corporation have for many years past taken in the history of the ancient and famous city they represent, and the desire shown to extend their

influence to matters of art and general culture for the benefit of the citizens. Besides the important series of volumes published by the Corporation during the past half century dealing with the history of the City, there are books, old and new, sufficient to form a goodly library, on the history, archaeology, and architecture of London. None, however, surpasses in real value Stowe's "Survey," which gives a most minute and almost exhaustive account of this city of old renown before the Great Fire swept it all away.

The walls of the Guildhall remain almost the sole memorial of old London—Shakespeare's London—to carry on the historic associations and link the past and present ages together. These walls, which echoed the jubilation of the citizens when the news of the victory at Agincourt was brought to the City, have from that time till now been the chief resort for counsel in times of danger and for receptions and festivities in times of victory and national rejoicing. Apart from such memories, and viewing the Guildhall from the point of view most interesting to us as architects, it presents many matters for study and many archaeological problems not easy of solution, for the Guildhall of to-day is the result of centuries of additions and alterations.

The Crypt is probably the most interesting portion of the building, as indicating the early history of the Guildhall. It is divided transversely into two equal halves by a brick wall. The eastern half has six handsome clustered pillars of Purbeck marble, and half pillars on the side walls carrying a finely groined stone roof and the floor of the hall above. The four bays correspond with the bays of the roof of the hall, and the half pillars continued through the hall divide the wall and support the principals.

The western half is altogether different; here we have two brick walls supporting brick barrel-vaults running east and west. The centre division or aisle is clear, but the side vaults are divided by cross walls of brick corresponding to the four bays of the hall above. Still more curious it is to find in this crypt that *between* these brick divisions are half pillars on the side walls, having springing stones of a groined roof, all of much simpler character than those in the Eastern Crypt. These very clearly show that this half of the Crypt was not built along with the hall above, but belongs to some earlier structure, and there can be no reasonable doubt that this earlier structure was the older Guildhall, said to have been built in 1326, which had its front in Aldermanbury. Probably this Western Crypt, being very old, was too weak to stand the strain of the fire and the falling of the roof of the hall and one of the two great lanterns which surmounted it, and in the rebuilding of 1669 the present brick walls and vaulting were substituted.

In "The Guide" will be seen a sketch of "the

Ancient Roof" which was destroyed by the fire, but, unfortunately, the authority for the sketch is not mentioned. After the present splendid roof was erected by our late President, Sir Horace Jones, he read a Paper entitled "Some Account of the Alterations and New Buildings at the Guildhall, City of London,"* which was followed by a very interesting discussion as to the kind of roof that was burnt in 1666—whether it was carried by moulded arches of stone, as at Mayfield in Sussex, for which there was some good evidence, or a hammer beam roof of the usual type. If at the time there had been any sketch, such as is given in "The Guide," known or approved as authentic, there would have been no debate. It would, therefore, be interesting and instructive to know if there is any good authority for this "Ancient Roof," so that we may judge of the value of the arguments then used by the most competent architects and antiquaries who joined in the discussion.

It is a thousand pities that while the Corporation were reconstructing the Guildhall under the able guidance of Sir Horace Jones, they did not erect a new front. At present it is simply wretched, and looks as if it would soon compel something being done by falling down altogether. Strangers coming to visit the Guildhall of the greatest city the world has known are greatly shocked at its outward appearance, and the bad impression of the first and last view is likely to remain even after seeing the interior of the Hall, the Council Chamber, the Library, and all the other really beautiful interiors of which illustrations are given in "The Guide."

We may add, in closing these brief notes, that to see the Guildhall in all its glory the visitor must be present at some great function—royal reception or Lord Mayor's dinner. When the eight hundred guests are seated at the tables shown in one of the illustrations: when the dais is occupied by the notables of the land: when the loving-cup circulates and the toast-master calls on the assembly to drink the health of "the Lord Mayor"—may we be there to respond!

THOMAS ARNOLD.

(198)

ARCHITECTURAL PHOTOGRAPHY.

Architectural Photography: Practical Lessons and Suggestions for Amateurs. By G. A. T. Middleton, A.R.I.B.A. 80. Lond. 1898. [Messrs. Hazell, Watson, & Viney, Ltd., 1, Creed Lane, Ludgate Hill.]

There is no doubt that the "amateur photographer" is becoming a very important person, so far as numbers go, and of course the literature on the subject must keep pace with the demand. One of the latest attempts to provide the would-be photographer with hints as to what to do and

* R.I.B.A. TRANSACTIONS 1865, p. 177.

what to avoid is the little work by Mr. G. A. T. Middleton, entitled "Architectural Photography," or, as the title page states, "Practical Lessons and Suggestions for Amateurs." The short preface indicates that the book is a reprint of articles which appeared from time to time in the *Amateur Photographer*, and is intended "to show how architecture should be studied from a pictorial view rather than as a science." This is a very much-to-be-desired attempt, as generally photographs of architectural subjects are far from being "pictures." It is really very difficult to make a picture with any life in it by such a mechanical means as the action of light on a sensitised medium, quite apart from the skill required in the various stages through which the plate or film and print have to go before the completed picture is ready for inspection. Perhaps there is a little too much use made of the ideal, too great an attempt made to force it on the reader. The porch at Dol may express "rest," but it is the porch which does so, not the photograph or the method by or manner in which it is transferred to paper. A good hand at manipulation might express the story, if there be one, which the porch has to tell, much better than the man who has the whole ideal in his head, but cannot get the lens to bring it out for him; however, I must not enlarge upon what is a matter of opinion only.

The book is very pleasant reading to one who has got over the first difficulties (which every amateur has to surmount), particularly if he be of an architectural turn of mind; at the same time it is a question if the man who can take a photograph of every "bit" he fancies will be quite so ready with his pencil as he should be, and there is no doubt more will be learnt by making a sketch than by taking a photograph, so that, taking all things together, for the student, sketching is very much more to be desired than photographing, the sketch being "illustrated" with bits of detail to a larger scale and figured dimensions. This, I take it, is the way to learn, photographing the way to amuse oneself. At the same time it should be recollected that photographs are most useful as records of old buildings which are to be taken down, being for this purpose much more valuable than sketches.

MAX CLARKE.

(199)

AN ARCHITECT'S REMINISCENCES.

An Architect's Experiences—Professional, Artistic, and Theatrical. By Alfred Darbyshire, F.S.A., Author of "The Booke of Olde Manchester and Salford." 80. Manchester, 1898. Price 10s. 6d. net. [J. E. Cornish, 16 St. Ann's Square, Manchester.]

No class of modern literature is more intimately connected with the increased publicity and facilities for social intercourse of the last fifty or sixty years than that of personal reminiscence, and the

experiences of those who have attained some sort of publicity, or have to tell of those whose names are before the public, find, as a rule, ready readers.

Though written, as the preface tells us, more with the intention of interesting friends at whose request the book was undertaken, than in the hope of appealing to a general public, and though events and persons are occasionally treated in a strain of somewhat more importance than would be attached to them by the man in the street, *An Architect's Experiences* overflows with enthusiasm, and is full of anecdotes genially and racily told. The book is principally concerned with Manchester, and its connection with pictorial and dramatic art, but also contains records of events of interest in the history of the theatre during the period extending (as the author describes his range of memory) from the "tail end of Keene's work" down to the present time, and supplies us with a fund of reminiscence of professional and amateur theatricals. A brief sketch of the development of the drama during that period is illustrated by anecdotes scattered up and down the book, especially by those relating to the work of the elder Calvert and Sir Henry Irving.

Little serious criticism is attempted, but few will quarrel with the conclusion at which Mr. Darbyshire arrives with regard to the accurate and elaborate staging of the Shakespearean drama achieved by the well-known actors and managers of to-day. The mass of playgoers would hardly tolerate Shakespeare before labelled screens; but, though such representations may be regarded as striving rather after the uncommon than the ideal, many will risk the "soft impeachment" of "superiority" by the confession of thorough enjoyment from some of the plays ably acted without scenic accessories.

The book has been carefully edited, with a few small exceptions. The statement referring to the classic theatre, that "the safety of human life did not constitute an element in the construction of gladiatorial arenas or theatrical auditoria," is rather sweeping.

An Architect's Experiences has little special professional importance; but one leaves it with the feeling of having read some pleasant gossip, and with the impression that, dealing though it does with many men and many things, no unkindly word has been said about any of them.

Manchester.

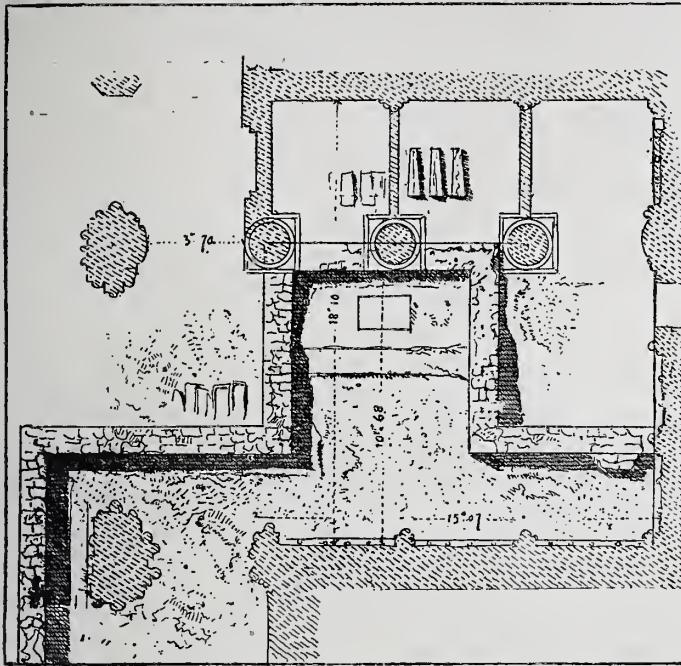
PERCY WORTHINGTON.

(200)

PETERBOROUGH.

The Cathedral Church of Peterborough: A Description of its Fabric, and a Brief History of the Episcopal See. "Bell's Cathedral Series." 80. Lond. 1898. Price 1s. 6d. [Messrs. George Bell & Sons, York Street, Covent Garden, W.C.]

This useful little publication is one of a series of excellent guide-books to our cathedrals, published



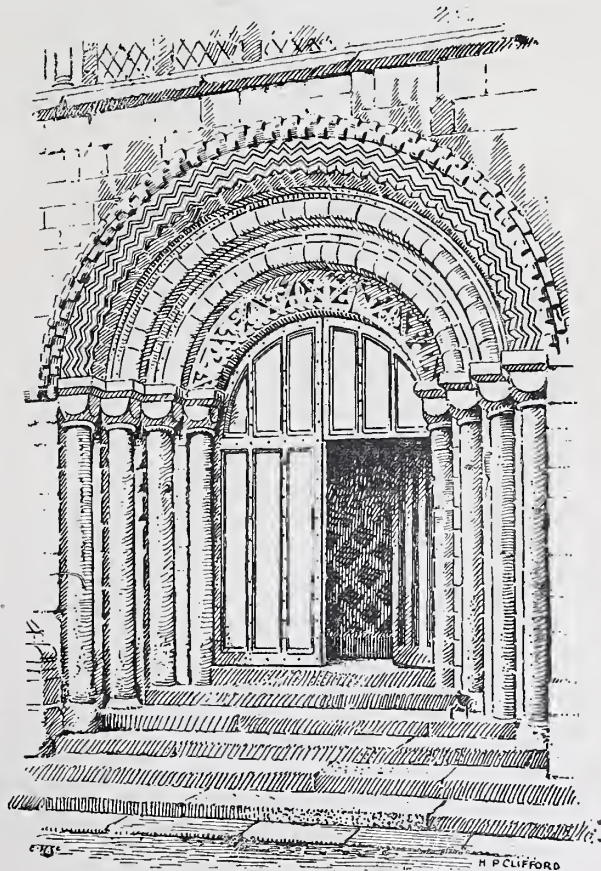
Peterborough Cathedral. Remains of Saxon Church (Piers and Walls of present South Transept shaded diagonally). Drawn by W. H. Lord.

times are noticed, and some of the fittings of the recent restoration are included in the illustrations. Attention is called to several interesting buildings in the precincts, among others to the gateway forming the entrance, also to the Chapel of St. Thomas à Becket, the Deanery gateway, the walls of the old refectory, and the beautiful ruins of the infirmary; but, with regard to the entrance gateway to the precincts, a curious mistake is made in describing the pointed arch on the west side as Perpendicular, when it clearly belongs to the Decorated period, and must have been erected about A.D. 1350. The author also omits to mention that pilgrims to the shrine of St. Peter took off their shoes at this gateway.

The latter part of the book comprises notes on the picturesque Guildhall in the Market-place, and on the parish church of St. John the Baptist, formerly situate in the fields east of the cathedral, and rebuilt about the year 1400 in its present position near the Market-place. The author concludes

by Messrs. George Bell and Sons, and edited by Messrs. Gleeson White and E. F. Strange; the author in this case being the Rev. W. D. Sweeting, Vicar of Maxey, formerly Head Master of the King's School, in the Precincts, Peterborough. The book commences with a history of the extraordinary development of the city in the present century, during which the population has increased from 3,500 to about 30,000; and then traces the history of the monastic church of St. Peter from Saxon times (when the town was known first as Medehampstead, and in later times as Burgh) to the dissolution of the monastery by Henry VIII., in whose reign the last Abbot became the first Bishop. Much interesting information is given of the gradual growth of the present cathedral, which was commenced at the east end and finished at the west, with the present glorious west front; and a plan, on page 9, shows the lately discovered foundations of part of the Saxon Church, which was the predecessor of the present building. The book is well illustrated by photographs, and contains some careful plans and artistic drawings by Messrs. W. H. Lord and H. P. Clifford.

In connection with the recent controversy as to the best method of dealing with the defective parts of the west front, the author ably supports the Dean and Chapter in their decision to rebuild the gables, under the advice of their architect, the late Mr. Pearson; and, as a former resident in the precincts, mentions the frequency of falling stones. Various improvements to the cathedral in modern



Doorway to Peterborough Cathedral from Cloister Court, North-east. Drawn by H. P. Clifford.

with a brief history of the Benedictine monastery attached to the church of St. Peter, with a list of the abbots in chronological order, and of the bishops from 1541 to the present time.

Congratulations are due to Messrs. Bell & Sons,

the editors, the author, and the illustrators, on the production of an excellent, reliable, and interesting guide-book, which only needs to be studied to be appreciated.

Peterborough.

H. M. TOWNSEND.



Photochrom. Co. Photo.

Church of S. John the Baptist and Guildhall, Peterborough.

MINUTES. XVI.

At the Sixteenth General Meeting (Ordinary) of the Session, held Monday, 20th June 1898, at 8 p.m., Professor Aitchison, R.A., *President*, in the chair, with 37 Fellows (including 12 members of the Council), 18 Associates, 5 Hon. Associates, and numerous visitors, the Minutes of the meeting held 6th June 1898 [p. 406], were taken as read and signed as correct.

The following Associates, attending for the first time since their election, were formally admitted, and signed the Register—namely, Frank Peck and Harry John Pearson.

Mr. Penrose, F.R.S., Litt.D., *Past-President*, delivered an Address on the Presentation of the Royal Gold Medal to Professor Aitchison, R.A., who, having been duly invested therewith, replied in acknowledgment of the honour. After a few observations by Dr. Murray [H.A.] the proceedings closed, and the Meeting separated at 9 p.m.

Books received for Review.

Specifications for Building Works and How to Write them. By F. R. Farrow, F.R.I.B.A. Sm. So. Lond. 1898. Price 3s. 6d. [D. Fourdrinier, *Builder* Office, 46 Catherine Street, W.C.]

Architecture Among the Poets. By H. Heathcote Statham. With illustrations by the Author. So. Lond. 1898. Price 3s. 6d. net. [B. T. Batsford, 94 High Holborn.]

ALLIED SOCIETIES.

NEWLY ELECTED OFFICERS, &c.

The Royal Institute of the Architects of Ireland.

President, Mr. Thomas Drew [F.], R.H.A.; *Hon. Sec. and Treasurer*, Mr. Albert E. Murray [F.], A.R.H.A.; *Members of Council*, Messrs. J. J. O'Callaghan, J. Rawson Carroll [F.], George C. Ashlin, R.H.A., Charles Geoghegan, Charles J. McCarthy, William M. Mitchell, R.H.A., R. C. Millar [F.], J. H. Pentland [F.], W. Kaye Parry, W. H. Byrne; *Auditors*, Messrs. F. Batchelor and C. H. Ashworth.

The Leeds and Yorkshire Society.

President, Mr. Geo. Corson; *Vice-Presidents*, Messrs. John Tweedale [F.] and T. Butler Wilson [F.]; *Hon. Treasurer*, Mr. William H. Thorp [F.]; *Hon. Librarian*, Mr. W. H. Beever [A.]; *Hon. Secretary*, Mr. Francis W. Bedford [A.]; *Members of Council*, Messrs. W. S. Braithwaite, W. A. Hobson, G. Atkinson, A. A. France, C. B. Howdill [A.], A. E. Kirk [A.]; *Auditors*, Messrs. H. S. Chorley, M.A. [A.], and W. Pott [A.].

The Cardiff, South Wales, and Monmouthshire Society.

President and Hon. Treasurer, Mr. C. B. Fowler [F.]; *Hon. Secretary*, Mr. W. H. Dashwood Caple; *Hon. Auditor*, Mr. E. H. Bruton [F.].



COUVENT DU MARTYR THÉODOROS.

P. Hippolyte-Boussac del.

THÈBES : EXCURSION À LA VALLÉE-DES-REINES.

PAR P. HIPPOLYTE - BOUSSAC.

C'EST aux Memnonia, sur la rive gauche du Nil, dans les premiers contreforts des montagnes dorées de la Libye, que les anciens habitants de la ville de Thèbes déposaient les dépouilles de leurs morts. La vallée de Biban-el-Molouk et celle de l'Ouest, interminables contours aux aspects abrupts, écrasants de grandeur sauvage, limitent la partie la plus occidentale de cette nécropole et renferment les tombeaux des pharaons. Beaucoup moins vaste, mais non moins désolée, la vallée de Biban-el-Harim,* objet de cette étude, est également située dans la chaîne libyque, mais plus au sud-est. C'est là, qu'entourées de bandelettes et couvertes de riches talismans, reposaient les reines de l'Égypte.

I.

La brise du Nord qui, depuis le matin, souffle d'une façon constante, a fait succéder une température plus douce à la chaleur accablante de la veille. Immédiatement après le déjeuner, je monte sur un baudet que guide le petit Saïd, l'un des fils de mon hôte; mon serviteur Céléman † enfourche sa vieille ânesse, et nous nous mettons en route.

Le temps est si beau, l'air si pur, que nous faisons l'école buissonnière et déambulons du côté de Médinet-Abou, pour jouir de l'effet pittoresque produit par ses ruines qui se détachent

* Vallée du harem. C'est ainsi que les arabes nomment la Vallée-des-Reines.

† Soliman. (Les fellahs prononcent Céléman.)

[TRANSLATION]

It was in the Memnonia, on the left bank of the Nile, in the first spurs of the golden mountain of Libya, that the ancient inhabitants of the town of Thebes laid the remains of their dead. The valley of Biban-el-Molouk and that of the West, unending contours, ruggedly broken, overwhelming in their wild grandeur, form the westernmost boundary of this necropolis and contain the tombs of the Pharaohs. Far less extensive, but no less desolate, the valley of Biban-el-Harim, the subject of this study, is likewise situated in the Libyan chain, but more to the

Third Series, Vol. V. No. 17.—23 July 1898.

south-east. There, swathed in bandages and covered with rich talismans, lay the queens of Egypt.

I.

Owing to the northern breeze which, from the morning, had been blowing steadily, a milder temperature followed the oppressive heat of the day before. Immediately after breakfast I mounted the donkey led by little Saïd, the son of my host; my servant, Celeman, bestrode his old she-ass, and we started.

The weather was so fine, the air so pure, that we played the truant and wandered off towards Medinet-Abou, to

en capricieuses silhouettes sur le ciel bleu. Nous obliquons légèrement du côté de l'Occident et bientôt je vois apparaître, dans le lointain, une masse grise qui émerge des sables. Au bout d'un quart d'heure de marche, je me trouve en présence d'une construction de briques crues, basse et rectangulaire, dont la partie nord est surmontée de coupoles.

"Kenisset-el-Akbat" (église copte), me dit le petit Saïd. C'est le couvent du martyr Théodoros.

Je franchis le mur d'enceinte et pénètre dans une allée sur laquelle s'ouvre la porte de l'église, surmontée d'une croix byzantine. Là je vois le *gafir*,* que rejoint un autre individu, le *neocore* sans doute, homme de haute stature et parlant d'abondance. Accompagné de ces guides, j'entre dans l'église, qui n'a rien de bien remarquable.

Supportées par des piliers carrés, de nombreuses coupoles, ouvertes à leur partie supérieure, laissent entrer à flots l'air et la lumière. Une piscine, que remplit une eau croupissante, est p'acée à droite en entrant. C'est là que le jour de la fête de l'Épiphanie, à minuit, tous les fidèles viennent se plonger en mémoire du baptême de Jésus-Christ. À gauche, une balustrade de terre ajourée enlève un baptistère minuscule et isole du reste de l'église la partie réservée aux femmes. Dans le fond, quatre chapelles, dont l'une, celle qui fait face à l'entrée, est affectée au sanctuaire. Elles sont fermées par un iconostase, qui monte jusqu'à la naissance des voûtes et sur lequel on voit encore, en divers endroits, de vagues restes de peintures. Quatre pierres cubiques forment les autels.

Tout, ici, est d'aspect sordide et dans le plus grand dénuement; aucune décoration, pas la moindre enluminure. Souillées de crasse et de poussière, seules, deux icônes, l'une à l'intérieur et l'autre à l'extérieur du sanctuaire, font tache sur des murs dégradés. Point de vases sacrés sur les autels, ni riches chrismaux, ni fastueux candélabres. Le luminaire est

* Gardien.

enjoy the picturesque effect produced by the ruins which stand out in capricious outline against the blue sky. We inclined slightly towards the west, and soon, in the far distance, I saw a grey mass rising from the sand. After a quarter of an hour's journeying, I found myself in front of a low rectangular building in raw brick, whose northern portion was crowned with cupolas.

"Kenisset-el-Akbat" (a Coptic church), remarked Saïd. It was the convent of the martyr Theodoros. I passed the outer wall, and entered a pathway leading to the door of the church, which is surmounted by a Byzantine cross. There I saw the *gafir* or custodian, who soon was joined by another individual, apparently the *neocoros* or cleaner of the temple, a man of tall stature and copious speech. Accompanied by these guides I entered the church, which is in no way very remarkable.

Numerous cupolas, supported on square pillars and open on top, let in floods of air and light. A piscina filled with slimy water is placed on the right as you enter. It is in this that all the Faithful, at midnight on the Feast of the Epiphany, immerse themselves to commemorate the baptism of Jesus Christ. To the left an open-work barrier of earth shuts off a tiny baptistery and separates from the rest of the church the part reserved for women. At the end are four chapels, one of which, facing the entrance, is devoted to the sanctuary. They are closed by an iconostasis, which rises to the spring of the arches, and on which one sees in various places the indistinct remains of paintings. Four cubes of stone form the altars.

Everything here looks sordid and utterly bare; there is no decoration, not the slightest trace of colour. Only two icons, filthy with mud and dust, one inside and the other outside the sanctuary, break the monotony of the poverty-

stricken walls. There are no sacred vessels on the altars, no rich chrismaux, no sumptuous candelabra. The illumination is effected by an old-fashioned clay lamp from which thick black oil is constantly oozing drop by drop, and defacing with smoky streaks the rare paintings still visible on the iconostasis. A few mats thrown here and there upon the beaten earth, a lectern of metal, and two deal boxes containing the liturgical books constitute the whole furniture of this church lost in the sands of the desert. Not far from the women's gallery a door gives access to a kind of den lighted from the top; in a corner is a hearth for cooking food. On the opposite side is a very dark cell, so low that one cannot stand upright. A little straw is thrown on the bare ground; this is where the officiant sleeps.

Such simplicity arouses deep emotion, and the mind loves to call up the memory of monks like Pakhome, Schnoudi, Serapion, and so many other anchorites who, before the Mussulman invasion, peopled the Thebaid, and there retiring into one of the lauras subject to their authority, with emaciated faces and ascetic aspect, led a life of contemplation and absolute renunciation.

After having given backsheesh to each of my guides, I remounted my donkey, and, followed by my servants, ascended a hillock from which I hoped to get a view of the surrounding country. The hope was vain; a ravine hollowed by water separated this hillock from a neighbouring one, which in its turn was separated from a third; and so on to an infinite distance. Then I retraced my steps so as to strike the road leading to Biban-el-Harim.

The ground is very uneven, the soil literally strewn with stones of every shape and colour: spherical and ovoidal pebbles, petrified shells, countless splinters of flints, fragments of rock like volcanic scoria; all mingled

représenté par une lampe d'argile de forme antique, d'où s'épand, goutte à goutte, une huile noire et épaisse, maculant de traînées fuligineuses les rares peintures encore visibles sur l'iconostase. Quelques nattes jetées, çà et là, sur la terre battue, un lutrin de métal et deux coffres de bois blanc, renfermant les livres liturgiques, constituent tout l'ameublement de cette église perdue dans les sables du désert. Non loin de la tribune des femmes, une porte donne accès à un réduit éclairé par le haut ; dans un coin, l'âtre où l'on prépare les aliments. Du côté opposé, une cellule très obscure, et si basse qu'on ne peut s'y tenir debout. Un peu de paille est jetée sur le sol ; c'est là que couche le desservant.

Tant de simplicité cause une émotion profonde et l'esprit se plaît à évoquer le souvenir de



P. Hippolyte-Boussac del.

VALLÉE-DES-REINES.

moines tels que Pakhôme, Schnoudi, Sérapion, et de tant d'autres anachorètes qui, avant l'invasion musulmane, peuplaient la Thébaïde où, retirés dans l'une des laures soumises à leur obédience, le visage émacié, l'aspect ascétique, ils menaient une vie contemplative et d'absolu renoncement.

Après avoir donné un bakchich à chacun de mes guides, je regagne ma monture et, suivi de mes gens, je me dirige vers une éminence d'où j'espère dominer les alentours. Vain espoir ; un ravin creusé par les eaux sépare cette éminence du monticule voisin qui, à son tour, est séparé d'un troisième, et toujours ainsi à l'infini. Dès lors je reviens sur mes pas pour prendre le chemin qui conduit à Biban-el-Harim.

Le terrain est très inégal, le sol littéralement jonché de pierres de toutes les formes et de toutes les couleurs : des cailloux sphériques, d'autres ovoïdes, des coquilles pétrifiées, de nombreux silex brisés en morceaux, des fragments de roc semblables à des scories volcaniques ; le tout mêlé à un sable fin, poudre impalpable, amenée là par les vents du désert. Tenant à

me rendre compte de la formation de ce terrain et à recueillir des spécimens qui m'ont paru curieux, je veux descendre de mon baudet ; mais la selle, mal assujettie, cède sous mon poids et je tombe sur le flanc, au milieu d'un tas de pierres. On est obligé de me relever. Renonçant à pousser plus loin mes investigations géologiques, tout contusionné, je me remets en selle et, au bout de quelques minutes, nous arrivons à la Vallée-des-Reines.

II.

C'est un lieu fort sauvage et dont le sol est complètement bouleversé par les fouilles qui ont été pratiquées dans les tombeaux. Là-bas, sur ma gauche, j'aperçois une masse noire et blanche, semblable à un amoncellement de plumes d'aigles ou de vautours. Je m'informe ; "*Momies*," me répond le petit Saïd.

À droite, sur un rocher à pic, se dressent des murailles en ruines, derniers vestiges de quelque monastère copte. Une énorme fente, produite par l'écartement de deux rochers, limite la partie méridionale de la vallée et fait songer à l'entrée du Ténare, tant l'effet est bizarre et fantastique. Nous mettons pied à terre et Celeman me conduit vers le monument le plus beau de cet asile de la mort. Sur le sentier git un crâne plus blanc que l'ivoire, il est très fin et d'une délicatesse extrême ; c'est bien là une tête de femme. N'étaient les cavités des yeux et du nez, quelques restes de bandelettes adhérant encore au frontal, on le prendrait plutôt pour un œuf d'autruche. Encore quelques pas, et nous pénétrons dans le tombeau de la reine Titi, princesse Ramesside. Ce tombeau est orienté au nord et creusé dans le roc. Un couloir long et étroit aboutit à une grande salle centrale, autour de laquelle viennent s'ouvrir trois chambres de dimensions exigües ; arrangement qui donne au plan la forme d'une croix latine.

with fine sand, an impalpable powder brought thither by the winds of the desert. Anxious to investigate the formation of this ground and to collect some specimens that seemed curious, I tried to dismount from my donkey ; but the saddle, badly fixed, gave under my weight, and I fell upon my side in the middle of a heap of stones. I had to be picked up. Renouncing any further pursuit of my geological investigations, I remounted, all over bruises, and after a few minutes we arrived at the Valley of the Queens.

II.

It is a wild spot, and the soil is all upheaved by the excavations that have been made among the tombs. Down on the left I caught sight of a black and white mass like a heap of eagles' or vultures' feathers. I asked what it was. "*Mummies*," said little Saïd.

To the right on a sheer rock rise some ruined walls, the last traces of some Coptic monastery. An enormous chasm produced by the cleavage of two rocks bounds the southern portion of the valley, and reminds one of the entrance to Hades, so strange and fantastic is the effect. We dismounted, and Celeman took me to the most beautiful monument in this home of death. On the path lies a skull whiter than ivory, of exceeding delicacy ; a woman's head. Were it not for the cavities of the eyes and nose, and for some remains of bandages still clinging to the frontal bone, one might mistake it for an ostrich egg. A few steps further and we were in the tomb of Queen Titi, a Ramesside Princess. This tomb is pointed to the north, and is hollowed in the rock. A long narrow passage leads to a great central hall on to which open three chambers of very small dimensions—an arrangement which gives the plan the form of a Latin cross.

While I was examining the locality, little Saïd suddenly turned round and bolted away with a yell. The two

donkeys, left alone and unsecured, had wandered off. Soon Celeman followed Saïd, having previously deposited his slippers at the gate of the tomb for the sake of greater speed. So I was left by myself at nightfall, in a vast sepulchre, in the midst of a wild valley, where everything was filled with the suggestion of death. An indefinable feeling crept over me ; the flickering light of my candle seemed to throw funereal gleams ; I saw . . . But it all passed away in a flash, and lasted for less time than it takes to describe it ; my confusion soon disappeared, and I was able to give my keen attention to the various objects that met my eye. Some were terrible, others filled with charm.

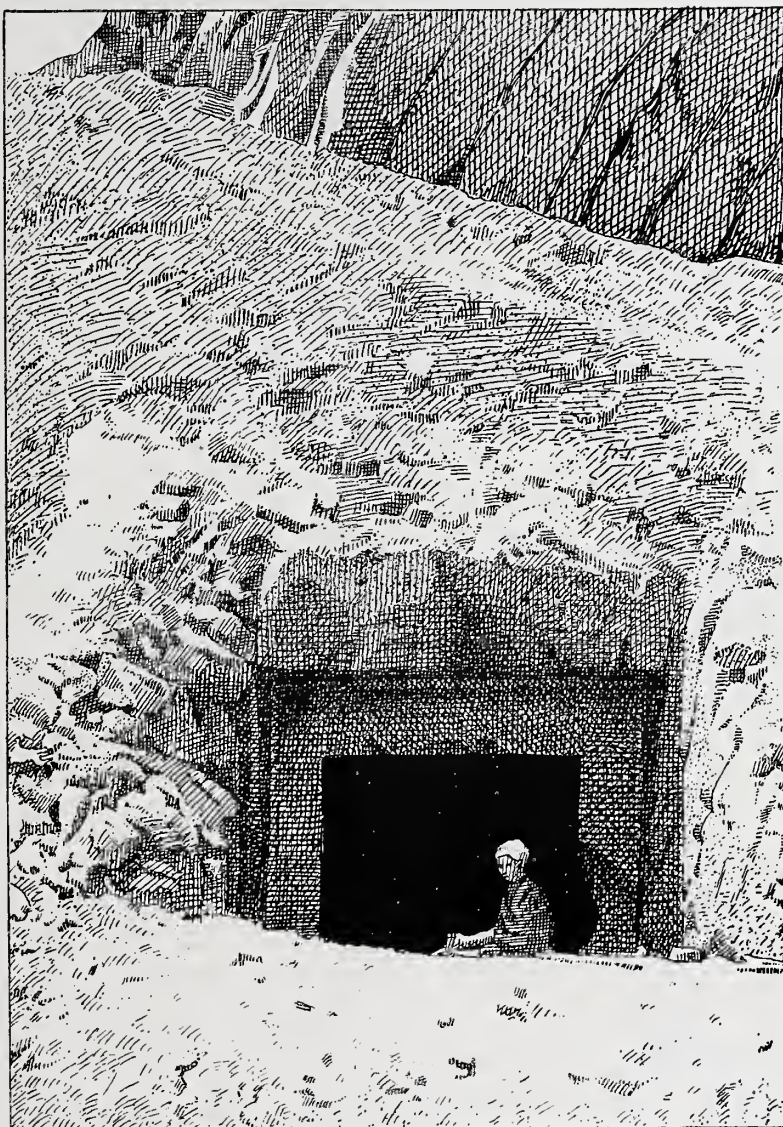
Kneeling down, with arms and wings extended, Truth is sculptured on the two walls of the passage, and seems to be trying to forbid access to the sepulchre. Then, on opposite sides, come three compositions with life-size figures. These pictures show us the queen in the presence of gods and genii. In the first, to the left, the deceased lady is in adoration before Ptha, the supreme god of Memphis, standing in his naos or temple and swathed in bandages ; to the right, crowned with flowers, she is in the presence of Thoth, who is armed with the symbol of life and government. Still elegantly clad, the queen in the second composition is waving two golden sistra ; to the right, before the god Toum, wearing the double crown ; and to the left, before Hor-Khouthi, the emblem of the course of the sun through space from the eastern to the western horizon of the sky. Finally, the last picture shows us Queen Titi, on the one side in the presence of the genii Amsset and Tiaoumoutef, accompanied by Isis ; and on the other in the presence of Hapi and Kebennouf, behind whom stands the goddess Nephtys.

The lintel of the door leading from the passage to the great hall is ornamented with a magnificent winged disc, flanked with uræi ; and on the splays are carved two

Pendant que j'étais en train d'examiner ces lieux, le petit Saïd se retourne tout à coup, pousse un cri et disparaît en courant. Ce sont les deux baudets qui, laissés seuls et libres de toute entrave, ont pris la clé des champs. Céleman court bientôt après le petit Saïd, non sans avoir préalablement déposé, pour aller plus vite, ses babouches à la porte du tombeau; et me voilà seul, à la nuit tombante, dans un vaste sépulcre, au milieu d'une vallée sauvage où tout présente l'image de la mort. Quelque chose d'indéfinissable s'empare de mon être, la flamme vacillante de ma bougie me paraît jeter des lueurs funéraires, je vois . . . Mais tout cela passe comme un éclair et dure moins de temps qu'il n'en faut pour le décrire, mon trouble a bientôt disparu, et je puis dès lors considérer attentivement les différents sujets qui s'offrent à mes yeux. Les uns sont terribles, les autres pleins de grâce.

Agenouillée, les bras et les ailes étendus, la Vérité* est sculptée sur les deux parois du couloir et semble vouloir inter-

dire l'accès du sépulcre. A sa suite, se faisant pendant, viennent trois compositions, aux personnages grandeur nature. Ces tableaux nous montrent la reine en présence de dieux et de génies. Dans le premier sujet à gauche, la défunte est en adoration devant Ptha,† le dieu suprême de Memphis, debout dans son naos et enveloppé de bandelettes; à droite, couronnée de fleurs, elle est en présence de Thoth,‡ armé du signe de la vie et du commandement. Toujours mise avec élégance, dans la seconde composition, la reine agite deux sistres d'or; à droite, devant le dieu Toum,§ coiffé de la double couronne, et à gauche, devant Hor-Khouti,



P. Hippolyte-Boussac del.

ENTRÉE DU TOMBEAU DE LA REINE TITI.

* Les Egyptiens la nommaient Maa. Elle est ordinairement représentée par une femme, aux bras de laquelle des ailes sont adhérentes, et dont la tête est surmontée d'une plume d'autruche.

† Dieu primordial, créateur du monde.

‡ Les Grecs l'ont identifié avec Hermès.

§ Emblème du soleil couchant.

emblème de la course du soleil à travers l'infini, de l'horizon oriental à l'horizon occidental du ciel. Enfin, le dernier tableau nous montre la reine Titi, d'un côté, en présence des génies Amset et Tiaoumouf, accompagnés d'Isis; et, de l'autre, devant Hapi et Kebsemmouf, derrière lesquels se tient debout la déesse Nephtys.

Le linteau de la porte qui, du couloir, donne accès à la grande salle, est orné d'un magnifique disque ailé, flanqué d'uraeus; et sur les ébrasements sont sculptées deux déesses, gardiennes de la momie: à droite, Selk, la tête surmontée d'un scorpion; à gauche, la déesse Neith. Les chairs de ces divinités sont peintes de couleur verdâtre.

Tout ce que l'imagination peut inventer de plus fantaisiste, tout ce qu'un visionnaire peut voir de plus extraordinaire, se trouve réuni dans la grande salle: femmes richement parées, barques mystiques, emblèmes solaires, monstres apocalyptiques. . . . Ces divers éléments qui, en apparence, semblent étrangers l'un à l'autre, et qui sont si étroitement liés dans le symbolisme égyptien, se détachent sur un fond jaune d'or et produisent un effet saisissant. Aussi est-elle très intéressante et suggestive, cette grande salle. Haute de plafond, chacune de ses parois est percée d'une porte au dessus de laquelle on voit, ici un épervier aux ailes éployées, là, deux uræus ailés se regardant face à face.

Sur la paroi du fond, deux barques mystiques voguent sur l'océan céleste; elles portent l'une et l'autre un coffret à *uchebtis*,* de chaque côté duquel brillent les yeux d'Horus, et à leur avant flotte un tapis de pourpre frangé d'or. Dans le registre inférieur nous voyons la reine, superbement vêtue, le chef surmonté d'un disque incandescent et dominé par les plumes de Vérité qui s'élancent directes. Autour des baguettes d'or que tiennent ses deux mains s'enroulent deux plantes symboliques, le papyrus et le lotus, emblèmes de la région du Nord et de la région du Sud, qu'elle présente à deux génies placés devant elle. A gauche de la porte, sur la paroi sénestre, sont représentés trois cynocéphales: l'un, tout petit, est debout, et tient entre les mains un arc destiné, sans doute, à l'anéantissement des ennemis de Ra; † les deux autres, beaucoup plus gros, sont assis et poussent des acclamations en l'honneur du soleil levant. Ce sujet est motivé par ce fait que les Egyptiens connaissaient

* Statuettes funéraires.

† Manifestation populaire et concrète du soleil.

goddesses, the guardians of the mummy: to the right, Selk, with a scorpion on her head; to the left, the goddess Neith. The flesh of these deities is painted a greenish hue.

Every fantastic image that the imagination can conceive, every extraordinary dream that can haunt the visionary, is to be found in the great hall—women richly adorned, mystic boats, solar emblems, apocalyptic monsters. These various elements, which at first sight seem quite foreign to each other, and yet are so closely bound up together in Egyptian symbolism, stand out on a golden yellow background and produce a startling effect. So this great hall is very interesting and suggestive. Its roof is high, and each of its walls contains a doorway, above which is seen, here a hawk with extended wings, there two winged uræi looking at one another.

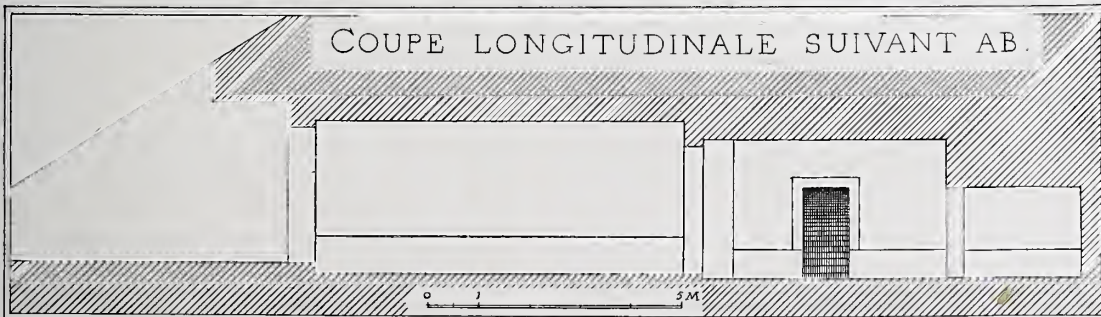
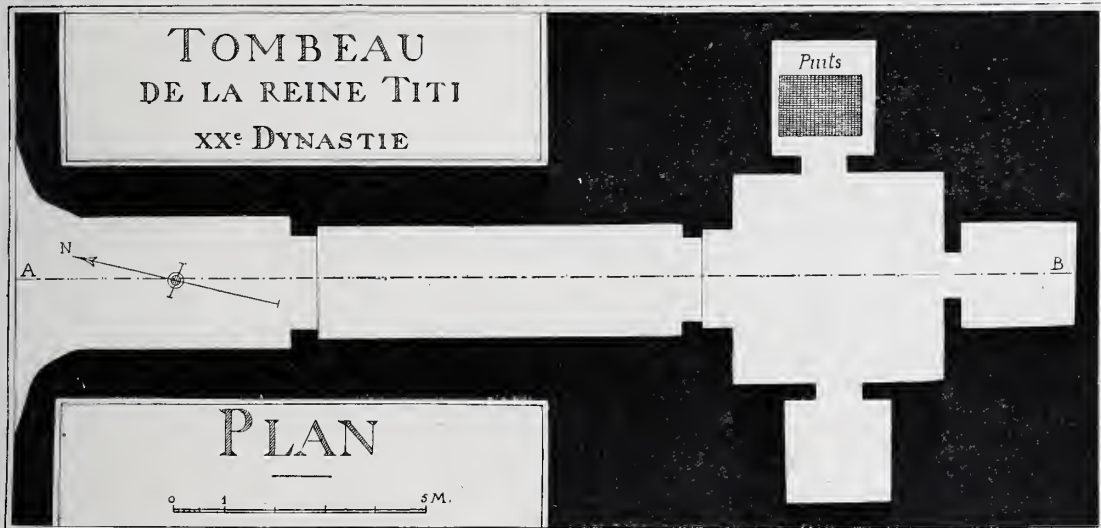
On the back wall two mystic boats sail over the heavenly sea; both carry a chest for *uchebtis*, on each side of which shine the eyes of Horus, and at their prow waves a purple cloth fringed with gold. In the lower panel we see the queen superbly attired, above her head an incandescent disc topped by the plumes of Truth, which spring straight up. Around the gilt wands that she holds in both her hands are twined two symbolic plants, the papyrus and the lotus, emblems of the regions of the North and South; and these she offers to two genii placed in front of her. To the left of the door on the left wall are represented three cynocephali; one, quite small, is standing, and holds in his hands a bow with which, doubtless, he is to destroy

the enemies of Ra; the two others, much larger, are sitting and uttering acclamations in honour of the rising sun. The motive of this subject lies in the fact that the Egyptians knew of a species of monkey which every morning begins to chatter as soon as the first rays of the sun appear above the horizon. This peculiarity gave rise to the fancy that these animals adored the sun on its rising. Hence the solar significance of the cynocephalus in Egyptian symbolism. A great vulture occupies the right side of the door; it is followed by two genii armed with enormous knives and squatting one behind the other. The first has the head of a hippopotamus; the second is human. The shaven head whence protrude two great ears, the upper part of the body shown full, the legs in profile, give to this figure something strange, abnormal, an expression of unutterable cruelty and ferocity, enhanced by the two sharp knives that he wields in his hands, and by the blood colour of his flesh. A real Satan, he has the sinister aspect of the Evil One. The series is continued on the opposite wall, where, still in the same attitude and equipped with their gleaming steel knives, they have: one, the head of an ibis; another that of a jackal; a third that of a hawk. An inscription informs us of the quality of these dreadful monsters. They are the gods of Tiaou. Powers of hell, pitiless ghouls, vampires athirst for blood, they torture unceasingly with their sharp-edged swords the souls of the wicked, and feast on their quivering entrails.

The description of the two walls next to the entrance-

une variété de singes qui, tous les matins, se mettaient à jacasser dès qu'apparaissaient à l'horizon les premiers rayons du soleil. Cette particularité leur fit supposer que ces animaux adoraient cet astre à son lever. De là, le rôle solaire du cynocéphale dans le symbolisme égyptien.

Un grand vautour occupe le côté droit de la porte; il est suivi de deux génies armés d'énormes coutelas et assis à la suite l'un de l'autre. Le premier a une tête d'hippopotame. Le second est une figure humaine. La tête rasée, d'où émergent deux grandes oreilles, le



P. Hippolyte-Boussac architecte del.

haut du corps vu de face, les jambes de profil, donnent à cette silhouette quelque chose d'hétéroclite, d'étrange, une physionomie qui exprime je ne sais quoi de farouche et de cruel, encore accru par les deux lames aiguës qu'il brandit dans ses mains et la couleur sanglante de ses chairs. Véritable Satan, il est d'aspect sinistre. La série se continue sur la paroi opposée où, toujours dans la même attitude et pourvus de leurs armes à reflets métalliques, ils ont: l'un une tête d'ibis; l'autre une tête de chacal; le troisième une tête d'épervier. Une inscription nous apprend quelle est la qualité de ces monstres redoutables. Horreur! ce sont les dieux du Tiaou.* Puissances de l'enfer, goules impitoyables, vampires altérés de sang, de leurs glaives acérés ils torturent, sans relâche, les âmes des impies et se repaissent de leurs entrailles palpitantes.

La description des deux parois qui avoisinent la porte d'entrée complétera l'examen de cette salle. A gauche, la reine, assise sur un riche coussin, est précédée d'un génie à face léonine qui, debout devant elle, est armé d'un fer étincelant. Du côté opposé, fier d'allure et

* Nom de l'une des régions de l'enfer égyptien.

plein de souplesse, un chacal est accroupi sur un piédestal ; c'est le guide des chemins célestes. Aussi blanc que le jade avec son air de lévrier, prêt à bondir dans les taillis touffus, il semble plutôt un emblème de joie et de délivrance que celui de la tristesse et du deuil. Au dessous, calme et plein de grandeur, repose le lion symbolique. Il est l'emblème de la force vivifiante de la lumière du soleil qui, dans tout l'univers, répand son harmonie.

Le même principe de décoration a été appliqué dans les trois petites salles qui entourent la grande. Ainsi que dans les autres parties du monument, on sent la même préoccupation d'un arrangement symétrique, quelle que soit la disposition employée. Les deux parois latérales de la salle du fond sont divisées chacune en deux registres superposés, dans lesquels ont été représentés des génies funéraires, assis devant des tables chargées d'offrandes.

Une seule composition s'étend sur toute la paroi qui fait face à l'entrée. Elle nous montre, suivie de la déesse Selk et coiffée de la couronne rouge, la défunte en adoration devant Osiris, seigneur de l'Amenti,* derrière lequel se tiennent, droites et protectrices, les déesses Isis et Nephtys, accompagnées du dieu Thoth, le scribe divin des divines Ecritures. Les deux côtés de la porte d'entrée sont occupés par l'effigie de la reine, représentée encore debout, les bras levés, adorante.

La salle de gauche est dans un assez mauvais état. Le mur du fond en a été entièrement martelé. Sur les parois latérales, qui seules ont conservé leur décoration, nous voyons la reine, d'un côté, agitant des sistres devant les génies † gardiens des canopes, et, de l'autre, adorant quatre personnages dont aucune légende n'indique le nom. C'est ici qu'on a creusé le puits, aujourd'hui comblé, qui autrefois conduisait à la salle du sarcophage où, dans un

* Amenti, séjour des âmes des justes après le jugement d'Osiris, l'un des noms de l'enfer égyptien.

† Ces génies, au nombre de quatre, sont : Anset, Hapi, Tiaoumoutef, Kebsemonf. Le premier, représenté avec une

tête humaine ; le deuxième avec une tête de cynocéphale ; le troisième avec une tête de chacal, et le dernier, avec une tête d'épervier.

door will complete the examination of this hall. To the left, the queen, sitting on a rich cushion, is confronted with a genie of leonine aspect, who, upright before her, is armed with a glittering sword. On the opposite side, proud of bearing and full of supple grace, a jackal is crouching on a pedestal ; he is the guide along the roads of heaven. As white as jade, looking like a greyhound ready to leap into tangled thickets, he seems rather an emblem of joy and deliverance than of sadness and mourning. Below, calm and grand, lies the symbolical lion. He is the emblem of the life-giving force of the sun's light, which spreads its harmony throughout the universe. The same principle of decoration has been applied to the three little chambers which surround the great hall. Just as in the other parts of the monument, one feels the same striving after a symmetrical arrangement whatever may be the scheme employed. The two lateral walls of the hall are each divided into two superimposed panels, in which have been represented the Genii of Death sitting at tables laden with offerings.

One single composition extends over the whole wall facing the entrance. It shows us the deceased followed by the goddess Selk, and wearing the red crown, in adoration before Osiris, the lord of Amenti, behind whom, erect and protecting, stand the goddesses Isis and Nephtys, accompanied by the god Thoth, the divine scribe of the divine writings. The two sides by the entrance-door are occupied by a representation of the queen, again standing, with arms uplifted in adoration.

The chamber to the left is in a somewhat wretched state. The back wall has been entirely knocked to pieces. On the side walls, which alone have preserved their decoration, we see the queen on the one side waving sistra before the genii who guard the canopies, and on the other adoring four personages whose name is indicated by no inscription. It is here that the well, now filled up, was dug which once led to the chamber with the sarcophagus

where the royal mummy, laden with amulets, reposed in a richly ornamented coffin, her face covered with a golden mask.

A similar scheme has been adopted for the decoration of the chamber opposite the foregoing. On both sides there are gods and genii with heads of dogs, jackals, hawks, ibises, and serpents, figures that have been reproduced several times already ; while on the back wall, which has remained almost intact, the artist, in a magnificent composition covering the whole surface, has represented one of the most interesting subjects in Egyptian symbolism. On the left one sees the Mountain of the West, whence issues the cow Hathor, richly caparisoned, her neck encircled by a golden collar, and her head surmounted by the disc of fire, resplendent with the plumes of Truth and Light. The scene of Nouit in the sycamore is depicted on the right.

III.

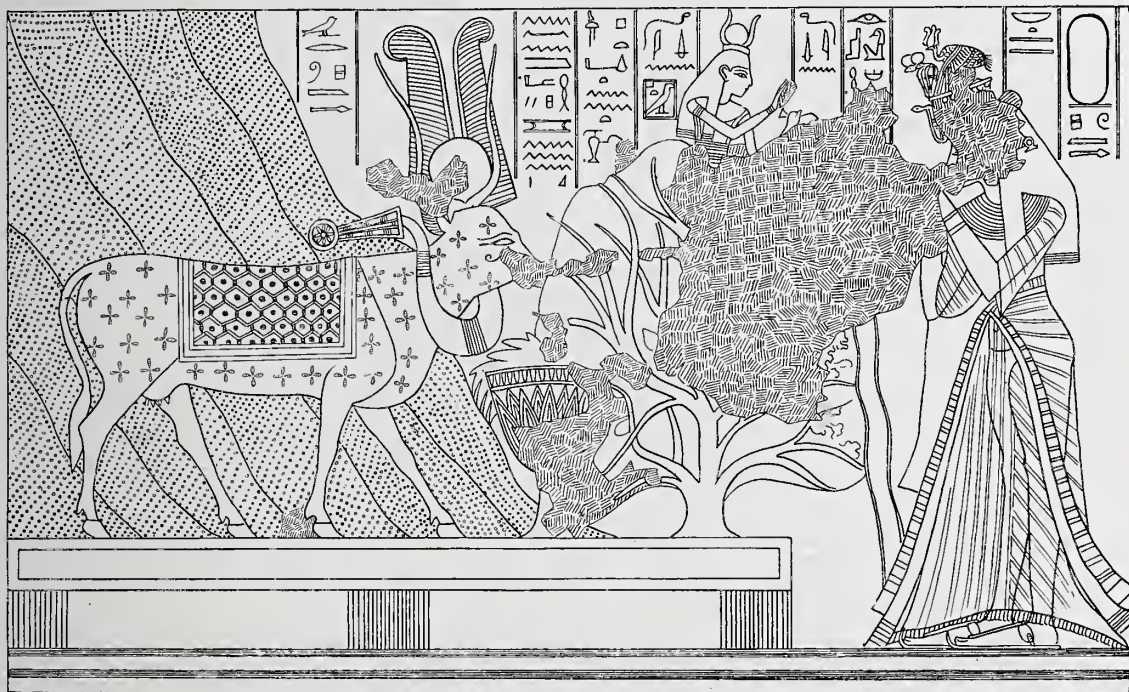
Of all the beliefs of ancient Egypt, the following was the most widespread :—

When the souls left the bodies which they had animated during life, the deceased journeyed towards the other world. Numerous trials awaited them on the road they had to traverse ; there were enchantments whose spells had to be broken ; genii to be avoided ; serpents and other monsters to be combated. Hence this quantity of talismans with which their mummies were loaded, to protect them against the snares that were set for them. Harassed, tortured by hunger and thirst as they were, the first thing that met their eyes in the vastness of the desert was a great sycamore, in which, sometimes under the form of Isis, sometimes under that of Hathor, Nouit, the goddess of heaven, holding a ewer in one hand and a basket filled with loaves in the other, invited them to eat and drink.

So long as they had not touched the immortal food,

cercueil richement décoré, reposait la momie royale, chargée d'amulettes, le visage couvert d'un masque d'or.

On a adopté un parti semblable pour la décoration de la salle opposée à celle qui précède. Les deux côtés, ce sont des dieux et des génies à tête de chien, de chacal, d'épervier, d'ibis et de serpent, images déjà plusieurs fois reproduites ; tandis que sur le mur du fond, resté à peu près intact, l'artiste a, dans une magnifique composition qui couvre toute la surface, représenté l'un des sujets les plus intéressants du symbolisme égyptien. On y voit : à gauche, la montagne de l'Occident d'où la vache Hathor sort, richement parée, le cou entouré d'un



LA VACHE HATHOR ET LA DAME AU SYCOMORE.

collier d'or, et la tête, surmontée du disque de feu, prominé des plumes de Vérité et de Lumière. La scène de Nouït, dans le sycomore, se développe sur le côté droit.

III.

De toutes les croyances de l'antique Egypte, celle-ci était la plus répandue :

Lorsque les âmes quittaient les corps qu'elles avaient animés durant la vie, les défunts s'acheminaient vers l'autre monde. De nombreuses épreuves les attendaient sur la route qu'ils avaient à parcourir ; c'étaient des enchantements dont il fallait rompre le charme, des génies à éviter, des serpents et autres monstres à combattre. De là, cette quantité d'amulettes dont on chargeait leurs momies, pour les protéger contre les embûches dont ils étaient l'objet. Harassés, tourmentés par la soif et la faim, la première chose qui apparaissait à leurs regards, dans l'immensité du désert, était un grand sycomore, dans lequel, tantôt sous la forme d'Isis, tantôt sous celle d'Hathor, la déesse du ciel, Nouït, tenant d'une main une aiguière et, de l'autre, une corbeille remplie de pains, les conviait à boire et à manger.

Tant qu'ils n'avaient point touché à la nourriture immortelle, ils auraient pu, si telle avait été la volonté des dieux tout-puissants, reprendre leur première forme et revenir sur terre pour y continuer la même existence qu'avant leur trépas. Mais, dès qu'ils avaient pris

part aux funestes agapes, ils devenaient les serviteurs des dieux et se fermaient sans retour les félicités terrestres. Si d'aventure ils réapparaissaient dans le monde des vivants, c'était à l'état de doubles et invisibles, ne se nourrissant alors que de l'image des offrandes reproduites sur les parois de leurs tombeaux. Cette scène de Nouït, dans le sycamore, est l'une des plus gracieuses et des plus fréquemment reproduites du symbolisme égyptien ; elle a des variantes infinies ; quelques-unes sont exquises et il s'en dégage une poésie douce et mélancolique.

Tantôt droite et dans une immobilité hiératique, la déesse repose sur le tronc de l'arbre sacré. Tantôt sa partie inférieure se confond avec l'arbre lui-même, et le haut de son corps seulement, émergeant des branches vertes, s'incline avec grâce vers les défunts. Souvent, ceux-ci, debout, assis ou à genoux, tendent leurs mains vers elle pour se nourrir des pains mystiques qui remplissent sa corbeille, ou absorber l'eau céleste, qu'à travers le pâle feuillage, déverse son aiguière d'or.

Souvent encore aucun bruit ne vient troubler le mystérieux silence de cette scène symbolique ; mais fréquemment aussi, l'artiste s'est plu à y introduire, dans un pittoresque désordre, des êtres qui l'égayent et l'animent. Ici, des abeilles butinent les fleurs de l'arbre divin ; là, d'énormes sauterelles grimpent sur les branches et en rongent les feuilles, tandis qu'un peu partout des oiseaux et de nombreux papillons voltigent en tous sens.

Cette fois, le sculpteur égyptien nous montre Nouït sous la forme d'Hathor et, revêtue de ses plus beaux atours, la défunte debout devant le sycamore. Elle est rayonnante de grâce et de splendeur cette charmante reine. Délicatement posé sur sa tête, étincelle un diadème d'or. Blanche comme l'aube naissante, d'une transparence extrême, sa tunique de byssus laisse voir ses formes juvéniles ; et, le long de son corps, descend, onduleuse, une ceinture aux couleurs éclatantes. Les deux mains tendues vers la fatale aiguière, elle veut absorber le breuvage funeste qui, à tout jamais, lui ravira ce qui fit son bonheur sur cette terre. Jamais plus elle ne

they might resume their original form and return to earth to continue the same existence as before their death, if such were the will of the all-powerful gods. But as soon as they had eaten of the Death-Feast they became the servants of the gods, and shut themselves off for ever from earthly happiness. If by chance they reappeared in the world of the living, it was as "doubles," or in a state of invisibility, and then they only fed on the counterfeit presentation of the offerings painted on the walls of their tombs. This scene of Nouit in the sycamore is one of the most graceful and most frequently reproduced in all Egyptian symbolism ; it has infinite variants, some of which are exquisite, breathing sweet and melancholy poetry.

Sometimes upright, in hieratic immobility, the goddess rests against the trunk of the sacred tree. Sometimes the lower portion of her body is merged into the tree itself, and only the upper portion issuing from the green branches bends gracefully towards the dead. Often the latter, standing or kneeling, stretch out their hands towards her, to eat of the mystic loaves which fill her basket, or to drink the celestial water poured from her golden ewer through the pale foliage.

Often, again, no noise disturbs the mysterious silence of this symbolic scene ; but often, on the other hand, the artist has introduced animated beings, in picturesque confusion, to brighten and enliven it. Here bees plunder the flowers of the sacred tree ; there huge grasshoppers climb on the branches and gnaw the leaves, while birds and countless butterflies flit and hover everywhere.

In this case the Egyptian sculptor shows us Nouit under the form of Hathor, and the deceased, clad in her most fair and sumptuous robes, standing in front of the sycamore. The sweet queen is radiant with grace and splendour. Daintily laid upon her head sparkles a golden diadem. White as the earliest dawn, diaphanous,

her tunic of byssus reveals her youthful form ; and a girdle of dazzling colours winds down her body. With hands outstretched towards the fatal ewer, she yearns for the deadly drink that will rob her for ever of that which was her happiness on earth. Never more shall she behold the solemn ceremony of the Grand Panegyrics of Ammon, no longer shall the strain of harps charm her dainty ears, the perfumes of Ta-Neter shall never again woo her delicate senses, the honey-cakes no more shall delight her mouth, and her slender fingers no more shall caress her favourite gazelle. Never again, O Queen, shalt thou wave the sistra before the boat of Hathor issuing from the sanctuary. Farewell beauty, farewell love, sources of unquenchable delights ! No heart shall ever beat again in unison with thine, no more shalt thou yield to the clasp of the lover led captive by thy charms ! Farewell the burning kisses that thy passionate lips so oft have tasted ! No longer shalt thou be the beauteous idol of the Triumphal Entries, when a people, mad with joy, acclaimed thee as thou didst pass by, crying wonder at thy beauty and exalting thy greatness ! Vain shadow of splendours for ever passed away ; in the Kher-Neter, in the Fields of Ialou, lost among a people of Manes and Lemures, shalt thou lead henceforward, without joy, without happiness, thy life beyond the tomb ! There, after taking in turns the forms of the swift swallow and of the golden hawk, of a living soul and of a lotus in flower for endless ages, shalt thou harvest the sheaves of the gods in the fields of the other world. . . .

Although belonging to a period of decadence, all these sculptures are of a fairly good style, and do not extend beyond the first years of the Twentieth Dynasty. They are relieved by brilliant colouring in which the light tone is especially dominant. Each object is painted in the colour suited to it, and in the case of the queen, the conventional yellow, which was habitually used for the forms of women,



reverra l'imposante mise en scène des Grandes-Panéguries d'Ammon, les harmonies des harpes ne charmeront plus ses oreilles délicates, les parfums du Ta-Neter* ne flatteront plus son odorat subtil, les gâteaux de miel ne feront plus les délices de sa bouche et, de ses doigts effilés, jamais plus elle ne caressera sa gazelle favorite. Jamais plus, ô reine! tu n'agiteras les sistres en cadence devant la barque d'Hathor sortant du sanctuaire. Adieu, beauté! adieu, amour! source d'interminables voluptés! Plus de cœur battant à l'unisson du tien, plus de doux abandons dans les bras de l'amant que captivaient tes charmes! Adieu, baisers brûlants qu'ont savourés tant de fois tes lèvres sensuelles! Tu ne seras plus l'idole bellissima des Entrées-Triumphales où un peuple en délire t'acclamait au passage, admirant tes attraits, exaltant ta grandeur! Ombre vaine de splendeurs à jamais disparues, c'est dans le Kher-Neter,† dans les Champs-d'Ialou‡ que, perdue parmi tout un peuple de mânes et de lémures, tu vivras désormais, sans joie et sans bonheur, ton existence d'outre-tombe! C'est là qu'après avoir, tour à tour, pris la forme de l'hirondelle agile et de l'épervier d'or, d'une âme vivante et d'un lotus en fleur, durant des siècles infinis, tu moissonneras les gerbes divines dans les champs de l'autre monde. . . §

Quoique appartenant à une époque de décadence, toutes ces sculptures sont d'assez bon style, et ne descendent pas au delà des premières années de la XX^e dynastie.¶ Elles sont rehaussées par un brillant coloris où la gamme claire est surtout dominante. Chaque sujet est peint avec la couleur qui lui est propre et, pour la figure de la reine, le jaune conventionnel, qui servait habituellement à peindre les figures de femmes, a été remplacé par la teinte de chair, dans la coloration des nus. Une frise d'une grande richesse règne dans le haut de chaque paroi, et autour du soubassement vient courir une grecque aux couleurs variées. A l'exclusion de la grande salle, où les sculptures se détachent sur un fond jaune d'or, partout ailleurs elles s'enlèvent sur un fond blanc. La voûte, à fond jaune, est constellée d'étoiles

* Ta-Neter, terre divine; l'Arabie-Heureuse.

† L'une des régions du monde inférieur.

‡ D'où les Grecs ont tiré leurs champs-élyséens.

§ Croyances des anciens Egyptiens.

¶ Vers 1290 avant Jésus-Christ.

has been replaced by flesh colours in all the nude tints. A frieze of great richness runs along the top of each wall, and around the foot a Greek fret of varied colouring. Everywhere, except in the great hall, where the background is a golden-yellow, the sculptures stand out against a white background. The ceiling is yellow, studded with white stars. All these colours, which originally were bright and crude, perhaps discordant, now are softened by the hand of ages and produce a finely decorative effect in which everything is harmonious.

The pale note that predominates in this monument gives it the aspect rather of a boudoir than of a tomb, and there is something pleasing in the thought that it has received the remains of a woman as young and as beautiful as Nitocris, Arsinoë, and Cleopatra. The feelings awakened by the sight of this sepulchre are neither gloomy nor painful; but a vague melancholy spreads over one's soul, brings us back to the instability of earthly things, and shows us the emptiness of human passions, of our unceasing efforts, of our intestine quarrels over the acquiring of these ephemeral blessings: wealth, glory, honour—vain shows, elusive phantoms which, like the clouds at the breath of the wind, vanish before that terrible and implacable power which we call Death. . . .

Meanwhile footsteps are heard in the valley, and soon I see Celeman, closely followed by little Saïd, holding the two asses by the bridles. One last glance and I go away, almost reluctantly, to visit the tomb of Queen Isis, which is not far off.

IV.

Our road lay across the site of an old Coptic village. Everywhere the ground was hidden beneath the remains

of old pottery. Just like the preceding tomb, this one is set to the north. A slight slope leads to the principal hall, on to which open two smaller chambers of different sizes, one to the right as you enter, and the other at the back. This tomb belonging to the queen with a goddess's name is very dismal and in a deplorable condition, and if elsewhere everything gave rise to thoughts of grace and of youth, here the imagination would readily be haunted by the name of Jezebel.

In the first chamber a part of the roof and one of the two pillars supporting it have fallen down. Everywhere the ground is strewn with their fragments mingled with human bones. On the right and left walls a pedestal supports a great black jackal, before and behind which are leaning Isis and Nephthys, the divine sisters, with arms uplifted to heaven. A naos covers this scene, and at each of its extremities, in front of an altar laden with abundant offerings, Queen Isis stands in adoration. Only three of the faces of the pillar that remains standing are still intact. Two are occupied by representations of Truth and the goddess Hathor; the third by that of Anubis, the god of burial. He has a jackal's head, and he holds the palm branch carried in the funeral procession by the friends and relations of the deceased, clad in white robes.

The further chamber, with its basket-handle roof, is decorated with great richness. The segment formed by the roof and the frieze going round each wall is adorned with a magnificent figure of Truth, kneeling, with outspread wings. As to the decoration of the walls, it is always the same symbolical subjects, cynocephali, genii of the dead, &c.

The lateral chamber situated to the right of the first is

blanches. Tous ces tons qui, à l'origine, étaient vifs et criards, discordants peut-être, assourdis aujourd'hui par le travail des siècles, produisent un bel effet décoratif où tout concorde et s'harmonise.

La note pâle, qui prédomine dans ce monument, lui donne plutôt l'aspect d'un boudoir que d'une tombe, et l'esprit se complait dans la pensée qu'il a dû recevoir la dépouille d'une femme jeune et belle, comme le furent Nitocris, Arsinoé et Cléopâtre. Les idées ne sont ni sombres ni douloureuses, qu'évoque la vue de ce sépulcre; mais une vague mélancolie s'empare de notre âme, nous ramène à la fragilité des choses d'ici-bas et nous montre l'inanité des passions humaines, de nos efforts constants, de nos discordes intestines pour acquérir tous ces biens

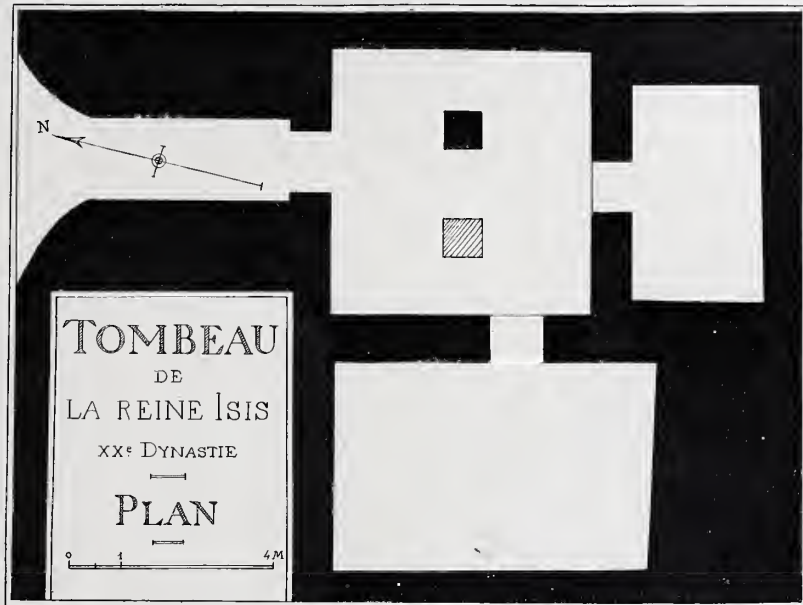
éphémères : richesses, gloire, honneurs, trompeuses images, fantômes insaisissables qui, telles les nuées au souffle de l'aquilon, s'évanouissent devant cette puissance implacable et terrible qu'on nomme le Néant. . . .

Cependant un bruit de pas a retenti dans la vallée et bientôt j'aperçois Céléman, suivi de près par le petit Saïd, qui tient en laisse les deux aliborons. Encore un dernier regard, et je sors presque à regret pour aller, non loin de là, visiter le tombeau de la reine Isis.

IV.

Nous cheminons sur l'emplacement d'un ancien village copte. Partout le sol disparaît sous les débris de vieilles poteries. De même que le sépulcre précédent, celui-ci est orienté au nord. Une légère pente conduit à la salle principale qu'avoisinent deux chambres de grandeurs différentes, l'une à droite en entrant, et l'autre dans le fond. Il est bien lugubre et dans un état déplorable, ce tombeau de reine à nom de déesse, et si ailleurs tout fait naître des idées de grâce et de jeunesse, ici l'imagination serait volontiers hantée par le nom de Jézabel.

Dans la première salle, une partie de la voûte et l'un des deux piliers qui la supportent sont effondrés. De toutes parts, leurs fragments jonchent le sol, mêlés à des ossements humains. Sur les parois de droite et de gauche, un piédestal supporte un grand chacal noir, à l'avant et à l'arrière duquel sont penchées, les bras levés au ciel, Isis et Neptys, les sœurs divines. Un naos recouvre cette scène, et à chacune de ses extrémités, devant un autel chargé d'abondantes offrandes, la reine Isis se tient debout, en adorante. Trois seulement des faces du pilier resté debout sont encore intactes. Deux sont occupées par les images de la Vérité et de la déesse Hathor ; la troisième, par celle du dieu de l'ensevelissement, Anubis. Il a une tête de chacal et tient en main la branche de palmier que portent, dans les convois funèbres, les parents et les amis du défunt, vêtus de robes blanches.



P. Hippolyte-Boussac architecte del.

La salle du fond, voûtée en anse de panier, est décorée avec une grande richesse. Le segment formé par la voûte et la frise qui court dans le haut de chaque paroi est orné d'une magnifique figure de la Vérité, agenouillée, les ailes éployées. Quant à la décoration des parois, ce sont toujours les mêmes sujets symboliques, cynocéphales, génies funéraires etc.

La chambre latérale, située à droite de la première salle, est assez vaste et, sur ses parois, on a sculpté et peint tout un mobilier funéraire. Des lits avec leurs escabeaux, des sièges et des chevets, des coffrets à *uchebtis*, des vases aux formes variées et des coffres énormes que surmontent les têtes de génies funèbres. On y voit aussi, armé du sceptre, le dieu Thoth ibiscéphale et, faisant face à la porte, droite et majestueuse, la Vérité étend ses grandes ailes.

Je reviens dans la salle d'entrée où, à côté de la porte du fond, deux sujets ont attiré mes regards. A droite c'est un grand épervier, perché sur le signe de l'Amenti, il domine la montagne de l'Occident, placée derrière lui, et produit un effet grandiose. A gauche, c'est la vache Hathor, sous un riche naos de pourpre et d'or. De même que dans le tombeau précédent, les sculptures sont rehaussées de brillantes couleurs ; mais ici le travail est moins bien traité, les formes sont lourdes et arrondies, le dessin manque d'élégance et de pureté. Nous sommes en pleine décadence.

En sortant, j'ai pu voir sur mon chemin ce qu'à mon entrée dans la vallée j'avais pris pour des dépouilles de vautours. Ce sont des ossements blanchis, des crânes, des tibias, des fémurs, des squelettes humains, broyés et mis en pièces, gisant pêle-mêle avec des lambeaux de bandelettes et de linceuls. Plus loin, c'est plus horrible encore. Un crâne est là sur le sol, enveloppé de ses bandelettes, dont certaines parties inégalement adhérentes à la boîte osseuse sont en divers endroits couvertes de taches jaunes et noires, et présentent l'aspect moucheté d'une peau de panthère. "Ce n'est pas beau, ce n'est pas beau," me crie le petit Saïd, qui a hâte de rentrer au logis. Non, vraiment, ce n'est pas beau.

Tous ces reliefs humains, qui s'étalent à mes pieds, ont appartenu à des femmes ; ces femmes ont été des reines, elles ont possédé le pouvoir suprême et, ainsi que l'attestent d'orgueilleuses inscriptions, elles ont vu les peuples des nations courbés sous leurs sandales ;

fairly large, and on its walls has been carved and painted a whole set of funeral appurtenances: beds with their bedsteads, seats and pillows, *uchebtis* chests, vases of different shapes, and enormous boxes surmounted by the heads of geni of the dead. There too, sceptre in hand, is seen the ibis-headed god Thoth, and opposite the entrance, upright and majestic, Truth outspreads her mighty wings.

I returned to the entrance-hall, where beside the further door two subjects attracted my attention. To the right it is a great hawk, perching on the symbol of Amenti ; he dominates the Mountain of the West placed behind him, and produces an effect of some grandeur. To the left it is the cow Hathor, under a rich naos of purple and gold. Just as in the former tomb, the sculptures are painted in brilliant colours ; but here the work is less well treated ; the forms are heavy and rounded, the drawing lacks elegance and purity. Decadence is at its lowest.

On emerging I was able to see on the path what I had taken on my entrance into the valley for the leavings of vultures. I found bleached bones, skulls, tibias, thigh-bones, human skeletons, all broken into fragments, all lying pell-mell amid shreds of bandages and winding-sheets. Further on it was still more horrible. A skull was lying on the ground wrapped in its bandages, certain portions of which, unevenly adhering to the osseous box, were covered with black and yellow stains, and presented the spotted appearance of a panther-skin. "It's not pretty, not at all pretty," cried little Saïd, who was in a hurry to get home. No, really it was not pretty.

All these human relics spread at my feet belonged to women ; those women were queens, they possessed supreme power, and, as haughty inscriptions testify, they

saw the peoples of the nations bowed beneath their sandals ; and to-day, scorned by the jackals and the hyenas, their limbs are scattered in a wild valley where every passer-by can profane them with impunity and kick them aside as a foul object. What a lesson for the great ones of the earth !

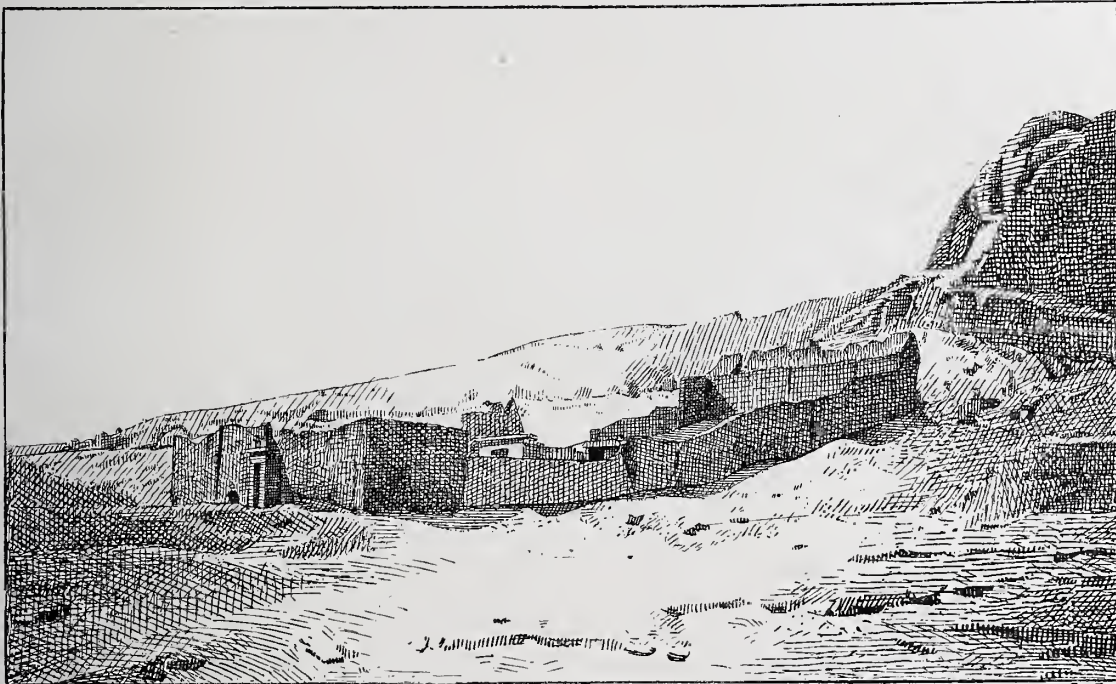
The sun was setting, the rocks threw their huge shadows over the silent valley. The air grew keen and my Arabs cold. I had to think of returning. I remounted my donkey. On the way I perceived high up on a rock a man with a gun, watching for a jackal or a hyena ; he evidently recognised me, and waved to me as I passed by. After lingering before some stelæ which Rameses III. dug in the rock, we continued our way along a mountain path. But already night had spread its veil over the whole of nature, the night-birds had issued from their hiding-places, the owl hooted mournfully, and the erne uttered her plaintive note. It was with great difficulty that, guiding our steps through the darkness, we arrived at a spot where the ground was entirely broken up ; there was nothing to be seen but black yawning holes, gaping tombs, rocks of fantastic shapes. Not far from the temple of Deïr-el-Medineh, reared by the Ptolemies, we met about fifteen individuals, some on foot, others on donkeys, of which we recognised one as a thief by his slit ear. Oh, he didn't care much, this poor thief, this unfortunate ass who perhaps had "cropped his tongue's breadth" from a neighbour's pasture, and whose ear had been slit to cure him of this grievous fault. The Arabs believe in the efficacy of the cruel punishment.

Soon we left the little Ptolemaic temple far behind, and when, overwhelmed with fatigue, we at last reached home, the full moon, already high on the horizon, had long been bathing the ancient necropolis in her pale light.

et aujourd'hui, dédaignés des chacals et des hyènes, leurs membres sont épars dans une vallée sauvage où chaque passant peut les profaner impunément et les repousser du pied comme un objet immonde.

Quelle leçon pour les grands de la terre! . . .

Le soleil est à son déclin, les rochers projettent leurs ombres gigantesques sur la vallée silencieuse. L'air devient très vif et mes Arabes ont froid. Il faut songer à rentrer. Je regagne ma monture. Chemin faisant, j'aperçois là-haut, sur un rocher, un chasseur à l'affût du chacal ou de la hyène ; il me reconnaît, sans doute, et me salue au passage. Après nous être attardés



P. Hippolyte-Boussac del.

TEMPLE DE DEÏR-EL-MÉDINEH.

devant des stèles que Ramsès III fit creuser dans le roc, nous poursuivons notre route à travers un sentier tracé dans la montagne. Mais déjà la nuit a étendu ses voiles sur la nature entière, les oiseaux nyctérins sont sortis de leurs repaires, le hibou fait entendre son hululement, l'orfraie lance son cri plaintif. C'est à grand'peine que, guidant nos pas à travers les ténèbres, nous arrivons en un lieu où le sol est entièrement défoncé ; partout ce ne sont que des trous noirs et béants, des sépulcres entr'ouverts, des rochers aux formes fantastiques. Non loin du temple de Deïr-el-Médineh, élevé par les Ptolémées,* nous rencontrons une quinzaine d'individus, les uns à pied, les autres montés sur des baudets, parmi lesquels un voleur que nous reconnaissons à son oreille coupée. Oh ! il est bien inconscient, ce pauvre voleur, cet infortuné baudet qui peut-être a du pré voisin "tondu la largeur de sa langue," et à qui, pour le corriger de ce vilain défaut, en a coupé une oreille. Les Arabes croient à l'efficacité de ce cruel châtiment.

Nous laissons bientôt loin de nous le petit temple ptolémaïque, et lorsque, accablés de fatigue, nous sommes enfin rentrés au logis, depuis longtemps déjà, haute sur l'horizon, la lune dans son plein inondait, de sa pâle lumière, l'antique nécropole.

* Il était consacré à Hathor.



9, CONDUIT STREET, LONDON, W., 23rd July 1898.

CHRONICLE.

THE JUNE EXAMINATIONS.

The Preliminary : Newly Registered Probationers.

The Board of Examiners report that there were 132 candidates for the June Preliminary Examination. Claims for exemption from sitting were allowed in the case of forty, and the remaining ninety-two were examined on the 14th and 15th ult., the examination being conducted simultaneously in London and at the Allied Centres of Birmingham, Bristol, Manchester, and York. The following are the results :—

	Examined	Passed	Relegated
London	55	35	20
Birmingham	7	5	2
Bristol	5	5	0
Manchester	13	7	0
York	12	6	0
	92	58	22

The names and addresses, with other particulars, of the passed candidates and of those who were exempted—making a total of ninety-eight—have been entered on the Register of Probationers and are here given in alphabetical order :—

ABERCROMBIE : Leslie Patrick ; Lymngarth, Brooklands near Manchester [*Master* : Mr. C. H. Heathcote*].
ASCROFT : Charles James Henzell ; 76, Bickley Street, Moss Side, Manchester [*Masters* : Messrs. Booth, Chadwick,* and Porter].
ASHWORTH : Samuel Bolton ; c/o H. T. Sandy, Phoenix Chambers, Stafford [*Master* : Mr. G. L. Jones].
ASMAN : Herbert Wilson ; 4, Farecliffe Road, Toller Lane, Bradford [*Masters* : Messrs. Mawson and Hudson].
ATKINSON : Archibald Harvey ; c/o Messrs. Greenaway* and Smith, 21, Queen Anne's Gate, S.W. [*Master* : Mr. J. Hugh Goodman].
BARCLAY : Fergusson ; Manor Mead, Weston-super-Mare [*Master* : Mr. F. Bligh Bond*].
BARKER : Herbert Mayer, c/o A. Marshall Mackenzie, Esq., Aberdeen [*Master* : Mr. A. M. Mackenzie, A.R.S.A.*].
BIGWOOD : Melville Sims ; 6, Prospect Buildings, Wells Road, Bath [Devonshire House School, Bath].
BILL : Harry Thomas ; 259, Birchfield Road, Handsworth, Birmingham [*Master* : Mr. Daniel Arkell].
BOYD : Roderick Henry ; Tennyson Road, Kettering [*Master* : Mr. F. A. Palmer].
BROADBENT : Arthur Cecil ; 12, Clyde Park, Bristol [*Masters* : Messrs. Paul* and James*].

BROADBENT : William ; Laurel House, Horsforth, near Leeds [*Masters* : Messrs. Whitehead and Smetham].
BROADHEAD : Charles Alfred ; 378, Lenton Boulevard, Nottingham [*Master* : Mr. W. D. Pratt].
BROOKE : John Tallents Wynyard ; The Hive, Bowdon, Cheshire [*Master* : Mr. John Brooke*].
BROOKER : Albert Edward ; Durlstone, Brockley Park, Forest Hill, S.E. [Alleyns School, Dulwich].
BROWN : Edwin Dace ; 6, Trinity Street, Hastings [*Master* : Mr. F. H. Humphreys*].
BROWN : John ; 21, Bailiff Street, Northampton [*Masters* : Messrs. C. Dorman* and Son*].
BRYNER : Edward Alexander ; Fairbourne, Sydenham Rise [*Master* : Mr. E. A. Runtz].
CARDER : Arthur Alfred ; 4, The Chase, Clapham Common, S.W. [*Master* : Mr. Hampden W. Pratt*].
CARTER : William Alfred Thomas ; Clarence Villa, Chapel Street, Petersfield [*Master* : Mr. A. G. Gibbs].
CHALMERS : Richard Mason ; 46, Grange Loan, Edinburgh [*Masters* : Messrs. Sydney Mitchell and Wilson].
CHAPMAN : Alexander Lawrence ; 27, Castle Street, Montrose [*Master* : Mr. D. Wishart Galloway].
CLARK : Stewartson William ; Blantyre House, Cullen, N.B. [*Master* : The late Mr. Alex. Smith].
CLEGG : Harry Hindle ; Piercy Mount, Newchurch, near Manchester [*Masters* : Messrs. Maxwell and Tuke].
CONDER : Alfred Rowland ; Orwell House, Coalhurst Road, Crouch End, N. [*Master* : Mr. Alfred Conder*].
COOK : Vincent Corbet ; Himley Lodge, Penn Fields, Wolverhampton [*Masters* : Messrs. Henman* & Cooper*].
DIBDIN : Ernest Charles Rowe ; Thornton House, Hurstbourne Road, Forest Hill [*Master* : The late Mr. J. W. Trounson].
DODD : Henry Huntingdon ; Rokeby Villa, Neville's Cross, Durham [*Masters* : Messrs. Plummer* & Burrell].
ENSOR : Leonard William ; 18, Mount Pleasant Road, Highfield, Sheffield [*Master* : Mr. Joseph Smith].
FARROW : John Wilford Hilbert ; 10, Milton Road, Wokingham, Berks [*Master* : Mr. A. E. Sidford].
FENOUHET : Andrew Edward Colin ; Hollamby House, Herne Bay, Kent [Epsom College].
FOTHERGILL : John Rowland ; 30, Manchester Street, W. [*Masters* : Sir Arthur Blomfield, A.R.A.* & Sons].
GALL : Robert Robb ; 129, Camden Street, N.W. [*Master* : Mr. Alex. Mavor].
GAMMIDGE : Herbert Wood ; c/o Messrs. Naylor & Sale, Irongate, Derby [*Masters* : Messrs. Naylor* & Sale].
GELDER : Alfred Ernest ; 365, Holderness Road, Hull [*Masters* : Messrs. W. A. Gelder* & L. Kitchen*].
GODMAN : Charles Richard Bailey ; Muntham, Horsham [*Master* : Mr. F. Wheeler*].
GOULD : Victor Royle ; 2, Dunsmore Road, Stamford Hill, N. [*Masters* : Messrs. Potts,* Son,* & Pickup].
GUEST : Walter Leslie ; 4, Tettenhall Road, Wolverhampton [*Master* : Mr. Joseph Lavender*].
HARDING : Edward ; 75, Arodene Road, Brixton, S.W. [*Master* : Mr. A. Wickham Jarvis*].
HARRISSON : John Anstice ; Acton, Rock Ferry, Cheshire [Calday Grange Grammar School].
HATCHARD : Otto Beeston ; St. Helena, Tunbridge Wells, Kent [*Master* : Mr. Herbert M. Caley].
HEDGES : Thomas ; 7, Dicconson Terrace, Lytham [*Master* : Mr. Thomas C. Grimble*].
HERKLOTS : Arnold ; South-Eastern College, Ramsgate.
HOBDAY : William Herbert ; 19, Kyverdale Road, Stoke Newington [*Master* : Mr. W. Henry White*].
JOHNSON : Arthur Haynes ; 17, St. Peter's Street, Winchester [*Master* : Mr. T. Stopher].
JONES : Lewis Austin ; Trevor House, Leckhampton

Road, Cheltenham [*Masters*: Messrs. Prothero * & Phillott].

KELLY: Sydney Arnold; Stratheden, Milward Road, Hastings [*Master*: Mr. Henry Ward*].

KENCHINGTON: Herbert; 6, Hamilton Road, Highbury, N. [*Masters*: Messrs. Nevinson * & Newton*].

LEANING: William; 38, Church Street, Gainsborough [*Master*: Mr. E. F. Green].

LEWIS: Albert Harry; 111, Lower Road, Rotherhithe, S.E. [*Master*: Mr. C. J. Harold Cooper].

LOVE: John; Alma Road, St. Albans, Herts. [*Masters*: Messrs. J. R. Brown & Son].

LOVEGROVE: Gilbert Henry; Eboracum, Herne Hill, S.E. [Dulwich College].

McADAM: Bernard Joseph; 27, Victoria Road, Clapham Common [*Master*: Mr. A. E. Purdie*].

McDONALD: Allan; 44, Victoria Street, South Circular Road, Dublin [*Master*: Mr. G. C. Ashlin, R.H.A.].

MACKENZIE: James Clark; Free Church Mansc, West Kilbride, Ayrshire [*Master*: Mr. A. N. Paterson, M.A.*].

MAUNDER: Henry Newman; Ashbery House, Bloomfield Street, Halesowen [*Master*: Mr. R. F. Matthews].

MICHELMORE: William; 18, Powderham Crescent, Exeter [*Master*: Mr. James Jerman*].

MILLER: James; 11, Roslin Road, Sheffield [*Masters*: Messrs. Hemsoll & Paterson*].

MINOR: Philip; 110, Buxton Road, Macclesfield [Wellingington College, Salop].

NOTLEY: Albert Carr; Larksfeld, Englefield Green, Staines [*Master*: Mr. Edmund Woodthorpe, M.A.*].

OGDEN: Ernest; 69, Roman Road, Failsworth [*Masters*: Messrs. Stott & Sons].

PALMER: Charles Thomas; 21, Bow Road, E. [*Master*: Mr. R. S. Ayling*].

PAYNE: Edwin Osman; 77, Perry Hill, Catford, S.E. [*Master*: Mr. W. Street Wilson*].

PAYNE: Wilfred Stonehouse; 77, Perry Hill, Catford, S.E. [*Master*: Mr. H. L. Florence*].

PEACE: Thomas Smith; 1, Kilmaur Road, Edinburgh [*Master*: Mr. Hippolyte J. Blanc, R.S.A.].

PEART: Andrew Mackintosh; Cleveland Villa, North Shields [*Master*: Mr. F. R. N. Haswell*].

PURCHAS: Reginald Thomas William; 12, Victoria Street, Cambridge [*Master*: Mr. F. T. Mullett].

RAVEN: Arthur Robert Fenton; Morton Terrace, Gainsborough [*Master*: Mr. E. F. Green].

RAYMOND: Geoffrey; The Presbytery, Yeovil, Somerset [*Master*: Mr. A. J. C. Scoles].

REDFERN: Albert James; 25, Fenwick's Street, Boldon Colliery [*Masters*: Messrs. Jos. Potts & Son].

REES: William Beddoe; 17, Harriett Street, Cathays, Cardiff [*Master*: Mr. W. J. Grylls].

RICHARDSON: William Farnsworth; Denstone House, Derby [*Master*: Mr. A. Macpherson].

ROBERTSON: Alexander Robert; 26, Gordon Street, Gordon Square, W.C. [*Masters*: Messrs. Davidson & Garden].

ROBERTSON: James David; 14, Augustus Road, Hammersmith, W. [*Master*: Mr. T. W. Cutler*].

ROE: George Maurice; Cheriton, De Cham Road, St. Leonard's-on-Sea [*Master*: Mr. Henry Ward*].

SALISBURY: Stanley; Limbrick Hall, Harpenden, Herts [*Masters*: Messrs. Burch & Forge].

SIMPSON: Edward Morris; The Moorlands, Boston Spa, R.S.O. [*Master*: Mr. G. F. Danby].

SIMPSON: George Stuart; 8, Park Hill, Richmond, Surrey [*Master*: Mr. H. W. Dobb].

SKINNER: Martin; 8, Barmead Road, Beckenham, Kent [*Master*: Mr. Sidney R. J. Smith*].

SLADEN: Edward Randolph; Bourne End, Maidenhead [*Masters*: Messrs. Truefitt & Watson*].

SMITH: Percy James; 37, Sidwells Street, Exeter, Devon [*Master*: Mr. James Crooker*].

STILLMAN: Michael Spartali; Trevor House, Leckhampton Road, Cheltenham [*Masters*: Messrs. Prothero * & Phillott].

STOCKDALE: Fredrick George; 103, Wellesley Avenue, Lisburn Road, Belfast [*Masters*: Messrs. Graeme, Watt, & Tulloch*].

STOWELL: Frederick Arthur, 53, Argyle Road, Ealing Dean, W. [*Master*: Mr. H. W. Hetherington Palmer].

TAIT: Henry Makins; Shellacres, Cornhill-on-Tweed [*Masters*: Messrs. James Stevenson & Son].

TAYLOR: Edgar Raymond; 17, Blomfield Street, Upper Westbourne Terrace, W. [*Master*: Mr. W. Henry White*].

TEDMAN: Arthur; 26, Durdham Park, Bristol [*Master*: Mr. F. Bligh Bond*].

THOMAS: Reginald William; 72, Victoria Street, St. James's, Exeter [*Master*: Mr. J. W. Jacomb Hood].

TOMSON: Frank Emerson; The Chalet, Kings Norton, Birmingham [*Master*: Mr. William Hale*].

WAKEFORD: Horace; 5, Brighton Terrace, Reading [*Master*: Messrs. Millar & Nasmyth].

WARD: Charles Frederick; Stoneleigh Villa, West Bromwich [*Master*: Mr. Wm. Henman*].

WARD: William; Stafford House, Handsworth, Staffs. [*Master*: Mr. W. H. Ward].

WEBB: Albert Edward; Pine Dale, Boscombe Park, Bournemouth [*Masters*: Messrs. Jennings & Goater].

WELLS: Robert Douglas, B.A. Cantab.; 13, Porchester Terrace, W. [*Masters*: Messrs. Stevenson * & Redfern].

WESTWOOD: Percy James; 26, High Street, Grays, Essex [*Master*: Mr. C. M. Shiner*].

WILSON: James; 34, Farm Road, Sparkbrook, Birmingham [*Master*: Mr. R. F. Matthews].

WOOD: Douglas; 5, Westbourne Avenue, Hull [*Masters*: Messrs. Smith, Brodrick, & Lowther].

WRIGHT: Cecil Laurence; Eridge, Branksome Wood Road, Bournemouth [Eastbourne College].

The asterisk (*) denotes members of the Institute.

The Intermediate: Newly Registered Students.

The Intermediate Examination, for which seventy-six Probationers entered, was held at the same centres as the Preliminary on the 14th, 15th, 16th, and 17th ult., with the following results:—

	Examined	Passed	Relegated
London	47	29	18
Birmingham	2	2	0
Bristol	4	3	1
Manchester	16	13	3
York	7	6	1
	76	53	23

The following passed, and have been registered as Students, the names of the first thirty-three being given in order of merit:—

TWIZELL: Robert Percy Sterling [*Probationer* 1897]; 133, Cromwell Street, Newcastle-on-Tyne [*Masters*: Messrs. Hicks & Charlewood*].

BEE: Thomas James [*Probationer* 1894]; Heath View, Sidcup, Kent [*Masters*: Messrs. Gordon,* Lowther,* & Gunton].

HARRISON: Shirley [*Probationer* 1897]; 7, St. Martin's East, Leicester [*Master*: Mr. Stockdale Harrison*].

BARKER: Raymond Turner [*Probationer* 1890]; Grove House, Southgate, N. [*Master*: Mr. F. Chancellor*].

ROSS: James Gardner [*Probationer* 1897]; 6, Kestrel Avenue, Herne Hill, S.E. [*Master*: Mr. A. Saxon Snell*].

- COMYN: Charles Heaton Fitzwilliam [*Probationer* 1895]; c/o R. S. Balfour, Esq., 76, Inverness Terrace, W. [*Master*: Mr. R. S. Balfour*].
- FAWCETT: James Ernest [*Probationer* 1896]; 10, Low Ousegate, York [*Master*: Mr. W. G. Penty*].
- LACEY: Albert Edward [*Probationer* 1895]; Hawkhurst Lodge, Southcote Road, Bournemouth [*Master*: Mr. J. F. Fogerty*].
- WARD: Lloyd Foster [*Probationer* 1895]; The Cedars, Trafalgar Road, Moseley, Birmingham [*Master*: Mr. A. Freeman Smith].
- QUAIL: John [*Probationer* 1897]; 62, Shrewsbury Street, Old Trafford, Manchester [*Masters*: Messrs. Salomons* & Steintal].
- GIBBONS: John Harold [*Probationer* 1895]; c/o Messrs. Thomas Worthington & Son, 46, Brown Street, Manchester [*Masters*: Messrs. T. Worthington* & Son*].
- THOMAS: Noel [*Probationer* 1897]; 22, Lockyer Street, Plymouth [*Masters*: Messrs. Hine* & Odgers].
- HEATHCOTE: Charles Harold [*Probationer* 1892]; Wychwood, Buxton, Derbyshire [*Master*: Mr. C. H. Heathcote*].
- HIGHMOOR: Samuel George [*Probationer* 1895]; The Grange, Poppleton, York [*Master*: Mr. Wm. Hepper].
- MOGER: Horace [*Probationer* 1894]; 64, Exmouth Street, New Swindon [*Master*: Mr. W. J. Willcox].
- GELDER: Herbert [*Probationer* 1896]; 145, West Park Street, Salford [*Master*: Mr. Joseph Nodal].
- WOODROOFE: Arnott [*Probationer* 1896]; Hall Square, Denbigh, North Wales [*Master*: Mr. R. Lloyd Williams*].
- GOODACRE: John Frank Johnson [*Probationer* 1894]; 10, Newtown Street, Southfields, Leicester [*Masters*: Messrs. R. J. & J. Goodacre*].
- TURNER: Philip John [*Probationer* 1894]; The Acacias, Stowmarket, Suffolk [*Master*: Mr. John Shewell Corder].
- WELLS: Robert Douglas, B.A. Cantab. [*Probationer* 1898]; 13, Porchester Terrace, W. [*Masters*: Messrs. J. J. Stevenson* & Redfern].
- BROUN: Guy Alexander [*Probationer* 1895]; 21, Falkner Square, Liverpool [*Master*: Mr. James Rhind].
- ROSS: James MacLaren [*Probationer* 1896]; 14, Saxe-Cobourg Place, Edinburgh [*Masters*: Messrs. MacGibbon & Ross].
- DORRELL: Arthur Sydney [*Probationer* 1893]; 87, Union Road, Clapham [*Master*: Mr. Alfred Long].
- JONES: John Ivor Price [*Probationer* 1895]; Ashdene, Cathedral Road, Cardiff [*Masters*: Messrs. J. P. Jones, Richards, & Budgen*].
- BARRETT: Herbert Stanley [*Probationer* 1896]; 53, Blomfield Road, Maida Vale, W. [*Master*: Mr. Rowland Plumble*].
- STRACHAN: Charles John [*Probationer* 1896]; 9, Antrim Mansions, Belsize Park, N.W. [*Masters*: Messrs. Henry S. Legg* & Son*].
- BROOK-GREAVES: Richard Brook [*Probationer* 1896]; Rock House, Ecclesfield, near Sheffield [*Masters*: Messrs. Flockton,* Gibbs,* & Flockton*].
- TRIGGS: Harry Inigo [*Probationer* 1892]; Stafford House, Chiswick [*Master*: Mr. Peter Dollar*].
- HEATHCOTE: Ernest Grigg [*Probationer* 1896]; 6, Princess Street, Manchester [*Master*: Mr. Charles Heathcote*].
- HOPWOOD: Philip Thomas [*Probationer* 1894]; 25, Weighton Road, Anerley, S.E. [*Master*: Mr. J. W. Rhodes].
- FOSTER: Francis Roland [*Probationer* 1893]; 18, Daleham Gardens, Hampstead, N.W. [*Master*: Professor Capper, M.A.*].
- HIGENBOTHAM: William [*Probationer* 1894]; 117, Elizabeth Street, Cheetham, Manchester [*Master*: Mr. J. Gibbons Sankey, M.A.*].
- THORP: Norman [*Probationer* 1896]; Dobroyd, Todmorden [*Master*: Mr. John Brooke*].
- ALEXANDER: John Thomas [*Probationer* 1895]; 18, Spring Terrace, North Shields [*Master*: Mr. Henry Gibson].
- BISHOP: Harold Courtenay [*Probationer* 1896]; 41, Clapham Common, S.W. [*Master*: Professor Banister Fletcher*].
- BUCKELL: Francis William Ashton [*Probationer* 1892]; 9, Portsea Place, W. [*Master*: Mr. H. Huntly-Gordon*].
- CHESTER: Frederick Billingham [*Probationer* 1892]; 208, Denmark Hill, S.E. [*Master*: Mr. H. Porter, M.A.*].
- ELLISON: Walter Watkin [*Probationer* 1895]; Eastbrooke, Wellingborough [*Master*: Mr. H. A. Cooper].
- GLOYN: Percival Edward [*Probationer* 1895]; St. Levan, Geraldine Road, Wandsworth, S.W. [*Masters*: Messrs. Burch & Forge].
- HARRIS: Kenneth John Sidney [*Probationer* 1894]; 8, Camperdown, Great Yarmouth [*Master*: Mr. J. W. Cockrill*].
- HIGSON: John Hindle [*Probationer* 1895]; 87, Preston New Road, Blackburn [*Masters*: Messrs. Fairhurst* & France].
- HOLT: Joseph [*Probationer* 1893]; Hawthorn Lane, Wilmslow, Cheshire [*Masters*: Messrs. Woodhouse* & Willoughby*].
- MERRIMAN: George Frederik Maskelyne [*Probationer* 1896]; Worcester Park, Surrey [*Masters*: Messrs. Hesketh* & Stokes*].
- NICHOLSON: Joseph Landell [*Probationer* 1893]; 85, Grange Road East, Middlesbrough [*Masters*: Messrs. Armstrong* & Knowles*].
- PALMER: Henry William Hetherington [*Probationer* 1892]; Belsize, Sutherland Road, Ealing, W. [*Master*: Mr. F. H. Jones].
- PIERCY: Arthur Raymond Pratt [*Probationer* 1896]; The Villas, Stoke-on-Trent [*Masters*: Messrs. Wood & Hutchings*].
- PRICE: Francis Evan [*Probationer* 1894]; Inveravon, Clifton, Bristol [*Master*: Mr. William L. Bernard*].
- SHEPHERD: Ernest Edward [*Probationer* 1895]; 13, Grey Street, Newcastle-on-Tyne [*Masters*: Messrs. Plummer* & Burrell].
- TOOMBS: Edwin Ashley [*Probationer* 1896]; 12 Keith Gardens, Shepherd's Bush, W. [*Master*: Mr. W. W. Gwyther*].
- WALFORD: William John [*Probationer* 1894]; Roseville, 130, Croydon Road, Anerley, S.E. [*Masters*: Mr. G. Elkington*].
- WILLIAMSON: Hugh Percy [*Probationer* 1891]; Shore House, Westoe, South Shields [*Master*: Mr. J. W. Hanson].
- WRIGLEY: Willie [*Probationer* 1896]; 6, Westgate, Wakefield [*Master*: Mr. William Watson].
- YOUNG: Clyde Francis [*Probationer* 1895]; Ingleside, Oak Hill Road, Putney [*Master*: Mr. Wm. Young*].

The asterisk (*) denotes members of the Institute.

The Final: Qualifying for Candidature as Associate.

The Final and Special Examination was held in London, from Friday the 24th to Thursday the 30th ult. There were thirty candidates, of whom fifteen passed, the remainder being relegated to their studies. The following were successful:—

- BAINES: John Cecil [*Probationer* 1894, *Student* 1896]; 31, Upper Tichborne Street, Leicester.
- BLOW: Percival Cherry [*Probationer* 1894, *Student* 1896]; 16, St. Peter's Street, St. Albans.

BÜSHER: Victor Evans [*Probationer* 1892, *Student* 1895]; 10, The Undercliffe, St. Leonards-on-Sea.
 CARDEN: Robert Walter [*Probationer* 1893, *Student* 1896]; 32, Leinster Square, Hyde Park, W.
 CHARLES: Ethel Mary [*Probationer* 1893, *Student* 1895]; York Street Chambers, W.
 COWIE: Alexander [*Probationer* 1894, *Student* 1896], 17, Milner Square, Islington, N.
 DENMEAD: Sidney Charlton; 22, Wellington Road, Watford, Herts.
 GOUGH: Arthur Reütlinger [*Probationer* 1891, *Student* 1895]; Compton Lodge, Hampton Road, Redland, Bristol.
 HARRISON: James Stockdale [*Probationer* 1892, *Student* 1895]; 29, Warwick Row, Coventry.
 HERBERT: Albert [*Probationer* 1893, *Student* 1894]; 24, Upper King Street, Leicester.
 McMICHAEL: Gerald [*Probationer* 1892, *Student* 1895]; Westbury, Honyold Road, Malvern.
 MOORE: Louis [*Probationer* 1893, *Student* 1895]; 52, Oldfield Road, Sale, near Manchester.
 RIDDEY: Charles [*Probationer* 1894, *Student* 1896]; 66, Stanley Road, Wellingborough.
 SURREY: Christopher William [*Probationer* 1891, *Student* 1894]; 10, Neville Terrace, South Kensington.
 VERCOE: Arthur William [*Probationer* 1891, *Student* 1892]; 15, Belgrave Terrace, Lee, S.E.

The following table shows the number of failures in the various subjects among the relegated candidates:—

I. Design	14
II. Mouldings	7
III. Building Materials	2
IV. Principles of Hygiene	7
V. Specifications	4
VI. Construction, Foundations, &c.	3
VII. „ Iron and Steel, &c.	3

The Cates Prize.

The Cates Prize, consisting of books to the value of Ten Guineas, has been awarded, on the recommendation of the Board of Examiners, to Mr. Albert Herbert for the best set of testimonies of study submitted for the Final Examination.

The Standing Committees 1898-99.

Pursuant to By-law 46, the Council have appointed the following members to serve on the Standing Committees, in addition to those elected by the Institute [see p. 400]:—

Art: Mr. L. Alma Tadema, R.A., Sir W. B. Richmond, R.A., Messrs. Alfred Gilbert, R.A., H. W. Brewer [*Hon. Associates*], and A. N. Prentice [*Associate*].

Literature: Dr. A. S. Murray, Professor Baldwin Brown, Mr. J. D. Crace, Colonel Lenox Prendergast [*Hon. Associates*], and Mr. E. W. Hudson [*Associate*].

Practice: Messrs. F. S. Brereton, Beresford Pite, John Slater, W. H. Seth-Smith [*Fellows*], and Sydney Perks [*Associate*].

Science: Messrs. H. F. Donaldson, M.Inst.C.E., Hugh Leonard, H. E. Milner, F.L.S., Professor Unwin, F.R.S. [*Hon. Associates*], and A. R. Mayston [*Associate*].

The Board of Examiners and other Committees.

The Board of Examiners (Architecture).—The Council regret to announce the retirement from the Board of Examiners of Mr. Keith D. Young [*F.*], who has given freely of his time and rendered invaluable service to the Board during a period of over eight years. The new members are Mr. R. I. Bennett [*F.*], President of the Manchester Society, and Mr. W. L. Bernard [*F.*], President of the Bristol Society. Mr. R. Shekleton Balfour [*A.*] has been appointed Assistant to the Board, in place of Mr. A. N. Prentice [*A.*], resigned.

Competitions Committee.—Mr. Leonard Stokes [*F.*] is a new member of the Committee, and Mr. J. M. Brydon [*F.*] retires.

Prizes and Studentships Committee.—Messrs. G. Fellowes Prynne [*F.*], Leonard Stokes [*F.*], and H. T. Hare [*A.*] are fresh appointments.

The President of the Northern A.A. elected Fellow.

Under the new proviso to By-law 9, whereby the Council have power to elect to the Fellowship without ballot the President of any Allied Society who is eligible and applies for admission, the Council, at their meeting on Monday, the 11th inst., elected as Fellow Mr. Frank West Rich, of 1, Eldon Square, Newcastle, President of the Northern Architectural Association.

THE REVISED SCHEDULE.

Discussion at the Special General Meeting.

Consideration of the Revised Paper “The Professional Practice as to the Charges of Architects,” adjourned from the Meeting of the 6th June, was resumed at the Meeting specially convened for the purpose on the 27th June, the Chair being taken by Mr. E. A. Gruning, *Vice-President*. The document as revised, and the report of the discussion at the earlier Meeting, appear in the JOURNAL, No. 15, pp. 402-6, Clauses 1 and 2 as passed at that Meeting being printed in the Minutes, pp. 407-8. At the Meeting of the 27th the rest of the Paper was got through, and the full text of the Schedule as finally amended and adopted is appended to the following report:

The CHAIRMAN having intimated that the same course would be followed as at the last Meeting, and the Schedule be taken clause by clause, invited Mr. Woodward, at whose instance the adjournment had been made, to open the discussion.

Mr. J. DOUGLASS MATHEWS [*F.*] said that Mr. Woodward had sent his suggestions on clause 3 to the Practice Committee, and they had practically adopted them. That clause embodied Clauses 2, 4, and 10 of the old Schedule; the only differences being in the amount, the minimum cost being put at £1,000 instead of £500, and the insertion of the words “in cases of alterations and additions to buildings.” Mr. Woodward now suggested the omission of the word “and” between “painting” and “mosaics,” and the word “or” between “sculpture” and “stained glass.” Those alterations made the clause read better, and he would move its adoption as thus amended.

Mr. WM. WOODWARD [A.], before the clause was put to the vote, asked leave to point out that the old Schedule of Charges contained a very important clause—viz. No. 5—which had been altogether omitted in the new Schedule. This stated that “2½ per cent. is charged upon any works originally included in the contract, but subsequently omitted in execution.” That state of things frequently occurred to architects in practice, and the Meeting should be informed why that very important clause had been omitted.

Mr. MATHEWS thought Mr. Woodward was under a misapprehension. Clause 1 as passed contained these words: “Such total cost is to be valued as though executed by a builder with new materials.” Those words practically included the passage referred to of the old Schedule.

Mr. WOODWARD explained that his point was this: Supposing an architect proceeded with the drawings, and the lowest tender was £7,000, and afterwards he had to alter his drawings to reduce them to £5,000; he should be entitled to charge 5 per cent. on the cost of the work, and an additional charge for all the labour connected with the reduction to £5,000 as well. According to the new Schedule he would not be entitled to do that. He therefore moved that a new clause be inserted in the following terms:—“2½ per cent. is charged upon any works originally included in the contract or tender, but subsequently omitted in execution.” He had added the words “or tender” after the word “contract” because it was possible that the work might not go to contract at all at the original sum, but only at the amended sum. He proposed the clause should come in as a new clause and be numbered 3.

Mr. MATHEWS suggested that to avoid mixing up the clauses the most convenient course would be to defer discussion on the clause proposed by Mr. Woodward until the remaining clauses had been considered, then, if the Meeting were in favour of Mr. Woodward’s proposal, they could decide on the fittest place for the clause to be inserted.

Mr. MATHEWS’s suggestion being agreed to, Clause 3 as amended was put to the Meeting, and carried.

With regard to Clause 4, Mr. MATHEWS said that it was really Clause 3 of the old Schedule, with these words added: “but the arrangement does not apply to the reduplication of parts in one building undertaking, in which case the full commission is to be charged on the total cost.” The words in the first part were not exactly the same, but the sense was the same. The following emendations had been suggested: that in the fourth line the word “is” should be substituted for “may be;” the word “the” be converted into “this,” so that the second part of the clause should begin “but this arrangement;” and the deletion of the words “to be,” so that the concluding words should read “the full commission is charged on the total cost.”

Mr. JOHN SLATER [F.] thought it a mistake to alter “may be” to “is.” It would be cutting their own throats. The clause was inserted in the interest of the client; it said: “The usual commission *may be* charged on the cost of one such building” only; but if an architect could get a commission on the lot it was all the better for him.

Mr. MATHEWS explained that it had been thought better to make the document definite, and the word “is” was used throughout the whole Schedule. The document was not absolutely binding.

Mr. EDMUND WOODTHORPE [F.], in reference to Mr. Slater’s objection, pointed out that the document was simply “the professional practice”—that is to say, the custom—“as to the charges of architects.”

In reply to a question as to the meaning of the words “the reduplication of parts in one building undertaking,” the Chairman stated that a large hospital, for instance, would be a reduplication of parts, on account of the number of pavilions which were alike. It was not quite the same case where a large number of houses were built from the same design.

Clause 4, as amended, seconded by Mr. OSBORNE SMITH [F.], was then put from the Chair, and carried.

Mr. MATHEWS said that No. 5 embraced Clauses 9 and 10 of the old Schedule, the alterations being “2½ per cent.” instead of “half the commission” in the third line, and the addition of the two final sentences:—“These charges are exclusive of the charge for taking out quantities. Preliminary sketches and interviews, where the drawings are not further proceeded with, are to be charged for according to circumstances.” The Committee had further adopted Mr. Woodward’s suggestion, and deleted the word “complete” after “approved design” in the second line; and the words “to be” in the concluding sentence, so as to read “are charged for according to circumstances.”

Mr. WOODWARD proposed that the sentence “These charges are exclusive of the charge for taking out quantities” should be omitted, as those words were included in the work not to be done in Clause 2. He further proposed that the final sentence beginning with the word “preliminary” should be a separate clause entirely. Again, the word “circumstances” at the end was vague; that portion of the clause should be altered to “charged for according to the trouble involved and time expended.” That clause might come in at the end of the Schedule.

Mr. MATHEWS said it was very undesirable that the sentence “These charges are exclusive of the charge for taking out quantities” should be struck out. An architect frequently took out his quantities for a client—or, at any rate, was responsible for them—without being responsible to the quantity surveyor. In this case the words were thought particularly desirable, in order that if the work were abandoned the client should quite understand that he had to pay the quantity surveyor’s charges. With regard to the other suggestion, he thought it did not matter very much one way or the other; but it must be an open charge, and “circumstances” certainly included “trouble involved and time expended.” It was absolutely impossible to lay down charges for everything to be done. With the Schedule as revised there ought to be no great difficulty in the architect making a fair charge upon the basis laid down, and in the employer being satisfied upon the same principle.

Mr. WOODWARD said he would not press his amendments if they did not commend themselves to the Committee.

Mr. H. HEATHCOTE STATHAM [F.] considered the sentence about quantities necessary; a thing could not be made too clear for clients.

Mr. C. FORSTER HAYWARD [F.] thought it important that the circumstances should be defined as suggested by Mr. Woodward. “Circumstances” was very vague.

Mr. STATHAM supported that view.

Mr. MATHEWS said there was no objection to the proposed alteration; substantially the same words were used also in Clauses 2 and 9.

The Clause as amended—namely, with the words “complete” in the second line and “to be” in the last but one deleted, and substituting the words “the time involved and trouble expended” for “circumstances”—was then put from the Chair and carried.

Mr. MATHEWS explained that Clause 6 was nearly similar to Clause 6 in the old Schedule. The following additions had been made: “by instalments” in the second line; “the certificates when granted” in the fourth line; and “during their progress” in the last line.

Mr. WOODWARD proposed the omission of the whole of the words after “entitled” in the first line down to and including “alternatively” on the fourth line, and that after the word “instalments” in the last line should be added, “at the rate of 2½ per cent. on the amount of the certificates when granted.” The Clause would then read: “The architect is entitled, on the signing of the contract, to half the commission on the amount thereof, and the remainder by instalments at the rate of 2½ per cent. on the amount of the certificates when granted.” That made it

perfectly clear that directly the contract was signed the architect was entitled to half his commission—that he might or might not take advantage of the payment in regard to the second half by requiring his $2\frac{1}{2}$ per cent. on the amounts of the certificates, or he might draw it, as was customary, at the end of the work. The words he desired to eliminate were absolutely unnecessary.

Mr. F. W. MARKS [A.] seconded the amendment.

Mr. EDMUND WOODTHORPE supported the clause as it stood, and asked whether it was customary to receive such half commission on the signing of the contract.

The CHAIRMAN said it had never occurred in his experience. He had very often been paid 5 per cent. on each instalment as paid to the builder, but had never received anything like half the commission on the signing of the contract, and he knew of no instance where it had ever occurred.

Mr. FORSTER HAYWARD said it had often occurred in his experience. If an architect insisted upon it he would get it, and it was just the time he could insist upon it. He remembered the late William Burges always insisted on it, and always took care when he signed his certificate to the builder to sign something like a request that the commission of the amount should be given to himself.

Mr. C. H. BRODIE [A.] thought the discussion showed very clearly that the two methods of payment were quite necessary to be put into the Schedule.

Mr. W. HILTON NASH [F.] asked if it was the custom to have $2\frac{1}{2}$ per cent. His experience was that one could not get $2\frac{1}{2}$ per cent. on the signing of the contract. He had tried it very often.

Mr. WOODWARD said he had always got it, and submitted that it was the custom. It was his experience entirely that $2\frac{1}{2}$ per cent. was charged on the very day the contract was signed. That was a time when half the work, perhaps more than half the work, was done, and the client might then fairly be asked for the $2\frac{1}{2}$ per cent. He himself had never had the slightest objection raised, and considered himself justified in saying it was the custom.

Mr. OSBORNE SMITH considered that if there were to be any alternative propositions at all, there should not be two but three, the same as there were, he believed, in the original. It was very handy to have those three terms of payment to put before clients, as he had been in the habit of doing himself; and on several occasions they had selected the very one which had been eliminated, namely, the payment of one third of the commission to the architect on signing the contract, one third when he was entitled to the five per cent. basis on the certificate, and the remaining one third on the completion of the works. He could not understand why "or alternatively on the signing of the contract" was objected to.

Mr. H. HARDWICKE LANGSTON [A.] said many clients might be able to pay half on signing the contract, but there might be others who could not pay 5 per cent. on the amount of the certificate when granted. He thought the alternative in the clause convenient for both parties, and the matter should be left open. He hoped Mr. Woodward's amendment would not be carried.

Mr. A. W. TANNER [A.] said his clients mostly looked to him for the five per cent. on the certificate; and it was also the case with business-men in town that they did not like to pay on the certificate. He suggested that they should bring up the altered words of the Office of Works Scheme again.

The CHAIRMAN explained that the Office of Works Scheme had not been repeated in the Schedule because it was no longer the practice of the Office of Works.

Mr. MATHEWS said that the matter had had the very serious consideration of the Committee, of which Mr. Osborne Smith was a member; and the Committee could not see their way to adopt either Mr. Woodward's or Mr. Smith's proposal.

The matter being put to the vote, Mr. Woodward's amendment was negatived; the clause as originally proposed was then put and carried.

Dealing with Clause 7, Mr. MATHEWS explained that it was practically Clause 8 of the old Schedule, with the addition of the words "after the contract drawings have been prepared" in the second line; in the last line but one "entered into" was inserted, and also "in proportion to the time occupied in such alterations."

The clause was carried without discussion, as was also a proposal by Mr. MATHEWS that as the matter in Clause 7 was more closely connected with Clause 5 and the earlier clauses than Clause 6, the clauses should be transposed. Clause 7 thus became Clause 6, and Clause 6 became Clause 7.

Clause 8, which Mr. MATHEWS said was the same as Clause 13 of the old Schedule, was carried without discussion.

With regard to Clause 9, Mr. MATHEWS said it was the same as the old Clause 17. Neither the Committee nor the Council had made any alteration in it; and to strike it out would be to get rid of the present Schedule, or at least a portion of it.

Mr. WOODWARD proposed that the clause should be omitted altogether, because it was to a large extent the work of the surveyor. In the first place, the client had no idea whatever of what the charge was to be; but it was obvious that whether they put it in the Schedule or not they were entitled to charge for the trouble involved. On the main ground he contended that it was wholly the work of the auctioneer or surveyor, and they should aim at making the Schedule as short and concise as possible.

Mr. ZEPH. KING [F.] seconded the proposition.

Mr. FREDERICK TODD [F.] considered such work quite within the architect's province. Arranging for building upon land required a great deal of skill. [Mr. WOODWARD: What does it mean?] It meant planning the ground for perhaps palaces and public buildings. They had had something of the kind going on lately at Westminster; it was work that required a person of the greatest possible skill. In Paris they employed the very first architect of the day for such work. Sir Christopher Wren himself advised on such matters, and there was a plan still extant made by him.

Mr. STATHAM said it was just one of those mischiefs that was likely to occur where an estate might be laid out by a man who was simply a surveyor, and who had not an eye to effect. But if an architect had the laying out of the estate he would probably make a much better thing of it.

Mr. LANGSTON thought it very difficult to settle the exact duties of an architect and surveyor. Mr. Woodward had given no sufficient reason for the omission of the clause, and he (the speaker) hoped it would remain in.

Mr. S. FLINT CLARKSON [F.] understood that Mr. Woodward had other amendments of the same kind in view. The Schedule ought to be kept as it is. It was not at all politic that it should be altered as suggested.

Mr. FORSTER HAYWARD considered the clause extremely important. He was much surprised at anybody wishing to take it out. The work of laying out an estate was a very serious matter, and certainly ought to belong to the architect. He hoped Mr. Woodward would withdraw his amendment.

Mr. WOODWARD said he did withdraw it, after the observations that had been made.

The Clause was then agreed to.

Mr. MATHEWS said that Clause 10 was practically Clause 21 of the old Schedule, but had been recast. This was one of the clauses he believed Mr. Woodward desired to omit, as his remark about Clause 9, that it concerned an auctioneer or surveyor rather than an architect, would apply equally here. Unfortunately, it was so, and the result was the very bad system of laying out roads and the very bad building that went on at the present time. Such

work, unfortunately, had got very much into the hands of auctioneers and surveyors. A good many auctioneers employed draughtsmen in their offices to do this kind of work, and their business, of course, was to let the land as quickly as they could, and secure their commission, and get the buildings up. District surveyors had the greatest difficulty in these matters. In an estate of the kind where an auctioneer was employed he seemed to have an idea that he had nothing whatever to do with the buildings, except to see that they were covered in. Therefore it was most important that this should be in the hands of an architect, should be considered to be his work, and should be so distinctly stated. They were not introducing new matter; it was simply adopting Clause 2 and parts of Clauses 17, 18, 19, 20, and 21 of the original Schedule. Those clauses were consolidated. It was also somewhat altered, for the reason that it often happened that an estate was laid out for a considerable time previously to any building taking place. Therefore the Committee thought it desirable that a charge of 2 per cent. should be paid for what was called preliminary work, and then when the roads, sewers, &c., had to be laid out there should be a charge of 4 per cent., which was practically 6 per cent. altogether. So that it was 2 per cent. on the payment when the preliminaries were settled, including the sanction of the local authorities; then, when the roads, sewers, and fences were put up (and those roads might be made four or five or ten years afterwards), the charge of 4 per cent. was paid, making it 6 per cent.

Mr. LANGSTON seconded the clause as proposed by the Committee.

Mr. WOODWARD said this was a clause which he should have supported strongly if he had been speaking at the Surveyors' Institution. But they were dealing here with a Schedule for the Royal Institute of British Architects, and to put in a clause with regard to roads and sewers in such a document was distinctly out of place. Such matters came within surveyors' work. On the ground of shortening the Schedule, and on the ground that the work referred to did not come within the range of an architect's duties, he would suggest that the clause be omitted.

Mr. A. W. TANNER [F.] said that as a young man he was engaged in the office of an architect who had to build a whole village for a member of the family of the Rothschilds. They laid out the drains, and assigned the lines of the different roads—did, in fact, all the work mentioned in the clause. Mr. Woodward must remember that architects had their particular line, which was trenched upon by many other branches of the profession. Auctioneers and contractors employed their architects now, and architects ought to stir themselves to defend such a clause as this.

Mr. BRODIE said the Schedule was to apply to country practitioners. Members of the Institute were all over the country; metropolitan architects might not have much of this work to do, but architects in the country had a great deal. Since he had been in London he had taken part in laying out a huge estate, consisting of over 2,000 houses; and the roads and sewers and everything connected with the estate were all designed in the architect's office.

Mr. STATHAM and Mr. HAYWARD both supported the view that such work should be done by architects.

Mr. EDMUND WOODTHORPE instanced an estate which had been cut up on paper by an auctioneer within three miles of Hind Head. All the roads had been made at right angles, but they were all such ups and downs that it was impossible to build on the estate, as the gradients of the roads were too great. It had been a blemish on that particularly beautiful spot for some ten to twenty years past. Not only that, but the only houses which had been built there were villas of the suburban type, with best rooms facing roads, instead of looking towards a glorious view extending right over the South Downs twenty to thirty miles away. There were other estates he might mention in

Mr. Woodward's own neighbourhood which had been absolutely spoilt in a similar way.

Mr. WOODWARD said that as the Meeting was evidently in favour of the clause, he would withdraw his amendment.

Mr. H. A. SACHELL [A.] asked why the work should be paid at the rate of 6 per cent.?

The CHAIRMAN thought Mr. Mathews had already answered that; 2 per cent. was payable on the designs being made; but as it was very often a great number of years before the work was carried out, it was only fair that 4 per cent., making 6 per cent. in all, should be charged instead of 5 per cent.

The clause was then put, and carried.

Mr. MATHEWS said that Clause 11 was practically the same as Clause 18 of the old Schedule, with the following words added: "but in respect of plots of great value a special arrangement must be made." On the old clause they charged on one year's ground rent. But in the City of London it would be absurd to talk about one year's ground rent when renting a plot of land. Plots in towns or cities were of greater value than mere suburban plots, therefore those words had been added to meet what might be a difficulty.

Mr. TANNER seconded the clause.

Mr. WOODWARD said that the objections he had raised to the two previous clauses applied even more strongly to Clause 11. The duties it referred to belonged purely to an auctioneer or surveyor, and he asked that the clause should be omitted.

Mr. STATHAM agreed with Mr. Woodward as regards this clause. The two previous clauses involved practical work of construction, which was architect's work. But he did not think that, in a document drawn up and sent out under the name of the Institute, it should be stated that letting land was part of an architect's work. He thought it was not, and was strongly of opinion that the clause should be left out.

Mr. TANNER said the clause had been much discussed by the Committee. Several members of the Committee stated positively that they had the business of letting plots, and that carried great weight with the other members. He thought, however, that the words "but in respect of plots of great value a special arrangement must be made" should be taken out.

Mr. MATHEWS pointed out that Clause 18 of the old Schedule said: "For actually letting the several plots (in ordinary cases) a sum not exceeding a whole year's ground rent may be charged." It was no new matter at all. It was one of the duties of architects who were surveyors to City companies—as some members of the Institute were—to plot the land and let it; and he had no doubt that the same thing was done by architects not only in London, but in other places as well.

Mr. STATHAM said the question was whether they should lay it down that the letting of land is part of the work recognised by the Royal Institute of British Architects. Although it was no new matter, it must be remembered that ideas had moved forward since the old document was framed. People were beginning to recognise the fact that an architect's business is the scientific construction of an artistic design; but the matter of fees for letting land did not come under that.

Mr. HAYWARD inclined to agree with Mr. Statham, though he thought the words rather misleading. It was not letting the land simply as an auctioneer would let a plot. An architect, especially one connected with any particular estate, had to be cognisant of the buildings to be erected upon it, and make regulations with regard to them, and have them under his supervision, in design, at any rate, and that might be perfectly legitimate architectural business.

Mr. MATHEWS pointed out that that came in the next clause.

Mr. LANGSTON observed that the Schedule was not laying

down that such business was the duty of an architect. Many things came within the scope of their professional practice as to which it would be very difficult to define whether they were an architect's duties or not. Such work sometimes fell to an architect to do, and because an auctioneer also did work of the kind that did not make an architect less an architect.

The CHAIRMAN, being asked for his own views, stated that he thought the clause should stand as it was in the Schedule.

Mr. MATHEWS considered the objection to the clause was opening up a serious question. The omission of the clause meant interfering with the former Schedule, and great care should be taken. The revised Schedule had gone out to all the members of the Institute, and no objection had been made to the clause except what had been raised during the discussion. He thought it would be unwise for the Meeting to strike out the clause which had already been accepted. Great care had been taken all through not to eliminate anything that was included in the old Schedule.

The CHAIRMAN said they must be guided by the vote of the Meeting, and thereupon put Mr. Woodward's amendment, which was lost.

A proposal being made that the clause should be incorporated with Clause 12, the Chairman and Mr. Mathews deprecated the alteration, as the matter had been well considered by the Committee and the Council. The clause as printed was then put and carried.

Mr. MATHEWS, proceeding to Clause 12—practically the old Clause 19—said that the first words, "for approving plans submitted by the lessee," were new. There was a change in the latter part of the clause: "The charge is a percentage not exceeding $1\frac{1}{4}$ per cent. up to £5,000, and above that by special arrangement." Clause 19 of the old Schedule said that "the charge should be a percentage not exceeding one-half per cent. up to £5,000, and above that by special arrangement." It was an acknowledged fact that that was an error altogether; to be paid at that rate could never be remunerative, because a percentage not exceeding one-half per cent. up to £5,000 was very little. If a house was to cost £500, £2 10s. could not be considered adequate for a professional man. As to larger works, it was the usual custom to charge 1 per cent. or $1\frac{1}{4}$ per cent., according to the size. That was the percentage which obtained in the City, and he believed also generally. The Committee had carefully gone into the matter. It was a question between $1\frac{1}{2}$ and $1\frac{1}{4}$ per cent., and the Committee, after much consideration, had adopted the $1\frac{1}{4}$ per cent.

The CHAIRMAN observed that on buildings of all sizes that was the percentage paid by all City Companies, and it was not limited to £5,000.

The Clause, seconded by Mr. LANGSTON, was then put, and carried.

Mr. MATHEWS, continuing, said that in Clause 13 (Clause 22 of the old Schedule) there was a little change from the original document, the charge for valuations above £10,000 being fixed at $\frac{1}{4}$ per cent. The latter part of the clause was new: "In valuations for mortgage, if an advance is not made, one-third of the above scale. The minimum fee is three guineas."

The clause was carried.

Clause 14, Mr. MATHEWS continued, was a new Clause entirely. It was inserted to bring the Royal Institute of British Architects into line with surveyors or auctioneers. Ryde's scale, which was appended, was so thoroughly accepted by all surveyors and architects, and acknowledged in Courts of law, that there ought to be no difficulty in adopting it. Few architects concerned with London property but had from time to time to undertake the valuation of property or to give evidence upon the subject, and it was most desirable that a scale should be adopted the same as for other practitioners.

Mr. LANGSTON seconded.

Mr. WOODWARD supported the clause, considering the

insertion of Ryde's scale most useful. That scale was the customary scale, and it would be most convenient for architects to have it to refer to. He proposed, however, that the passage immediately following the scale should begin "The above charge" instead of "The above scale."

Mr. MATHEWS explaining that the term only applied to the scale, Mr. WOODWARD expressed himself satisfied, and the clause was thereupon put and carried.

As regards Clause 15, Mr. MATHEWS said it was similar to Clause 23 of the old Schedule, with a little alteration. The words "and furnishing or checking a schedule of same" were inserted; and the last three lines were new—"For services in connection with settlement of claims by arbitration or otherwise, extra charges are made under Clause 8." The reason of the alteration was because the charge at the present time for estimating was 5 per cent. on the estimate. It often happened that it was not a question of estimating the Schedule but of checking it, and therefore, under those circumstances, it was thought the fee should be the same. It was also more explicit.

The clause was then put, and carried.

Mr. MATHEWS, continuing, said that Clause 16 was entirely new: "For inspecting, reporting, and advising on the sanitary condition of premises, the charge must depend on the nature and extent of the necessary services rendered." At the time the old Schedule was framed work of that kind was not much thought of. Now, however, it was the work of an architect, and it was most desirable it should be recognised in the Schedule. It was impossible to define the exact charge; that must depend upon the nature of the services and upon the skill of the architect.

Mr. WOODTHORPE seconded.

Mr. WOODWARD submitted that the question of advising on the sanitary condition of premises ought certainly to have no place in the architects' Schedule. Such work was frequently undertaken by men devoted entirely to sanitary work—men who were neither architects, surveyors, nor auctioneers. The fact of that not appearing in the Schedule would not prevent an architect carrying out such work if required. The Schedule, when produced in Court, would be of the greatest value as evidence for the architect. But such a clause as this would put a weapon into the hand of an opponent. What would a counsel say who wished to upset an architect, if he could read this clause about sanitary work?—"You indulge in sanitary work, and you indulge in taking levels, and in making roads and sewers. I should like to know where an architect's duties begin and end." Mr. WOODWARD concluded by moving that the clause be omitted.

Mr. ZEPH. KING seconded the amendment.

In reply to a question as to what would be the charge that an architect might make for inspecting and advising on the sanitary condition of premises, the CHAIRMAN said it was quite impossible to lay down any scale. There were many cases where 5 per cent. would pay very well, in other cases the charge must be by time, as the amount of the contract might be so small that 100 per cent. would not pay.

On the question of the amendment Mr. STATHAM said, suppose an architect was asked to examine into the sanitary condition of a building, and replied that that was no part of his profession. The natural rejoinder would be, "Health is the most important consideration in a dwelling; you profess to build dwelling-houses, and you cannot even assure us that they are in a sanitary condition!"

Mr. WOODWARD said he was not referring to a question of an architect designing and carrying out the drains connected with his own building; he was referring to the clause itself: "For inspecting, reporting, and advising on." That did not come within the same category.

The CHAIRMAN observed that architects had to inspect houses, and it would never do, if a client asked an architect to inspect his house and advise him on its sanitary

condition, to say it was not an architect's business to look after drains.

Mr. WOODWARD withdrew his amendment.

Mr. HAMPDEN W. PRATT suggested the omission of the word "necessary."

Mr. STATHAM seconded, and the clause, with the word "necessary" omitted, was then put and carried.

Mr. MATHEWS said Clause 17 brought in Clauses 1 and 20 of the old Schedule: "In all cases travelling and other out-of-pocket expenses" had been inserted; and the words "exceptional expenditure of time in travelling" were put in to make the matter clear.

Mr. LANGSTON seconded the clause.

The CHAIRMAN said that in all the disputes that had come before him in various ways he had no more frequent dispute than over the question of the allowance of time in travelling. If an architect in the country came to London to do work he would probably not charge his time in travelling to London; but if architects in London went into the country they were supposed to charge their time. In arbitrations he had been professionally engaged in, the majority were cases in which the charge for time in travelling had been disputed. It was a small matter, and it was a question whether it was worth while to insert those words at all.

Mr. HAMPDEN PRATT asked if the clause being in the Schedule helped at all.

The CHAIRMAN stated that, on the contrary, it had raised the greatest possible difficulties. He found the charge inserted more in the accounts of architects of an inferior class—non-members of the Institute, and very young men—not in those of the older and more established practitioners.

Mr. FORSTER HAYWARD remarked that a man of any status would not go so often into the country unless he had a great deal of work there. But to a young architect, doing most of the work himself, and giving it his own personal supervision, it was really a serious matter if he had to go a long distance; indeed, more time was sometimes spent in going a moderate distance than on a long journey.

In reply to Mr. STATHAM, the CHAIRMAN stated that the charge was very difficult to recover, very onerous on the client, and often very unjustly extorted from the client. There were cases in which it might be quite fairly charged; but those he thought should always be made a matter of arrangement. In this clause they were putting a weapon into the hands of unscrupulous men who did not hesitate to use it. That was his experience.

Mr. STATHAM proposed as an amendment that "may be" should be substituted for "is." That would show that an architect might fairly make the charge.

Mr. ZEPH. KING thought the charge should be made from the nearest town—supposing, for instance, that should be Manchester, instead of charging from London they should charge from Manchester in competing with other architects.

Mr. HAYWARD, replying to a question from the Chair, cited a particular occasion on which he had charged his time for travelling. In going down to Cornwall it took him one day to go, one day to do the work there, and one day to get back. There were two days occupied in going to and from the work, and no objection was made to the time charged. That had occurred very recently. Those things were generally matters of arrangement. If clients were made aware of the difficulty, architects, generally speaking, would get their fees. It was important on that account that the matter should appear in the Schedule.

Mr. HILTON NASH agreed. There was not only the architect's professional time, but also the wear and tear of going to such a place. He had business in Liverpool, and to go from there to the utmost confines of Norfolk was a serious thing in getting backwards and forwards; often, too, there was a long drive in addition to the train journey.

After further discussion, in which it was pointed out that Mr. Statham's amendment would be departing from the

definitive line adopted throughout the Schedule, the Meeting agreed to file the amendment, viz., that "may be" should be substituted for "is."

Mr. FLINT CLARKSON thought the words "under Clause 8" unnecessary, and moved that they be omitted.

The CHAIRMAN pointed out that the words were kept in Clause 15.

Mr. WOODWARD supported Mr. Clarkson's amendment.

Mr. TANNER, Mr. LANGSTON, and Mr. BRODIE objected to the words being struck out.

Mr. STATHAM thought that, as an exceptional course had been taken to put in "may be," the words "under Clause 8" might be omitted for that reason.

Mr. MATHEWS asked that the clause might remain as now amended. The words appeared also in Clause 15, and pointed to a definite charge.

The question being put to the vote, the amendment was lost. The clause was then agreed to with the one amendment above reported.

Coming to the last clause, No. 18, Mr. MATHEWS said that it was similar to Clause 15 of the old Schedule, except that the words "takes out and" had been inserted, so as to read, "When an architect *takes out and* supplies builders with quantities;" the word "estimates" had been substituted for "tenders;" the words "when practicable" omitted; and the words "extra labour" altered to "quantities."

Mr. OSBORNE SMITH thought the clause would be improved if the quantities were put in.

The CHAIRMAN remarked that the matter had been very carefully discussed, both by the Committee and by the Council. The Institute was not a Society of quantity surveyors, and did not fix their charges.

Mr. WOODTHORPE disapproved of the clause altogether, and moved that it be omitted.

There being no seconder the amendment dropped, and the clause as printed was put from the Chair and carried.

On the invitation of the CHAIRMAN, Mr. WOODWARD then brought forward his proposal to insert the passage he had suggested at an earlier stage of the debate—viz. to add the words "2½ per cent. is charged upon any works originally included in the contract or tender but subsequently omitted in execution." He proposed that those words be added to Clause 5.

Mr. ZEPH. KING seconded.

Mr. LANGSTON suggested that if the Meeting agreed to the passage being inserted, it would come in best after the words "in addition" at line 7 of the draft. Thus the opening words of the next sentence, "these charges," would read as including them all.

This suggestion was approved, and it was agreed that the passage should stand part of Clause 5, after the word "addition."

Mr. MATHEWS then mentioned an alteration in the heading which was suggested by Mr. Woodward, and which he thought would commend itself to the Meeting—viz. to take out the word "and" before "confirmed," and put it before "revised." The heading would then read: "Schedule sanctioned by the Royal Institute of British Architects, confirmed at a General Conference of Architects of the United Kingdom 1872, and revised by the Royal Institute 1898."

The CHAIRMAN thought the change unadvisable, as the first part of the heading was exactly the same as the original document, and it would be better to keep it word for word the same.

Mr. MATHEWS said there were now three statements in the heading; before, there were only two. First it was "sanctioned," then "confirmed," and then "revised."

Mr. STATHAM thought the present wording described the facts more correctly, and agreed with the Chairman that it should remain unaltered.

Mr. BRODIE supported Mr. Woodward's suggestion.

Mr. WOODWARD remarked that his only object was to make the heading read better and more concisely.

Mr. MATHEWS supported the alteration on behalf of the Practice Committee, pointing out that, although the document was substantially the same, the title was different. The old Schedule was headed "The Professional Practice and Charges of Architects;" now it was "The Professional Practice as to the Charges of Architects." Therefore the slight verbal alteration proposed would not interfere with the authority of the Schedule.

A vote having been taken on the matter, the alteration proposed was carried.

Mr. MATHEWS, referring to the alteration made at the last Meeting, by which the last sentence of Clause 1 of the original draft, beginning "the clerk of the works," was transposed to the end of Clause 2, said the Committee had reasons for placing that sentence in Clause 1. It would be a great advantage to have those words in the first clause, because their presence there was better explained. The Committee therefore suggested the following words at the end of Clause 1: "The superintendence of the architect being only occasional, the clerk of the works should be appointed by the architect, his salary being paid by the client." That made the matter clearer. A client would understand that an architect was not supposed to be on the works at all times; therefore, if the client required more than an occasional superintendence of the works, a clerk of the works should be appointed.

The CHAIRMAN ruled that as both clauses had been amended and passed by the previous Meeting, it was not competent for the present Meeting to make any further alterations in them. He then moved the adoption of the whole Schedule as amended, and its issue as an Institute Paper.

The motion was seconded by Mr. MATHEWS, and carried unanimously.

The CHAIRMAN, in closing the proceedings, observed that he thought he might venture to speak on behalf of the Institute, as well as on behalf of the Council, in proposing a most hearty vote of thanks to the Practice Committee and to the Chairman of that Committee, Mr. Mathews, for the immense amount of trouble and consideration they had given to the matter. (Loud applause.)

Mr. WOODWARD said he had very great pleasure indeed in seconding the proposition.

Mr. WOODTHORPE observed that Mr. Edwin T. Hall had had a very large share in the work of revision, and his name should be also mentioned in the vote of thanks. He was sorry to see he was not present that evening.

The CHAIRMAN said there was no objection to that; but possibly they ought to have the names of all the old Committee.

Mr. MATHEWS briefly responded on behalf of the Committee.

The following is the Schedule in the terms agreed to:—

THE PROFESSIONAL PRACTICE AS TO THE CHARGES OF ARCHITECTS.

SCHEDULE SANCTIONED BY THE ROYAL INSTITUTE OF BRITISH ARCHITECTS, CONFIRMED AT A GENERAL CONFERENCE OF ARCHITECTS OF THE UNITED KINGDOM 1872, AND REVISED BY THE ROYAL INSTITUTE 1898.

1. The usual remuneration for an architect's services, except as hereinafter mentioned, is a commission of 5 per cent. on the total cost of works executed under his directions. Such total cost is to be valued as though executed by a builder with new materials. This commission is for the necessary preliminary conferences and sketches, approximate estimate when required (such, for instance, as may be obtained by cubing out the contents), the

necessary general and detailed drawings and specifications, one set of tracings, duplicate specification, general superintendence of works, and examining and passing the accounts, exclusive of measuring and making out extras and omissions.

2. This commission does not include the payment for services rendered in connection with negotiations relating to the site or premises, or in supplying drawings to ground or other landlords, or in surveying the site or premises and taking levels, making surveys and plans of buildings to be altered, making arrangements in respect of party-walls and rights of light, or for drawings for and correspondence with local and other authorities, or for services consequent on the failure of builders to carry out the works, or for services in connection with litigation or arbitration, or in the measurement and valuation of extras and omissions. For such services additional charges proportionate to the trouble involved and time spent are made. The clerk of the works should be appointed by the architect, his salary being paid by the client.

3. In all works of less cost than £1,000, and in works requiring designs for furniture and fittings of buildings, or for their decoration with painting, mosaics, sculpture, stained glass, or other like works, and in cases of alterations and additions to buildings, 5 per cent. is not remunerative, and the architect's charge is regulated by special circumstances and conditions.

4. When several distinct buildings, being repetitions of one design, are erected at the same time from a single specification and one set of drawings and under one contract, the usual commission is charged on the cost of one such building, and a modified arrangement made in respect of the others; but this arrangement does not apply to the reduplication of parts in one building undertaking, in which case the full commission is charged on the total cost.

5. If the architect should have drawn out the approved design, with plans, elevations, sections, and specification, the charge is 2½ per cent. upon the estimated cost. If he should have procured tenders in accordance with the instruction of his employer, the charge is ½ per cent. in addition. Two and a half per cent. is charged upon any works originally included in the contract or tender, but subsequently omitted in execution. These charges are exclusive of the charge for taking out quantities. Preliminary sketches and interviews, where the drawings are not further proceeded with, are charged for according to the trouble involved and time expended.

6. Should the client, having approved the design and after the contract drawings have been prepared, require material alterations to be made, whether before or after the contract has been entered into, an extra charge is made in proportion to the time occupied in such alterations.

7. The architect is entitled during the progress of the works to payment by instalments on account at the rate of 5 per cent. on the amount of the certificates when granted, or alternatively on the signing of the contract, to half the commission on the amount thereof, and the remainder by instalments during their progress.

8. The charge per day depends upon an architect's professional position, the minimum charge being three guineas.

9. The charge for taking a plan of an estate, laying it out, and arranging for building upon it, is regulated by the time, skill, and trouble involved.

10. For setting out on an estate the position of the proposed road or roads, taking levels, and preparing drawings for roads and sewers, applying for the sanc-

tion of local authorities, and supplying all necessary tracings for this purpose, the charge is 2 per cent. on the estimated cost. For subsequently preparing working drawings and specifications of roads and sewers, obtaining tenders, supplying one copy of drawings and specification to the contractor, superintending works, examining and passing accounts (exclusive of measuring and valuing extras and omissions), the charge is 4 per cent. on the cost of the works executed, in addition to the 2 per cent. previously mentioned.

11. For letting the several plots in ordinary cases the charge is a sum not exceeding a whole year's ground rent, but in respect of plots of great value a special arrangement must be made.

12. For approving plans submitted by the lessee, and for inspecting the buildings during their progress, so far as may be necessary to ensure the conditions being fulfilled, and certifying for lease, the charge is a percentage not exceeding 1½ per cent. up to £5,000, and above that by special arrangement.

13. For valuing freehold, copyhold, or leasehold property the charge is—

On £1,000	1 per cent.
Thence to £10,000	½ ”
Above £10,000	¼ ” on residue.

In valuations for mortgage, if an advance is not made, one-third of the above scale. The minimum fee is three guineas.

14. For valuing and negotiating the settlement of claims under the Lands Clauses Consolidation Act or other Acts for the compulsory acquisition of property, the charge is on Ryde's Scale, as follows:—

On Amount of Settlement, whether by Verdict, Award, or otherwise.

Amount	Gs.	Amount	Gs.	Amount	Gs.	Amount	G s.
£ 100	5	£ 2,200	24	£ 5,200	39	£ 8,200	54
200	7	2,400	25	5,400	40	8,400	55
300	9	2,600	26	5,600	41	8,600	56
400	11	2,800	27	5,800	42	8,800	57
500	13	3,000	28	6,000	43	9,000	58
600	14	3,200	29	6,200	44	9,200	59
700	15	3,400	30	6,400	45	9,400	60
800	16	3,600	31	6,600	46	9,600	61
900	17	3,800	32	6,800	47	9,800	62
1,000	18	4,000	33	7,000	48	10,000	63
1,200	19	4,200	34	7,200	49	11,000	68
1,400	20	4,400	35	7,400	50	12,000	73
1,600	21	4,600	36	7,600	51	14,000	83
1,800	22	4,800	37	7,800	52	16,000	93
2,000	23	5,000	38	8,000	53	18,000	103
						20,000	113

Beyond this Half-a-Guinea per cent.

The above scale is exclusive of attendances on juries or umpires, or at arbitrations, and also of expenses and preparation of plans.

15. For estimating dilapidations and furnishing or checking a schedule of same, the charge is 5 per cent. on the estimate, but in no case less than two guineas. For services in connection with settlement of claim by arbitration or otherwise, extra charges are made, under Clause 8.

16. For inspecting, reporting, and advising on the sanitary condition of premises, the charge must depend on the nature and extent of the services rendered.

17. In all cases travelling and other out-of-pocket expenses are paid by the client in addition to the fees.

If the work is at such a distance as to lead to an exceptional expenditure of time in travelling, an additional charge may be made under Clause 8.

18. When an architect takes out and supplies to builders quantities on which to form estimates for executing his designs, he should do so with the concurrence of his client, and it is desirable that the architect should be paid by him rather than by the builder, the cost of such quantities not being included in the commission of 5 per cent.

The Revised Schedule is now published and on sale at the offices of the Institute. A copy of the document is issued to every member with the present number of the JOURNAL.

The New Government Offices.

The selection of Mr. J. M. Brydon [F.] and Mr. William Young [F.] as the architects to be entrusted with the preparation of plans and drawings for the new Government Offices has relieved the Council of the duty of silence as to the relations between Her Majesty's Government and themselves. It has been considered desirable that a short account of these relations should be published for the information of members.

In January a letter was received from the Secretary of Her Majesty's Office of Works requesting the Council of the Institute to suggest a "limited list of architects of taste, skill, and efficiency in classical design" who could carry out the works in question. The Council were also requested, while submitting the list of architects, to furnish the Government with a list of the principal buildings erected by each, together with photographs and illustrations. At the same time the President received a semi-official communication requesting that the Council would regard all proceedings as strictly confidential.

At the next meeting of the Council a committee, consisting of the President, a Vice-President, Mr. James Brooks, Mr. Aston Webb, and Mr. Campbell Douglas, was appointed to draw up and submit to the Council a list of names from which final selection could be made.

Meanwhile, a guardedly expressed letter was addressed to each of the Allied Societies requesting each to nominate two Classic architects in their district, and forward to the Council photographs of their works.

At the first meeting of the committee a selection was made among the provincial architects so nominated, and a list of London architects was drawn up, who were to be invited to send in photographs of one or two of their works executed in the Classic style.

With a few notable exceptions, the London architects responded to the invitation.

A second meeting of the committee was held, the photographs were inspected, and out of the twenty-two names before them, twelve were chosen by ballot to recommend to the Council.

At a meeting of Council, held on 7th March,

two names were added to the committee's list, and a ballot was taken for the selection of eight names. These were submitted, in alphabetical order, to the Government.

A day or two later it was notified to the President that the Government would be glad to have one or two extra names, and that the matter was urgent. Accordingly the three names next on the voting list, which were bracketed together as having obtained one less vote than the last of the eight, were sent in. In each case the photographs submitted to the Council were forwarded to the Government.

In answer to a question in Parliament by Mr. William Allan on the 18th inst., as to whether the Government had chosen the architects who were to prepare plans for the new offices, Mr. Akers-Douglas gave the following reply:—

Her Majesty's Government have made a selection. They have requested Mr. J. M. Brydon to prepare plans and drawings for the new Public Offices on the Parliament Street site, and Mr. Wm. Young to prepare plans and drawings for the new War Office on the Whitehall site. These plans, when completed, will be considered by Her Majesty's Government, and before orders are given to proceed with the buildings the drawings will be exhibited for the inspection of members. In selecting these gentlemen the Government have received invaluable assistance from the Royal Institute of British Architects.

On the 19th inst., in reply to Mr. Whitmore, Mr. Akers-Douglas further stated that the architects who had been selected to prepare designs would be desired to follow, in the internal arrangement of the new buildings, general lines to be laid down by the Office of Works. The elevations would be of Classical character in design, to accord with those already erected in Whitehall; and it was stipulated that the new Offices should be externally constructed entirely of Portland stone.

The Holborn-Strand Improvement Scheme.

The scheme for the construction of the new thoroughfare from Holborn to the Strand, full details of which appeared in the last JOURNAL, came up for the approval of the London County Council on the 5th inst. Mr. Shaw Lefevre, Chairman of the Improvements Committee, in moving the reception of the Report submitting the scheme, remarked that from whatever point of view the scheme was regarded—as a street improvement, as a great sanitary improvement involving the improvement of the whole district, or as an architectural improvement—it would add to the dignity and beauty of London. Speaking against an amendment which, if carried, would have had the effect of postponing indefinitely an improvement for which there is such pressing need, Sir Arthur Arnold pointed out that if the

opportunity now offered was not taken advantage of, the cost would be enormously increased in future years. Various amendments were brought forward and rejected, and the Council ultimately resolved to apply to Parliament in the Session of 1899 for powers to carry out the improvements in general accordance with the plan recommended by the Improvements Committee. The scheme thus adopted, as stated in the last number of the JOURNAL, is practically the same as that proposed by the Institute in 1896,* due acknowledgment of which is made by the County Council in their recently issued *History of London Street Improvements*.

The following further recommendations of the Improvements Committee were agreed to:—That the question of powers being sought to enable the Council to lay tramways along the new streets be referred to the Highways Committee for consideration and report; that provision be made for the construction of a subway under the new streets (for mains, wires, &c.), and also for the planting of trees in the new thoroughfares; that provision be made by scheme for rehousing within about a mile of their residences all the persons of the labouring class displaced who are dependent on fixed employment in the neighbourhood, and that adequate provision be made elsewhere for the remainder of the persons displaced; that provision be made as far as possible for rehousing the people previously to their being displaced.

The Sunderland Fire.

Mr. Frank Caws [*F.*], whose offices are in Fawcett Street, the scene of the recent disastrous fire in Sunderland, writes:—

At the last meeting of the Sunderland County Council the Report of the Building Committee respecting the proposed new by-laws was finally discussed and adopted. The last added clause, making fireproof staircases a *sine quâ non* of hotels, public buildings, and taverns, was severely criticised by those who argued that such a clause had not been adopted by any other municipality, and was unwarranted by anything which had ever happened in Sunderland. But, despite the opposition, the clause was carried; no one who joined in that discussion dreaming that within a few days a practical illustration of its advisableness would be given in Sunderland itself.

Havelock House, in which the fire originated, was a huge establishment, recently erected without regard to the wise provision of the London Building Act (unhappily not in force in the Sunderland Building By-laws) by which the area permissible between four walls is strictly limited. The Sunderland Corporation could not, and did not, enforce any such limitation; and the whole of the vast internal area remained undivided by

* JOURNAL, Vol. III. 3rd Series, pp. 434-36.

cross walls. So, of course, what scores of practical men have predicted would happen, if ever the fire broke out, actually did happen; and within about half an hour of the first outbreak the vast pile of girders, columns, and stone façades was lying prone in the streets and basement.

At the back of the premises a square tower of brickwork, containing the stairs to the dwelling-rooms for the employés on the top storey, still stands, a very lofty and picturesque ruin. By this stairway every one of the numerous occupants descended safely; for, though the steps were not of concrete as they ought to have been, and were ultimately utterly destroyed, yet the fact of their being inclosed within the four walls of a brick tower made them temporarily fireproof. Had the fire occurred one hour later, when the occupants of the upper flat would have been asleep, the chances are that the partial protection the brick inclosing walls afforded these stairs would have been too temporary to have averted terrible loss of life, and then the truth of Mr. Simpson's contention in his article in the *JOURNAL* [*ante*, pp. 171-74], which induced the Sunderland Council to adopt the by-law in question, would have been established on a terribly tragic basis.

How much better it would have been, not only for Havelock House itself, but also for the twenty-nine or more other establishments which it involved in its ruin, had, not the stairs only, but also the floors and roof been built fireproof, as they might have been at but small additional cost!

Of the many practical lessons taught by this great fire, this is, I feel, the one which architects and builders and municipal bodies should lay most to heart.

Another, scarcely less valuable, lesson of the fire is that it affords emphatic further testimony, already well attested, to the great efficacy of thick party-walls jutting above the planes of contiguous roofs to arrest the progress of heat and flame. But for two such walls—one, that of the National Provincial Bank, which stopped the fire from proceeding further eastward along High Street, when it had already extended across a number of houses; the other that of the Queen's Hotel, likewise arresting the progress of the conflagration southward along Fawcett Street—the devastated area would have been probably two or three times greater than the awful magnitude it actually reached.

The London Topographical Society.

The following communication, received from the London Topographical Society, may be of interest to members:—

The marked revival of interest in all that appertains to the Capital of the Empire, since its definite recognition as a geographical unit by the formation of the County, has directed a greatly increased and more widespread attention to the historical development of London. The protection of ancient buildings, the record of historical buildings which have been destroyed, are objects which have called into

existence special organisations. But there remains the ancient and modern topography of the Capital, a subject of vast and increasing importance, owing to the changes continually taking place, and this is the province of work which the London Topographical Society will undertake.

There is a long series of maps and views of London, depicting almost continuously the changes which have taken place ever since the days of Queen Elizabeth. A complete set of such original maps and views is not at present obtainable. One or two are known only by unique copies; of others there are only two or three impressions known to be in existence; for the rest nearly all of them are scarce, seldom changing hands, and then only at prices which place them beyond the reach of many who would prize them most highly.

The London Topographical Society has for its object the publication of a complete set of London maps, views, and plans in facsimile, so that every period, every change of importance, may receive illustration from the issues of the Society. With this cartographical illustration of the change and development of London as a whole, it is proposed to combine the not less important illustration of London localities and districts at various periods, by the reproduction of parish maps, tithe maps, surveying plans, estate maps, and so forth.

By the accomplishment of these objects a mass of interesting and valuable material will be placed at the disposal of every student and lover of London history and topography. Lawyers and Parliamentary agents, owners of London property, members of London local government bodies and their officials, antiquaries, students of London government and institutions, will all obtain material for their enquiries. The portfolios in the possession of members of the Society will be collections of original material for arriving at exact and precise knowledge, from which new light will pour on many points of interest in connection with the local and general history of London.

It is proposed to adopt a uniform size of paper upon which each map will be reproduced. That is to say, the large maps will be divided, and printed on separate sheets; small maps will be printed with larger margins. This will enable the portfolios to be arranged in the most suitable manner for ready reference and use.

In the year 1880 a Topographical Society was formed in London with wider and more varied objects than those now suggested. The most successful item on its programme was the publication of maps and views—the department of work which it is now proposed to take up and expand. The active *personnel* of that Society formed the nucleus of the present Committee, and this has facilitated an arrangement by which the old Society has become merged in the "London Topographical Society." Not only has the valuable stock of publications been transferred, but the plates and blocks are also available, so that additional copies may be obtained as required by the members of the new Society.

The works published by the old Society, available at once for issue to members of the London Topographical Society, are as follow:—

1. *Van den Wynqaerde's View of London, circa 1550*, measuring 10 feet long by 17 inches; seven sheets in Portfolio.
2. (a) *Hoefnagel's Plan of London*, from Braun and Hogenberg's *Civitates Orbis Terrarum*, 1572; (b) Illustrated Topographical Record, First Series.
3. (a) *Visscher's View of London*, 1616, in four sheets; (b) *Handbook to Views and Maps* published by the Society.

The valuable stock of these publications has been removed to the Society's Rooms at the above address. It is the present intention of the Committee that these works shall be issued on the same terms as by the old Society, reserving for the Council of the London Topographical

Society the right to raise those terms hereafter at their discretion. The terms now are, for the items 1, 2, and 3, two guineas, one guinea, and two guineas respectively, or five guineas for a complete set.

From the list of proposed future publications which the Committee have in preparation, the following items are selected as the publications for the year 1898:—*Porter's View of London, circa 1660*; *Norden's Map of London, 1593*; *Norden's Map of Westminster, 1593*. Each map or view as issued to subscribers will be dated, so that it may at once be placed in the portfolios in proper chronological order.

The Committee venture to anticipate a large support in carrying out the objects here indicated, and if this support is forthcoming—as it is intended to expend all the Society's funds on publications and working expenses—a complete cartographical illustration of London will be within measurable distance.

The Society will be administered, until the first Annual Meeting, by the present organising Committee.

Committee.—The Lord Welby, G.C.B., Sir Walter Besant, M.A., F.S.A., Sir Owen Roberts, M.A., F.S.A., J.P., D.L., Edwin Freshfield, LL.D., F.S.A., D.L., G. Laurence Gomme, F.S.A., F.S.S., F. G. Hilton Price, Director S.A., F.G.S., W. H. Dickinson, M.A., Wynne E. Baxter, J.P., D.L., Henry B. Wheatley, F.S.A., Philip Norman, Treas. S.A., John Tolhurst, F.S.A., W. H. Hardy, F.S.A., J. E. Smith, F.S.A. (*Vestry Clerk, Westminster*), John Philipps Emslie, James F. Gomme (Hon. Treasurer *pro tem.*), T. Fairman Ordish, F.S.A. (Hon. Secretary *pro tem.*).

The annual subscription is One Guinea. Further information may be had from the Hon. Secretary, 8 Warwick Court, Gray's Inn, W.C.

FULHAM having been divided into two districts for the purposes of the London Building Act, the London County Council have appointed as District Surveyors Mr. Stanley F. Monier-Williams [A.] for South Fulham, and Mr. Frederick W. Hamilton [A.] for North Fulham. Both gentlemen were granted Certificates of Competency by the Institute in 1886.

THE National Society for Checking the Abuses of Public Advertising have issued a memorial to the London County Council suggesting the expediency of applying to Parliament for powers to deal with the abuse of the illuminated advertisement that has now grown so common in London. By the sanction of the Council a copy of this memorial is lying at the Institute for the signature of architects.

MR. C. HODGSON FOWLER [F.], M.A., F.S.A., has been appointed architect to the Cathedral of Rochester, in succession to the late Mr. J. L. Pearson.

MR. WM. HENMAN [F.] is to preside over the section of Engineering and Architecture at the Sanitary Institute Congress to be held in Birmingham from September 27 to October 1.

THE late Lord Leighton's house in Holland Park Road is open to the public on Wednesdays and Saturdays of the present month from 11 till 7. Five hundred pictures have recently been added to the collection on view there.

MINUTES. XVII.

SPECIAL GENERAL MEETING.

THE REVISED SCHEDULE OF PROFESSIONAL CHARGES.

At a Special General Meeting, held Monday, 27th June 1898, at 8 p.m., Mr. E. A. Gruning, *Vice-President*, in the Chair, with 14 Fellows (including 3 members of the Council) and 12 Associates, the Minutes of the Meeting held the 20th June 1898 [p. 420] were taken as read and signed as correct.

The following Associates attending for the first time since their election were formally admitted and signed the Register—viz. Alexander Godolphin Bond, B.A. Oxon (Bristol), and Dudley Christopher Maynard.

The Meeting proceeded to the consideration of the remaining clauses of the Revised Paper on "The Professional Practice as to the Charges of Architects," the debate on which had been adjourned from the Meeting of the 6th June [see Minutes, p. 420].

Mr. Douglass Mathews [F.], Chairman of the Practice Standing Committee, formally moved the adoption of each clause prior to discussion thereon, and indicated throughout the modifications the original Schedule had undergone during revision.*

Further amendments* proposed by members were discussed and voted upon, resulting in changes being agreed to in Clauses, 3, 4, 5, 16, 17, and the heading to the Paper, and in the transposition of Clauses 6 and 7.

The complete Schedule, as finally amended [pp. 445-46], was then put to the Meeting, and it was unanimously

RESOLVED, That the Paper "The Professional Practice as to the Charges of Architects," as revised by the Royal Institute in 1898, be adopted and its issue sanctioned as an Institute Paper.

On the motion of the Chairman, the thanks of the Institute were accorded by acclamation to the members of the Practice Standing Committee for their labours in carrying out the work of revision.

Mr. Mathews having briefly responded on behalf of the Committee, the proceedings closed, and the Meeting separated at 10 p.m.

ALLIED SOCIETIES.

OFFICE-BEARERS AND COUNCILS 1898-1899.

The Manchester Society.

President, Mr. R. I. Bennett [F.]; *Vice-Presidents*, Messrs. J. H. Woodhouse [F.] and Frank W. Mee [F.]; *Hon. Secretary and Treasurer*, Mr. Paul Ogden [F.]; *Assistant Hon. Secretary*, Mr. George Brown; *Members of Council*, Messrs. T. Chadwick [A.], John Ely [F.], Edward Hewitt [F.], John Holden [F.], R. Knill-Freeman [F.], J. D. Mould [F.], F. H. Oldham [F.], W. A. Royle [F.], J. Gibbons Sankey, M.A. [F.], J. S. Hodgson, H. E. Stelfox [A.], and P. S. Worthington [A.]; *Auditors*, Messrs. W. Higginbottom [F.] and Peter Hesketh [A.]; *Education in Architecture Committee*, Messrs. J. D. Harker [A.], Edward Hewitt [F.], Jesse Horsfall [F.], F. W. Mee [F.], J. D. Mould [F.], J. H. Woodhouse [F.], P. Hesketh [A.], J. S. Hodgson, Roger Oldham, H. E. Stelfox [A.], Isaac Taylor, and P. S. Worthington [A.]; *Library Committee*, Messrs. John Holden [F.], J. H. Woodhouse [F.], J. S. Hodgson, and Godfrey Colles (Assistant Librarian).

The Dundee Institute.

President, Mr. T. M. Cappon; *Vice-President*, Mr. James Hutton; *Members of Council*, Messrs. R. Blackadder, G. A. Harris, J. W. Mackison, B.Sc., and David Dickie; *Secretary and Treasurer*, Mr. J. J. Henderson.

* See report of the debate on page 439 sqq.

REVIEWS. LXXVI.

(201)

INDIAN ARCHÆOLOGICAL SURVEY.

Revised Lists of Antiquarian Remains in the Bombay Presidency. Originally compiled by Jas. Burgess, C.I.E., LL.D., &c.; late Director-General Archaeological Surveys. Revised by Henry Cousens, M.R.A.S., Superintendent Archaeological Survey, Bombay. Bombay, 1897.

Monumental Remains of the Dutch East India Company in the Presidency of Madras. By Alex. Rea, M.R.A.S., Superintendent Archaeological Survey, Madras. New Imperial Series, Vol. XXI. Madras, 1897.

The first work under notice is the third volume of *Lists of Archaeological Remains in India* that has been published. The first was a list of remains in Bengal; * and the second took up the Central Provinces and Berâr.† The present volume deals with the whole of the Bombay Presidency and the native States that belong to it. These include Barodâ, Pâlanpur, Radhanpur, Kâthiâwâd, Kachh, Kolhâpur, and the Southern Maratha Minor States.

Dr. Burgess, in his preface to the original publication of the Lists which he compiled, says that the materials had been supplied in a tabular form, which had been made out by the district officers. In many cases the report had been written out by subordinates, we may suppose native officials, who were hard-wrought, and whose knowledge of what to enter and what to omit was often of the vaguest kind. A constantly recurring entry was, "The temple consists of stones placed one upon another"! As strict accuracy is highly essential in archæology, the writers that used this sentence ought to be praised for possessing, at least, this valuable character. Some of the contributors appear to have been rather deficient in this desirable quality. When two returns chanced at times to be sent in, slight divergencies were discovered. As an instance, in describing a temple at Mailarlinga, one return made it "27½ feet long by 20 wide, and the roof supported by 60 pillars;" another made it "85 feet long and 37 wide, with 96 pillars." Dates also differed, as if a century or two were of no consequence. Correspondence rectified a number of these blunders, but at the same time they are evidence that perfect reliance cannot be placed in every detail. It ought to be stated that a great many of the more important remains were surveyed by Dr. Burgess when he was at the head of the department in Western India, and will be found in the Reports which were published at the time.

One object of these lists is to enable the Government to judge as to the monuments that ought to be preserved. The Tâj at Agra, and

the Stûpa at Sanchi, as well as other remains, are now under careful surveillance and protection; this care cannot be extended to the vast mass of remains in India. The larger portion of them must be left as the prey of time. Hiuen Tsiang, the Chinese Pilgrim, who travelled over the most of India in the seventh century, has left us slight descriptions of each place he visited, and from these we can form some idea of the architectural appearance which the country presented when he travelled through it. It was very different from what we see now; there were Hindu temples, but at that date the Buddhist structures were largely in evidence. Stûpas existed, and might be counted in some places by the hundreds. Sanghârâmas, or monasteries of the Buddhist monks, were everywhere plentiful. Now all is changed; very few of these structures exist. Herein lies the value of the old Chinese Pilgrim; he is our "Pausanias" for India, and when the centuries have come and gone these Lists of the remains, as we see them in that country at the present day, will occupy a similar position.

If Buddhist structural monuments—those consisting of "stones placed one upon another"—are now scarce, the same statement cannot be made with regard to the rock-cut remains; they possess in their peculiar construction advantages over the destructive powers which give them a continuity of existence. The number of caves in the Bombay Presidency may be inferred from the constant mention in these lists of groups of them. The Western Ghâts, with the valleys and cliffs, supplied sites well suited for such excavations, and every advantage seems to have been taken of them.

At one time it was supposed that the Jains were the descendants, or that they were a sect that continued a form of Buddhism. We now know that this was not a correct conclusion; but the two religions were very closely allied, and both seem to have had numerous followers in Western India. The multitude of caves is good evidence of this on the side of Buddhism; and the great quantity of Jaina temples—ancient and modern—show that that sect has been very numerous, and is so at the present day, in the same region. I can only recall at the moment one Jaina temple that I chanced to see in the North-West, the one in Delhi, which contrasts very much with the large numbers to be found on the western side of India. Mount Abu is not within the boundary of the Bombay Presidency, and its celebrated group of Jaina temples finds no mention in these Lists; but Satrunjaya, near the town of Pâlitânâ in Kâthiâwâd, is within the limits, and a very elaborate plan of it is given in this volume. This is the most sacred spot of the Jains in Western India, and it is perhaps the most remarkable among the many celebrated religious shrines to be found in any part of the

* Noticed in the JOURNAL, Vol. III., 1896, p. 537.

† Noticed in JOURNAL, Vol. V., 1898, p. 331.

world. It might be described as a city of temples ; there are no houses, in the ordinary sense of the word, for no one is allowed to sleep, or to cook, or eat food within the walls. The temples cover two hills and the valley between ; in the plan each temple is shown and numbered, and there are 250 of them in all. Of free standing images there were 6,446 in 1889, "which, with innumerable small ones upon the *Sahasrakūtas*, tablets, and symbols, not detached, amount to more than 10,000; and these are being daily added to" (p. 272). These images are covered with quantities of jewellery, in the form of crowns, breastplates, armlets, necklaces ; many of these being of gold studded with precious stones. In the Rishabhadeva Temple—the principal one at Satrunjaya—there is said to be articles of this kind worth four lakhs of rupees. The only persons allowed to remain at night on the hill are the men who act as guards of this great wealth ; there are ponderous gates that are shut at sunset, and the very greatest care is taken to prevent what would be sacrilege, as well as robbery, in this city of sacred shrines.

There is another description of architectural construction that is peculiar to Western India ; that is a well or a cistern, called a Bâori. There is one at Allahabad, where it is called a Bâoli ; but they are not common in the North-West Provinces. In the West they are numerous, and in some cases they are elaborate examples of architecture, such as the Tâj Bâori at Bijâpur, or Dâdâ Harir's Bâori, at Asârvâ, near Ahmâdâbad. The simple definition of them is "A well with steps." In a large well of this kind the perpendicular shaft is, of course, wide ; on descending the stairs leading to the water, a gallery or passage will be found on each side leading to the well and round it. From this rooms can be entered, which are cool retreats in the hot weather. These features are realised with pillars, arches, and sculptured ornaments ; temples are added in some instances, so that the place is more like a palace than a mere work of utility to supply water. If I mistake not, there is a model of one of these Bâoris in the Kensington Museum.

The subject of "Foundation Sacrifices" has been written upon lately by more than one author ; in addition to this it appears that a "Completion Sacrifice" was also a custom when any important structure was finished. These rites are not exclusively Oriental, but in India and Burmah they have been practised down to a late date. Mandalay, the last capital of Burmah, was founded as late as 1860, and it is reported that over fifty persons were sacrificed and placed in the foundations of the city and palace. When the railway bridge was about to be constructed over the Hugli at Calcutta, it has been stated that every mother in Bengal shuddered lest her infant should be required to make the foundations secure. Ex-

amples of foundation sacrifices are plentiful, but those done at the completion of a work are as yet not so well known, hence the one recorded in this book may be worth extracting, so that it may not be lost.

In the Dhârwar district, at Madak, there is a tank or reservoir formed by a dam across a river ; irrigation was the principal object of this work, and sluices for supplying the water were necessary. An important part of each sluice was a single perforated stone, about twenty tons weight, and it is to one of these that the tradition of a human sacrifice is attached. The placing of these stones was the finishing point of this great work, so the king and all his court came to witness it ; but all the efforts of the workmen at the principal sluice failed in their purpose. Day after day the men toiled, but it was all in vain. "A rumour became current that the goddess was angry, and that nothing but a human sacrifice would appease her. The beautiful Lakshmi, the virgin daughter of the chief Vaddar [or tank-digger], then stepped forward and offered herself, which the brutes accepted, and she was buried alive below the site of the stone, which was then erected without further trouble. I mention this anecdote as curious, and because I believe it founded on fact. The sluice is now a temple, and I have been informed that it became so in consequence of this sacrifice" (p. 147). This account was written by Lieut.-Col. Playfair, R.E., who has repaired the tank in the present day.

This volume possesses one commendable feature : a reference is given to other works where any monument that is mentioned has been previously surveyed or described.

If the traveller in India should chance in his wanderings to come upon an old European burying-ground, he will in all likelihood have before him a very depressing sight. Those who erected the monuments have long ago passed away, and no affectionate hand has remained to preserve these memorials of the departed ; the result being that everything is in a condition of ruin, and all is covered by a rank vegetation which is slowly but surely accomplishing the work of destruction. If a monument should be more stately than the others, having perhaps some architectural pretensions, its ruined appearance appeals more forcibly to your feelings. The pipal tree is considered to be more sacred to Vishnu than to other deities of the Hindu Pantheon—that god is the "Preserver," but his sacred tree is not a preserver of architectural remains. It is said that a Hindu would not cut down a young shoot of this tree, even if it had taken root in his house and he knew it would ultimately ruin the walls. Such is its sanctity. I have a recollection of seeing in a burial-ground, somewhere in the North-West, a young pipal tree that had grown up beside a tomb ; somehow its interlacing

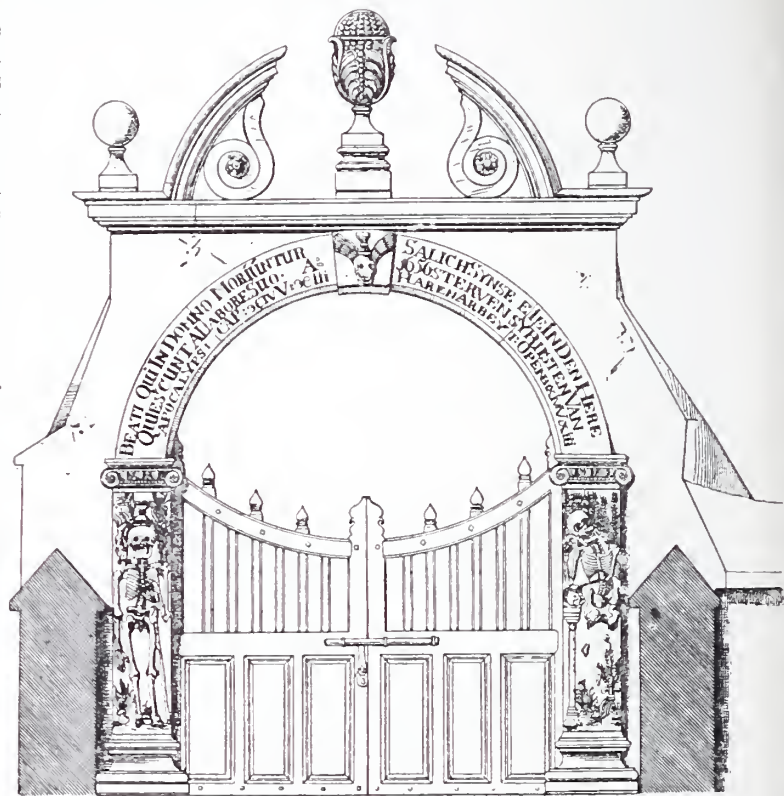
branches had got round one of the stones of the monument, and had already, when I saw it, raised the stone some feet above its original position; the tree was growing, and it would continue to lift the stone in this curiously destructive embrace.

Mr. Rea has been performing the part of "Old Mortality" in the now deserted burial-grounds of the Dutch that are still to be found in the Madras Presidency. The hammer and chisel have not been used to restore the quaint epitaphs and sculptures; the archæologist, in this case, has made drawings of the tombstones and copies of the inscriptions, and given them the more permanent character of a printed form in the present volume. It was in the beginning of the seventeenth century that Europeans, as traders, began what might be termed the invasion of India. The Portuguese had found their way there early in the previous century; that resulted from their discovery of the new route to India by the Cape of Good Hope. The English East India Company was founded in 1599, and in the year following, the Dutch, under Houtman, with a fleet, appeared on the shores of Hindustan. In these early days trade was the sole object, and a bit of ground on which to build a "factory" was all that was required. Each of these factories had its burial-ground, which is now, in most cases, almost the only visible remains of Dutch occupation. The number of these places of the dead which Mr. Rea has traced out round the shores of the Peninsula, every one telling of a factory that had existed at the spot, is good evidence of the activity of the Dutch East India Company during the seventeenth century.

It may be added that the List of Antiquarian Remains in the Bombay Presidency above noticed mentions the existence of Dutch tombs in the Broach and Ahmadabad districts; these show that the Dutch factories were not limited to Madras.

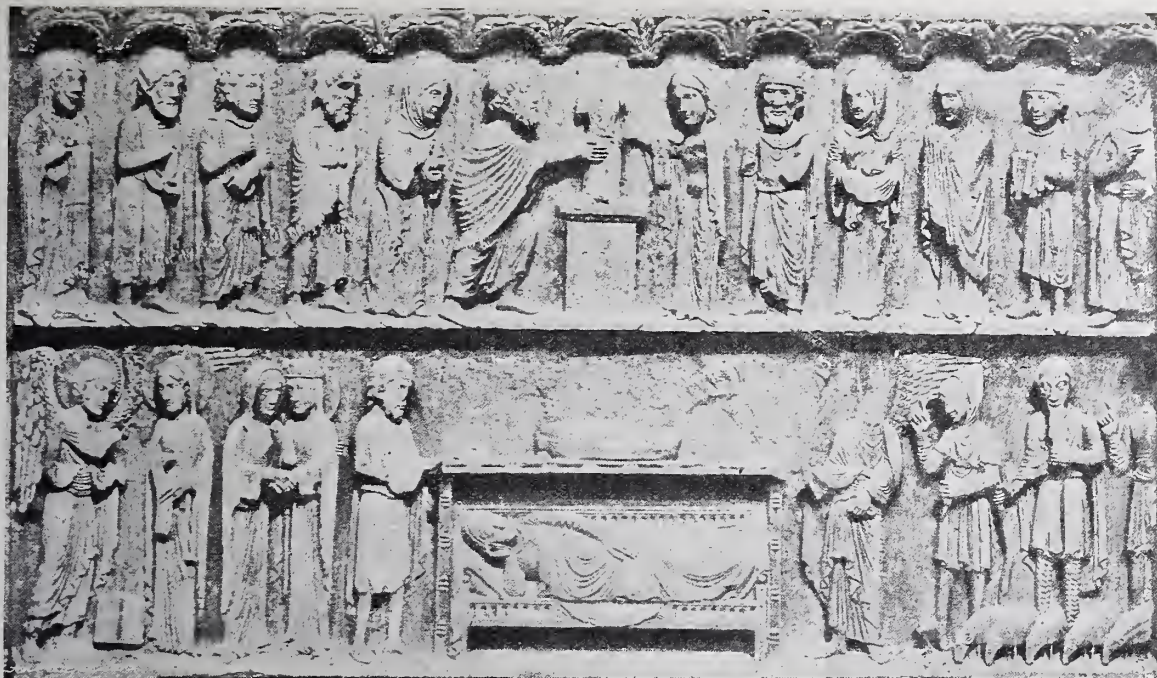
There are seventy-three plates in the volume; most of them are merely representations of single tombstones, with the inscriptions, in Dutch, mixed occasionally with Latin texts from Scripture. Many have coats-of-arms; hour-glasses, skulls, and cross-bones are also common; and in most cases there are elaborate ornamental borders. The designs are European, but the cutting has been done by natives. In a few instances, where the monument has some pretensions to an architectural structure,

it is curious to see how our most ordinary mouldings have been manipulated by the native workman, so that they have much the appearance of the mouldings to be seen on some Hindu temples. This feature is very distinct in a monument at Tuticorin (Plate LXI). There is another, and what may be looked upon as a rather remarkable instance, in the burial-ground at Pulicat. It was common in Indian architecture—and good examples may be found in the rock-cut temples of both the Brammans and the Buddhists—to place a figure on each side of a doorway; these



LICHGATE AT PULICAT. Reduced from Plate XVI.

were known as Dwarpâlas, or door-keepers. The Lychgate at Pulicat still remains; it has a Romanesque arch supported on piers, and on each pier there is a pilaster with Ionic capitals. On both pilasters a skeleton, as a dwarpâla, has been sculptured. Mr. Rea describes these figures—whether humorously or ironically is not indicated—as being "almost life-size." In the days when skulls and cross-bones were considered to be the appropriate emblems for tombs, these two door-keepers must have been looked upon as a very happy thought. WILLIAM SIMPSON.



Portion of Tympanum, West Porch, Chartres Cathedral.

LA CATHÉDRALE.*

WHEN Didron spoke of Victor Hugo as having in his *Notre Dame de Paris* built up in a few short weeks the Cathedral of the Middle Ages, he illustrated that ill-regulated but generous fervour which touched and transfigured all men and all things for the Early Gothic Revivalists. Hugo's chapters on the great church are illumined by sudden gleams of genius, and graced by his characteristic literary excellence. They abound in the pregnant hint and acute suggestion which come to an imaginative and poetical writer most readily when he is not hampered by too much knowledge of his subject; but the picture is not made to be looked at closely. It is a piece of scene-painting—broad, dashing, and haphazard. The Cathedral looms before us an imposing, but shadowy, mass; the detail is vague, blurred and uninforming; nor, in spite of the title, is the church really vital to the book; it moulds neither character nor circumstance. As a matter of fact, the romance, when it first appeared, owing to a temporary loss of manuscripts, did not contain the three chapters through which Hugo gallops his architectural hobby-horse; and their connection with the rest is so slender that those who, in the writer's words, have eyes only for the drama may, and do, pass them by with a light heart and pay no penalty. They are for the curious or jaded few, like the Architectural Room at the Royal Academy.

The book under notice is of a very different and far less common type. It is indeed a latter-day miracle that a man brimming over, as M. Huysmans is, with the quintessence of all that is searching, questioning, and luminous in the spirit of contemporary Paris, should have written a book out of all touch with its time, in which iconography, mysticism, the symbolism of sounds, of scents and colours, are discussed, and pressed, and accepted with an air of perfect conviction. Nor is it less surprising that a narrative so dull, prolix, and disconnected—to put it plainly—should have found its thousands of admiring readers in a society both intolerant and incurious in respect of the subject-matter.

* *La Cathédrale*, 7^{ème} Edition, 1898. J. K. Huysmans, Paris. P. V. Stock, Editeur.

But M. Huysmans has already made the intelligent reading world his own. The belief that what he writes is worth reading is not lightly founded, or lightly held, and it is justified, even in so unpromising a production as the present, by sustained and subtle beauties of description, by felicities of thought and phrase which belong only to the elect, and by the truth of the quiet psychological study which forms the backbone of the book.

How far M. Huysmans is sincere in the frank mediævalism which he professes, it is impossible to say; but, even if we allow a liberal discount, we must modify seriously the impression of his personality left by his earlier work. The writer of such a book as this is not the man to have dealt with what is revolting in life, except with the idea of bringing it into the light and making it hateful. For the future we must think of him as a pure and candid soul, aghast at the enormities of the world, and recognise in his work the action of a motive never perhaps more truly above reproach than when his means seem most open to exception.

The subject of *La Cathédrale* may be shortly stated. Durtal, for whom the literary atmosphere of Paris has come to mean moral asphyxiation, the gradual sapping of all spiritual impulse, takes the opportunity of the appointment of his friend the Abbé Gévresin to a canonry in Chartres Cathedral, to try the effect of fresh surroundings. There, in the stillness of the small cathedral town, amid the depressing influences of the treeless plains of La Beauce, he wears away the slow-moving months of a life without incident, drifting to and fro almost without volition on a tide of unrest and indecision, now moved by intimate communion with the solemn mysteries of the cathedral towards the monastic life of Solesmes, repelled the next moment by the love of liberty, by the horror of submitting his individuality to the millstones of conventual rigour, most of all, perhaps, by the literary man's dread of having his favourite passages edited by a Superior without a sense of style.

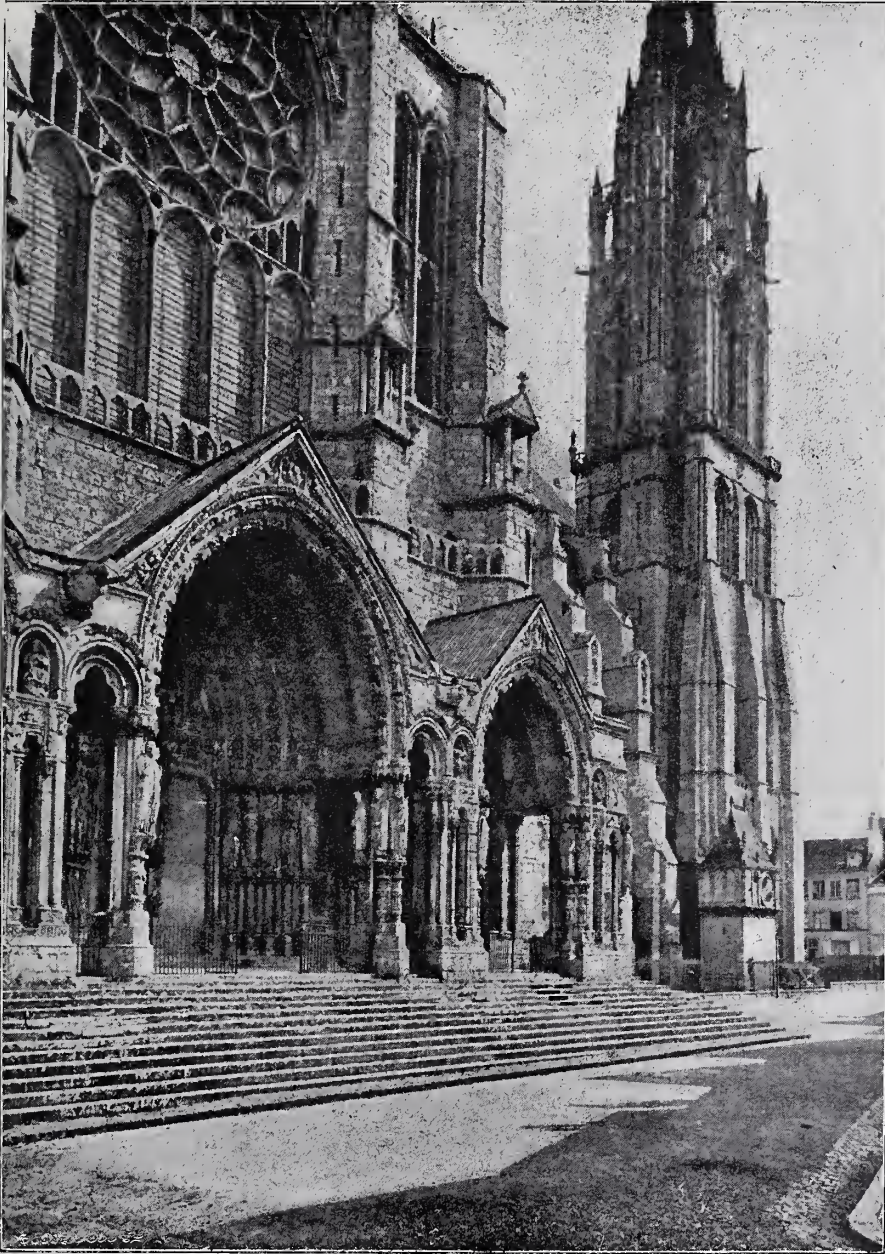
This is a true touch; Durtal's temperament is, above all, that of the artist. Fastidious and sensitive, he dwells with satisfaction on the delights of seclusion from the squalor and ugliness of the world; but set him face to face with the reality, and the details frighten and offend him. He might find content at last like a Thoreau in the woods of Walden, one would be inclined to say; but, unless M. Huysmans is misunderstood, we shall find that in *L'Oblat*, the book which is soon to be looked for, Durtal has taken the momentous, the much-debated step.

The title of this book is no misnomer. Either we must catch the infection of the writer's enthusiasm for Notre Dame de Chartres, or we may as well lay his rhapsody aside at once. We must stand with him while he runs his hand lovingly over every fold of drapery in the porches, follow him through disquisitions of a length and minuteness unbearable in any one less gifted, and drink deeply with him of the lore of an age when faith hung like fruit on every tree, with what countenance we may command.

For a true enjoyment of the book one must try to enter into the writer's mind, see with him, admire with him, believe with him. But for everyone with an eye or an ear for beauty there are pages of word-painting so vivid and so picturesque that to leave them unread would be a real loss, intellectual and emotional. Unfortunately, it is almost impossible to prove the point by quotation. M. Huysmans is so long-winded that there is nothing for it but paraphrase, and he is at the same time so minute that if one were to try to boil down one of his pages, the simile of the ox in the teacup would be hopelessly inadequate to express the strength of the product.

Critical judgments of almost epigrammatical brevity and point are numerous, and none is better than this on the Renaissance: "From the moment the Luxury of the Renaissance made its appearance, the Comforter took to flight; Deadly Sin in stone could spread at will"—where, in a few words, the non-religiousness, the return to a classic point of view and classic ideals, which is at the root of every manifestation of the Renaissance, whether it is in literature, architecture, painting, or sculpture, is put with a trenchant and picturesque vigour, which drives the fact home like a sledge-hammer.

Architecture for M. Huysmans exists only as the handmaid of religious observance. The history of the art in the Middle Ages is, he says, not only the struggle to resist the thrust and weight of vaults, as laid down by M. Quicherat, "but there is something in this art beyond mere



NORTH PORCH, CATHEDRAL OF CHARTRES.

material skill and the solving of practical questions." This it is with which M. Huysmans is preoccupied; the history and understanding of Gothic constructionally are not strong points with him, but he has the art of making the dry bones live, when the archæologist would leave them dead as he found them, albeit neatly labelled and described. Here, for instance,

is something to counterbalance a little imperfect history: "Romanesque has retained somewhat of a time anterior to the birth of Christ; it is the embodiment of a prayer to the implacable Adonai rather than to the loving Son or the gentle Mother."—"Gothic, in a word, is the unfolding of a soul, while Romanesque architecture pictures it retiring within itself."—"Romanesque is typical of the Old Testament, Gothic of the New. The simile, indeed, is exact, when one considers it. Is not the Bible, the unbending book of Jehovah, the awful code of the Father, symbolised in Romanesque with its air of severity and contrition, and the Gospels charged with sweetness and consolation in Gothic, full as it is of outpourings, of persuasiveness, of lowly aspirations?"

It is the soul of the great Church which touches him, that indefinable something born partly of the spirit in which its builders worked, partly of its history, partly of its daily use. "Architecture and Archæology have laid bare the organism for us. Who will declare the soul?" For him, Notre Dame at Paris, "in spite of the dithyrambs of Hugo," is soulless. The work which scraping and cleaning, the repiecing of sculpture, the restoration of statuary, began, has been completed by the London tourist, who brandishes his Baedeker during the Elevation of the Host; all that is left is the dull, unilluminated corpse of stone. "Then take Amiens, with its white glass and crude glare, its chapels closed with lofty grilles, the long silences undisturbed by prayer, the emptiness. It, too, is void of soul, and, I know not why, breathes for me an old, musty savour of Jansenism." Others—Reims, Rouen, Tours, Le Mans—are still warm, but the last agony is on them; only in Chartres does one feel that the incense of prayer rises to the Holy Mother.

The mediæval Church, reared by a faith which surmounted every obstacle, remains the embodiment of praise and adoration, but we must look to the tower, better still to the spire, the arrow of masonry, for the true symbol of prayer, "winging its way through the clouds to the very heart of the Father as it were to a target."

M. Huysmans's sympathies go out most strongly to the very earliest days of Gothic art. He hangs with the love of a mother over its cradle, but the seductiveness of Jean Texier's work is not lost on him. "The new tower," he says, "pierced like lacework, wrought like a gem, hung about with foliage and the tendrils of the vine, rises with long-drawn grace of coquetry, trying to make up for the gush of soul, the humble entreaty of its elder by laughing orison and happy smile, and to win the Father by merry, childlike prattle." But the writer can be picturesque as well as fanciful. Jean Texier's work is once more his theme. "Under a clear sky the whole mass grows silvery, and, when the sun lights it up, is touched with a glow of gold; from close by its surface is like a biscuit which has been nibbled, the silicious limestone pitted with holes; at other times, when the sun is setting, it is suffused with crimson, and springs aloft rosy and green like a colossal reliquary of delicate workmanship, and at twilight it fades away into blue, and as the blue becomes violet, seems to melt into the air." On a larger canvas M. Huysmans is no less completely at home. His picture of the celebration of Early Mass in the Crypt is perhaps the best thing of the kind in the book. Packed with small detail, painted with an infinity of little touches, an air of mystery still hangs about it. The gloom parts here and there to show the soft gleam of the lowering vault, the rounded form of a sturdy column; the atmosphere is heavy with the reek of oil lamps and melting wax, mixed with the aroma of incense, and the vague savour of earthiness; the very figures of the kneeling people are dim and indefinable. Only on the officiating priest and his assistant the light falls strong. It is just such a picture as Rembrandt might have painted.

The book then is full of dull, featureless tracts of writing, of learning so perverse in its futility that a page or two of proper names comes as a welcome anodyne; the same chord is struck again and again till the very ears ache; the boredom of Durtal's life at Chartres is so immense, his recreations so monotonous, that the reader becomes infected with a *malaise*

almost as heavy as his own, but yet he does not put the book down. He has learnt by experience that patience will have its reward. The tiresome disquisition on the symbolism of scents is forgotten in the monographs on Fra Angelico, or on the School of Painters of



LA RUE DU BOURG, CHARTRES.

Cologne; the gorgeous word-picture of daylight breaking many-toned into the darkness of the awakening cathedral makes many a bad quarter of an hour of tedium as if it had never been. M. Huysmans does not view the modern architect with any sympathy. Like the cultivated amateur in general, he is somewhat loftily contemptuous, but that is no reason why we should fall into the mistake of regarding him with a like want of appreciativeness.

A. E. STREET.

A STUDENTSHIP TOUR IN SPAIN.

By H. S. EAST [A.], *Aldwinckle Student 1896.**

UPPER PART OF CROSS, SAN ANTONIO, TARRAGONA.

THE Institute Travelling Student must always be somewhat influenced by his sense of responsibility, and this must of necessity have an effect upon his choice of subjects. At the outset he has to decide whether he shall take the advice so often pressed upon him by his friends of the Institute and prepare complete records of some more or less worthy building, study the historical significance and reasons for its existence, and its architectural influence, or merely sketch, measure, and otherwise note the more or less unimportant but suggestive façades, plans, and details to be found in almost any old city in Europe.

The former is doubtless thorough, but, like the study of any particular science (say political economy), it is apt to narrow and cramp the artistic faculties as opposed to the archaeological; whilst the latter, although discursive, is necessary for their general cultivation and training.

The method more generally followed, judging from the various yearly exhibitions of study by students who have returned, is the latter; and I must claim to be no exception to the rule. My efforts have been principally directed to placing on record the more unknown but nevertheless characteristic phases of Spanish art—not of any particular century, style, or character, but the work of men whose names have been far less enduring than their work—a difficult task, and one more likely to be successful in dreams than in sober reality.

Spain, although more generally known now than some years ago, had to me all the mysterious attractions of a practically unknown continent of art, and I crossed the border on the Mediterranean side, after a week's idling in the south of France, with dreams and visions of reproducing on paper

unknown and beautiful creations—dreams, alas! not fully realised.

The first town of architectural importance on this route is Gerona—a town, as I afterwards found out, typically Spanish, but recalling memories of the pleasant and, I must say, more attractive little towns of Italy. The Cathedral is the dominating and central feature of the place. Externally it promises little. The late façade, although proportioned on noble lines and approached by a fine flight of steps, is both coarse and uninteresting in detail and rococo in treatment. The interior is, however, a treasury of interest: the great nave, of splendid width, without aisles, is supported by most interesting side chapels; the purely Spanish arrangement of the *coro* in the centre of the church, although necessarily destroying the perspective to a great extent, possesses, however, some distinct attractions. The church contains some of the finest glass in Spain—the St. Michael in the great circular window at the east end is especially noteworthy—and some very interesting *rejas* and other metal-work.

Barcelona, my next halting-place, is the commercial capital of Spain, and the growth of the city and the enterprise of the citizens have almost completely swept away the ancient architecture, although some few of the new buildings are good in design. The Cathedral cannot be compared with Gerona, and has been and is being restored to a very great extent. The interior is exceedingly dark. The chief point of interest is the cloisters, with a beautiful fountain, and containing the sacred geese. The Church of Santa Maria del Mar has a very fine west front and interior, and is majestically and finely planned; some of the windows are filled with good glass.

From Barcelona to Tarragona the railway journey is very interesting; the glimpses of Montserrat are especially fine, and about sixteen miles from Barcelona is the celebrated Puerta del Diablo, the work of the Moors, with an enormous central arch in red stone; farther on is a beautiful wayside cross. Tarragona itself—I think principally famous for its wine—contains some very interesting work. The Cathedral tower, built of a beautiful red stone in a rather late Gothic period, is a fine mixture of solidity and grace. The Cross of San Antonio, set upon a slender pillar about eighteen feet high, with a very good pedestal, is situated in a charming little garden. Opposite is the Puerta de San Antonio, a very good Renaissance gateway with heraldic ornamentation. An exceedingly uncomfortable high

* The illustrations have been considerably reduced from the author's original drawings.

wind and dust storm prevented my drawing several things here. An excursion from Tarragona to the ruined Monastery of Poblet proved more saddening than stimulating. The buildings were wrecked and the statuary and carving defaced and destroyed by the mob during the last Carlist war. An excursion and stop or two on the way to Valencia fulfilled none of my dreams, and resulted in failures to find anything worthy of note.

Valencia, a city of towers and spires of a somewhat rococo type and reminiscent of Wren's City church spires, is very beautiful and interesting, especially when these picturesque outlines and fretted spires of red stone glow in the last rays of the setting sun. The Cathedral has a fine tower and some good pictures, but the latter were unfortunately veiled and could not be seen. The *Lonja*, or Exchange, was originally a beautiful Gothic building, but it is being rapidly restored to the detriment of the effect.

A cross-country route *via* Murcia and Baza to Granada—the latter portion by coach—seemed to promise a good field for research, especially Baza, described in Murray as a Roman and afterwards Moorish town, and containing several interesting items. Murcia, however, contains but a few beautiful old houses, and a Cathedral in which the very worst features of the Spanish Renaissance are embodied, and Baza nothing beyond the attraction of a rather evil-smelling and curious population.

The coach ride to Granada proved longer than the distance (75 miles) seemed to warrant. The first part of the journey through the night brought us to Guadix: a few minutes at the town in the early morning proved it to be of more interest than either of the two we had first passed through, but our travelling arrangements did not permit a stop. From Guadix the coach, drawn by eight mules, takes its route through some of the most gorgeous scenery in Spain. The snow-capped Sierras tower up on either side, and the whole succession of scenes is of the greatest grandeur and magnificence. The journey, however, repays most when Granada itself begins to appear below. How much superior to the ordinary arrival by train on the plains, I must leave to the imagination.

Granada, called by its inhabitants and army of guides the "City of Waters," seemed to me more a city of gardens; the best are those of the Generalife, the disposition of which, combined with the arrangement of levels, the various fountains and watercourses, and above all the views over Granada and the surrounding country, makes them a very paradise. The Alhambra, the presumed glory of Granada, is rapidly approaching a gorgeous newness caused by much restoration both of the plaster decorations and the colouring and gilding upon them. It will surely soon be more the admiration and study of the American photographic tourist than of the architect, unless the latter has a commission to build another

enormous "Palace of Varieties," and is in search of suitable material. Granada is, I think, the most beautifully situated town I have ever seen. Turn where you will, views of surpassing beauty meet the eye—on one side the Vega, a plain with its brown bare patches, its masses of dark green foliage, and its glittering silver-threaded river; on the other the brown and purple snow-capped Sierras that stretch away at the back of the town. The Cathedral is unfortunately not of the best period, although on very magnificent lines. The most interesting portion of it is the *Capilla Real*, approached from the north aisle of the Cathedral, but an independent foundation. Here are the elaborately carved tombs of Ferdinand and Isabella, a magnificently carved, painted and gilt *retablo*, and a superb *reja*. The Alameda in the town has a very good fountain, and in wandering about the streets many items of interest can be seen.

A few hours' journey brought us to Loja, a seemingly good stopping-place between Granada and Seville, but beyond a very curious and subtly designed fountain in the market-place and a poisonous inn, it has nothing to recommend it.

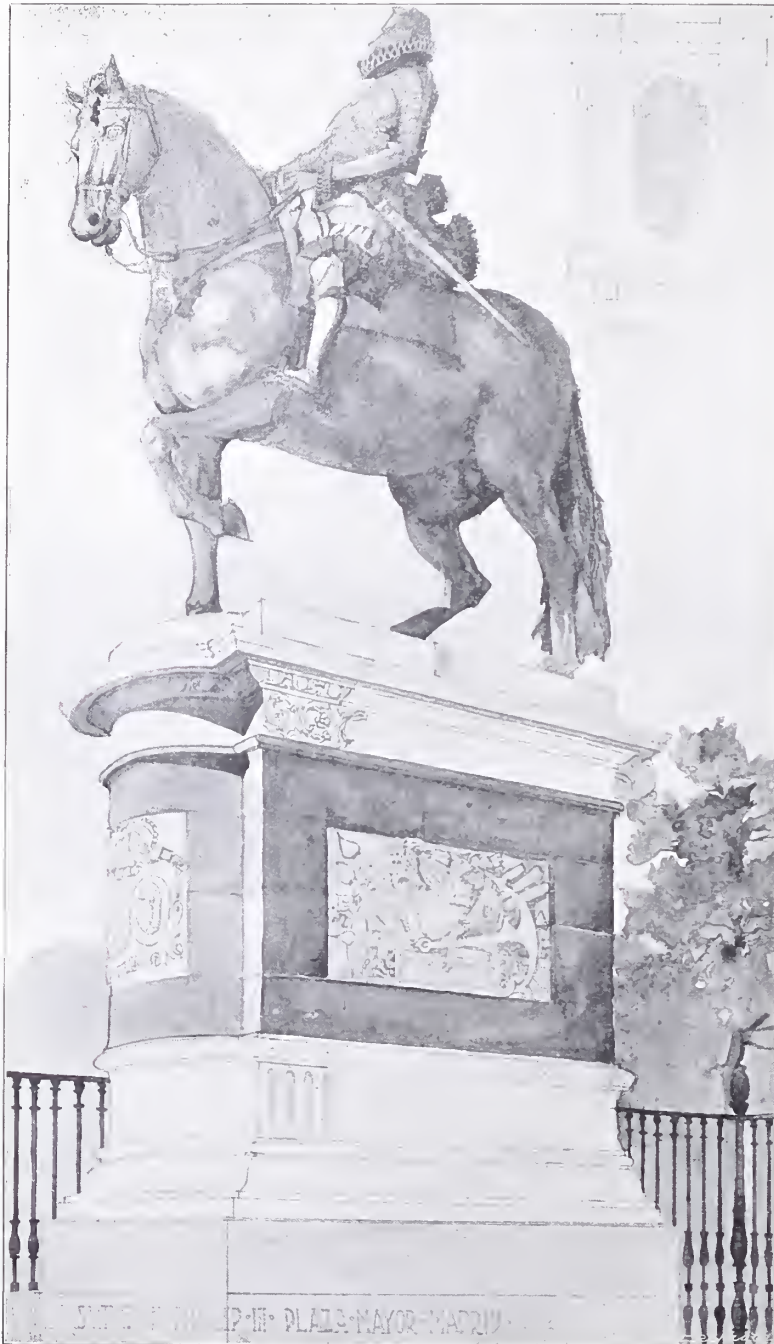
Seville, with its Cathedral, Alcazar, Casa de Pilatos, and many interesting churches, is peculiarly attractive and worth far more time and study than the limitations of an architectural student's tour permit. The Cathedral unfortunately seems as far off the complete internal restoration as ever, and very little idea of its magnificent interior proportions can be obtained, the mass of scientific shoring and scaffolding obscuring almost all the architecture. The famous Giralda tempted me to make a small sketch of it, although not from the usual point of view. The Alcazar contains some magnificent and gorgeously decorated apartments, but the gardens, garden pavilions, kiosks, and fountains were more attractive to me, and, although the architectural details and the materials employed are not of the finest, the gardens are very beautiful. The Casa de Pilatos (an imitation of Pilate's house at Jerusalem) contains some of the most beautiful wall tiled decorations in Spain; the effect on the staircase is particularly good. In the *patio* is a very subtly modelled fountain. The doorway of Santa Clara is a beautiful and elaborate example of Spanish Gothic. The Della Robbia medallions set in Spanish tiles and the alternate terminals and cherubs' heads have evidently been added at a later date. The picturesque towers of the Seville churches, decorated in lines of tiles of a beautiful blue, are everywhere in evidence, and I greatly regret that time did not allow me to make any studies of them.

From Seville to Cordova the country is flat and uninteresting beyond a glimpse of an occasional church or two. Cordova's interest lies chiefly in its mosque, the most complete example and finest type in Spain of the true Moslem temple. The countless arches and pillars give the interior an air of vastness and infinity, but the Renaissance

coro seems incongruous and out of harmony with the older work. The Patio de los Naranjos, with its beautiful fountain and characteristic

A weary night journey through the flat and somewhat bare plains of Spain, followed by a long wait at a country junction and another weary bit

of railway, landed me at Toledo. It is magnificently situated on the Tagus, the yellow-brown river encompassing almost the whole city and making it in ancient times an almost impregnable fortress. The views of the city from the winding road ascending to the town are particularly charming. Toledo Cathedral is one of the most famous architecturally in Spain. Externally the chief points of interest are the west front, with its fine tower, and the Puerta de los Leones, a classical screen with columns surmounted by lions with shields and railings between, masking the deeply recessed and elaborate Gothic portal. In the interior are many beautiful chapels, *retablos*, and *rejas*, the full glory of some being hidden owing to want of light. The *coro* is one of the most elaborate in Spain, with a wealth of marble and walnut carving. Toledo is rather rich in doorways of the peculiar transitional state between the Gothic and Renaissance style, with the heraldic ornaments conspicuously designed and architecturally fitted to the spaces they fill. A fine example of the later heraldic treatment is the Puerta Visagra, an illustration of which appeared in the present volume of the JOURNAL, p. 271. The Alcazar, a somewhat bald but tremendous structure of the later Classic style, is being largely restored. The most interesting features externally are the four picturesque towers at the angles. As the Alcazar is situated in the highest part of Toledo, these towers are veritable landmarks and look out over the



Andalusian loungers, attracts one, and is a direct contrast to the somewhat gloomy interior of the mosque. Over the broad and important Guadalquivir is a very fine bridge.

country for an immense distance.

A few hours' journey from Toledo brings one to Madrid, a city, to me, of surprises.

Madrid seems to be the most abused capital in

Europe, and consequently the stay there was looked forward to more as a penance than a delight; but, besides the incomparable pictures of Velasquez in the gallery and the Armeria, the town contains a few very interesting doorways and fragments of architecture, whilst in the Plaza Mayor is a bronze equestrian statue of Phillip III., as fine an example as can be seen anywhere, not excepting the *Colleoni* in Venice. The pedestal is unfortunately not quite worthy of the magnificently designed horse, rider, and trappings.

The Armeria contains the finest collection of ancient armour and kindred objects I have ever seen. Here is a complete and authentic suit worn by "El Gran Capitan," and many kingly suits of Milanese, German, and other make, all most elaborately chased, engraved, and otherwise ornamented.

The picture gallery, a modern building of not unworthy architecture, contains a very fine collection of pictures. The revelation, however, is the Velasquez collection. Amongst his subject pictures here is the famous "Capture of Breda," which, besides its fine composition and painting, characterises in the most marvellous manner the difference between the Spaniard and the Fleming. Besides these the gallery contains a good collection of Murillos and many examples of Titian and other famous masters.

From Madrid I journeyed to Segovia, *via* the Escorial. The Escorial gains mostly from its enormous size, but proved to be architecturally better than I expected. It is beautifully situated under the mountains, and is

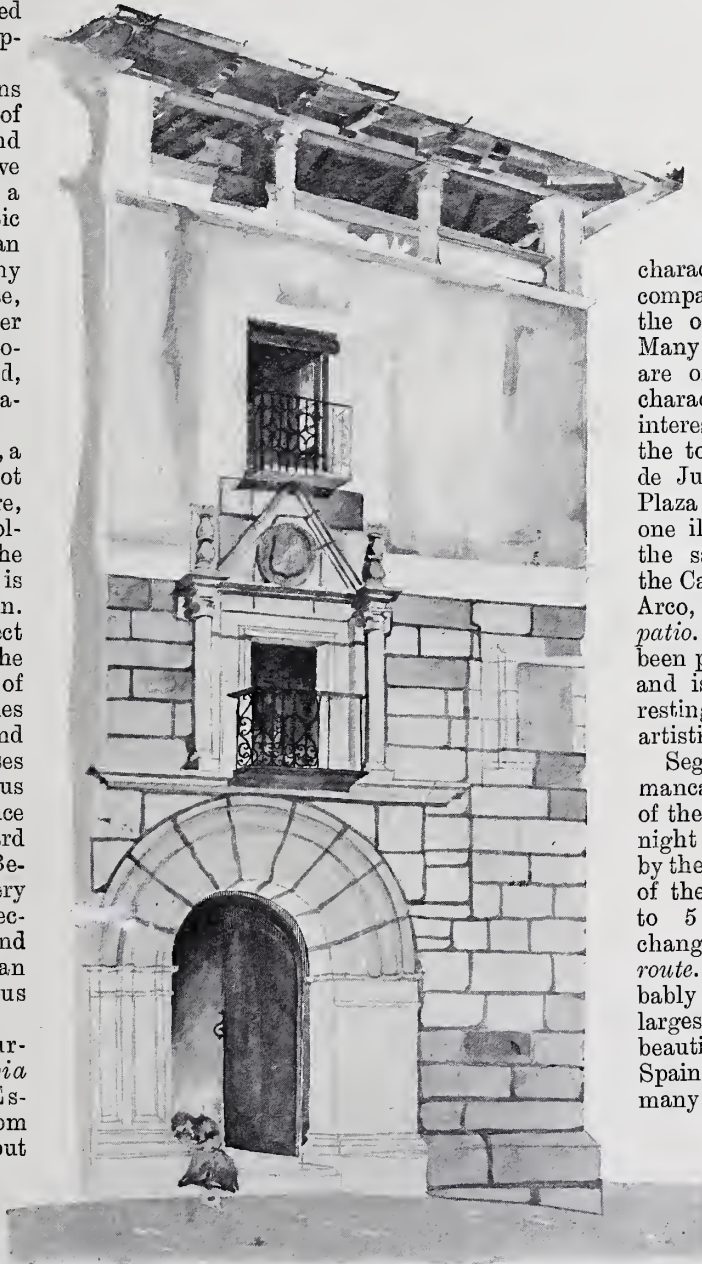
flanked with terraces laid out in a formal manner with box hedges.

Segovia is one of the most interesting towns in Spain, both pictorially and architecturally. A walk round the outskirts of the town reveals an endless succession of beautiful views and subjects for pictures. The buildings of the Renaissance period, lacking the overplus of ornament common to the plateresque work, gain enormously in dignity,

and are generally beautifully detailed. There is a curious lack of centrality about most of the work of this period here. The Cathedral is of a particularly florid late Gothic

character, not to be compared with some of the others mentioned. Many of the churches are of a Romanesque character. The most interesting houses in the town are the Casa de Juan Bravo, in the Plaza of that name, the one illustrated (also in the same Plaza), and the Casa di Marquis del Arco, which has a fine *patio*. The Alcazar has been practically rebuilt, and is now more interestingly situated than artistically beautiful.

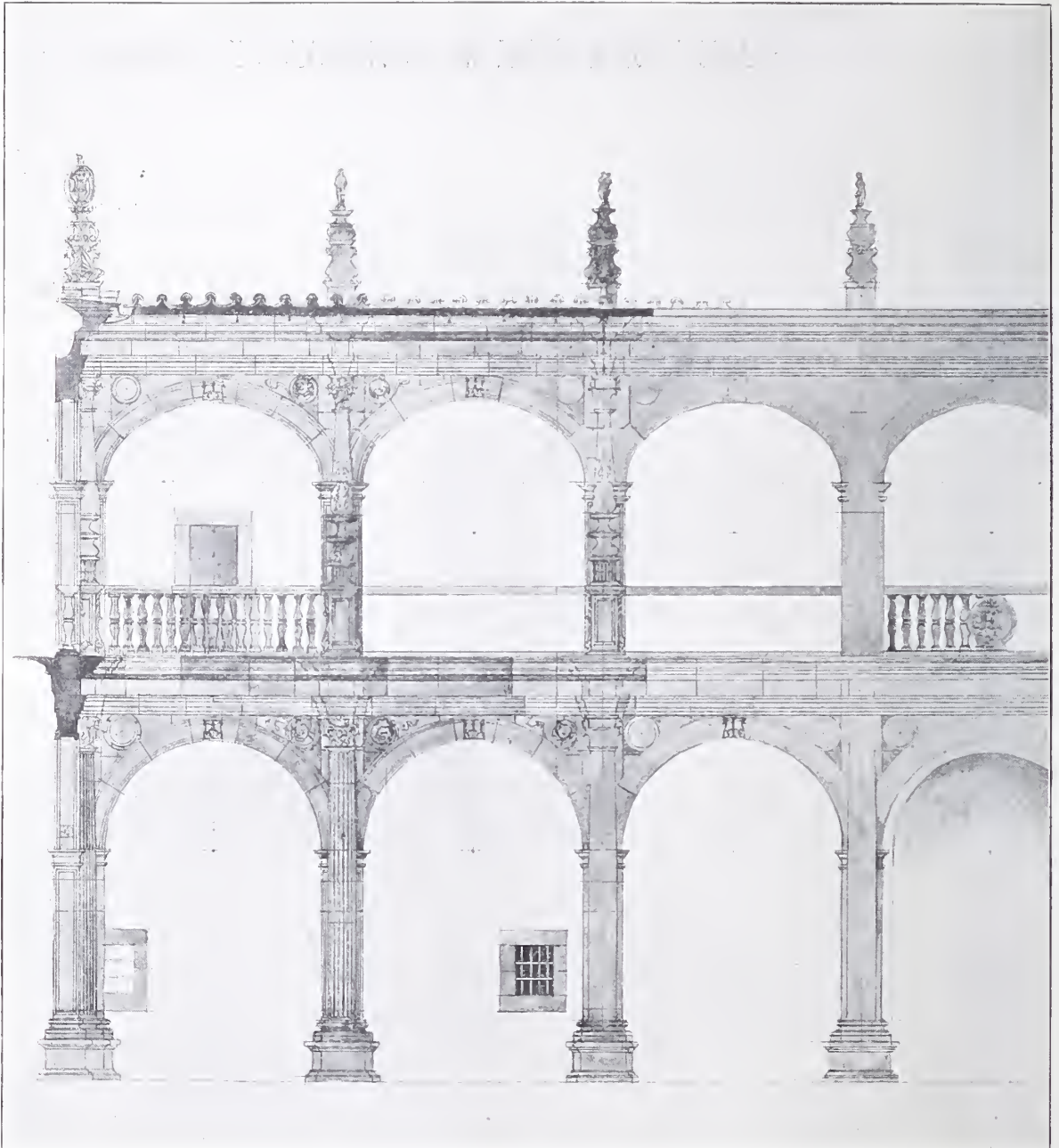
Segovia to Salamanca necessitates one of the typically Spanish night journeys caused by the extreme slowness of the trains—10 p.m. to 5 a.m.—with a change and a wait *en route*. Salamanca probably contained the largest proportion of beautiful buildings in Spain. Unfortunately many of the colleges were destroyed and reduced to shapeless masses of ruin by the French during the Peninsular War. Amongst



HOUSE IN SEGOVIA.

the most interesting that remain is the Irish foundation, illustrated by a geometrical elevation of one side of the square *patio* and a few details.

although Gothic, shows signs of the plateresque movement, and is generally of a very elaborate character. The interior is lofty and imposing ;



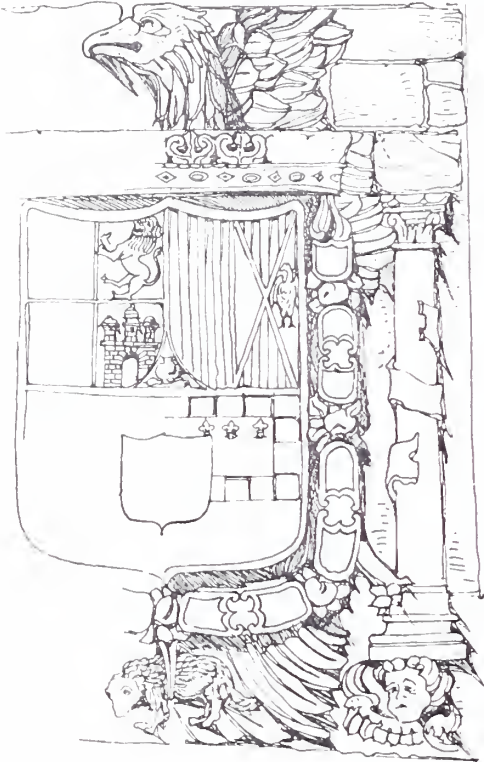
The students, who are delightfully Irish in their speech and bearing, now number only eight. The Cathedrals, old and new, and adjoining one another, are very interesting, particularly the east end and dome of the old church, a most beautiful example of Romanesque. The new Cathedral,

the Dorado Chapel, on the north side, contains some fine painted decoration and tiles, and carved, painted, and gilt sculpture. Salamanca contains some very beautiful old palaces and houses, and nearly every street presents something of interest. Many of the finest, such as the Palacio del Conde



de Monterey and the Casa de las Conchas, have been illustrated at various times, and are consequently familiar to most of us.

From Salamanca to Zamora is but a short journey, but only to be accomplished either in the small hours of the morning or late at night. Zamora Cathedral is one of the best and most complete examples of the Romanesque in Spain. The west tower, of a massive character, and the central dome group picturesquely from the river.



ARMS ON THE BRIDGE HOUSE, ZAMORA.

The interior harmony is disturbed by the late additions. The bridge is picturesque, and the bridge-house a striking feature; the arms illustrated are situated over the entrance to the bridge from the country. A photograph I had discovered in Toledo caused me a fruitless hunt for a very beautiful transitional house, but after some hours' searching and inquiries I found it had been pulled down, along with several interesting old gateways.

Murray's responsible and accurate guide-book suggested Toro to me—his circumstantial account of the painted statuary, &c., to the west doorway of the Colegiata proving a stronger attraction than that of Astorga. Alas! the disappointment was immense, and my stay at Toro will be remembered more on account of the electrical engineer to the town, my fellow-countryman, than from any architectural benefits derived. The *patio* of the Colegio de los Escolapios is of very suggestive design, with carvings of a somewhat

early character. The little grille illustrated is a good example of the characteristic finish to the lower windows of the houses. The arms on the shield are those of the town, and seem to have inspired the poster of an enterprising company who claim to supply the world with a strength-producing food.

The railway to Valladolid goes through some very interesting country and varied scenery. A stay of a few hours only at Valladolid enabled me to see most of the town, which is very much more commercial and modern than most others in Spain. The incomplete Cathedral is heavy and not very interesting, but in the town are several beautiful and suggestive façades, doorways, &c.

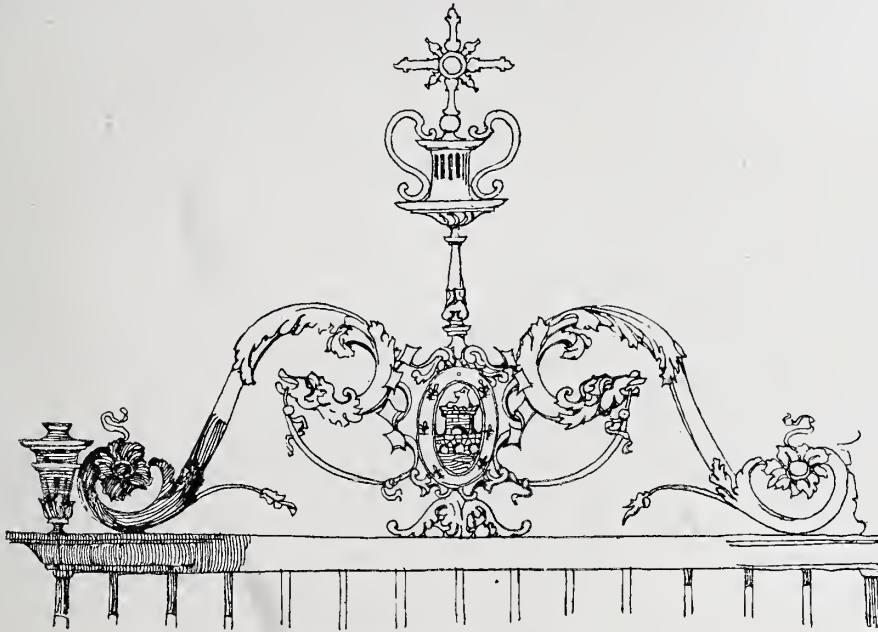
Palencia, my next stop after Valladolid, has a very fine Cathedral and some good churches. The Cathedral externally is well worthy of study, and shows a refreshing restraint in the matter of elaboration. In the interior are several interesting chapels and details, but unfortunately in most cases in such positions that darkness overshadows them, and makes studied drawings of any impossible. The staircase to the cave of St. Antolin (the patron saint) is beautifully carved in low relief of an early Renaissance character.

After Palencia came Burgos, my last stop of architectural importance in Spain. Burgos Cathedral, perhaps the best known in Spain, is of a very elaborate and magnificent character; the open lace-like spires and elaborate central lantern, of a grey stone, catch the eye from almost every corner of the town and country side. No less richness of detail and ornament is displayed in the interior. Among the most striking details are the stalls of the *coro*, of walnut elaborately carved, with seats inlaid in box, and the double staircase leading down from the door of the north transept to the body of the church. Burgos contains several interesting houses of the Renaissance type, particularly the Casa de Miranda and the adjoining houses in the same street. About two and a half miles from the city is the Cartuja de Miraflores. The church, as is usual amongst the Carthusians, is divided into three portions; the stalls are very well carved, those in the *coro* being late Gothic and those in the ante-chapel Renaissance in character. The most striking feature, however, is the alabaster monument to Juan II. and his wife, Isabella of Portugal—a most beautifully carved and sculptured sepulchre. The recumbent effigies of the king and queen in their state robes are particularly beautiful. About two miles in another direction is the Hospital del Rey, the atrium of which has a fine entrance arch profusely decorated with heraldic ornaments, terminals, and medallions. The museum in the old gateway to the town has several statues and tombs of interest, but the most valuable exhibit is the bronze altar frontal, of a Byzantine character, from the Monastery of Silos. The front is inlaid in enamel

of the most brilliant colouring, with figures of the twelve Apostles and a seated figure of Christ in the centre, flanked by the signs of the Evangelists.

From Burgos, after an excursion to Loyola,

the birthplace of the founder of the Jesuits, taken at the instance of my friend and companion, I journeyed homewards by way of Bayonne, Lourdes, Toulouse, and Bordeaux, and thence by steamer to Southampton.



TOP OF A WINDOW GRILLE, TORO.

THE LATE CHARLES GARNIER,

Hon. Corr. M.; Royal Gold Medallist 1886.

The President has received the following letter and enclosures from M. Charles Lucas [*Hon. Corr. M., Paris*], in response to a request to write for the JOURNAL a short notice of the late M. Charles Garnier :

Paris, 17 août 1898.

A Monsieur G. Aitchison, R.A., Président de l'Institut royal des Architectes britanniques,—

MONSIEUR LE PRÉSIDENT ET CHER MAÎTRE,—
Le Secrétaire de l'Institut royal des Architectes britanniques, M. W. J. Locke, veut bien me demander de lui envoyer une courte notice nécrologique sur notre regretté confrère M. Charles Garnier pour le numéro du 27 août du JOURNAL de cet Institut.

Je ne saurais me dérober à un tel devoir qui est pour moi un grand honneur ; mais, faute du temps nécessaire pour résumer, comme il conviendrait, les principaux titres de M. Charles Garnier au souvenir durable des architectes présents et à venir, permettez-moi de rappeler seulement à nos confrères anglais quelques incidents de la carrière de mon éminent confrère français,

incidents tout à son honneur et aussi à l'honneur de l'Institut royal des Architectes britanniques.

Veillez, Monsieur le Président et cher Maître, agréer l'expression de mes sentiments respectueux et dévoués.

CHARLES LUCAS.

Avec ce louable éclectisme qui distingue l'Institut royal des Architectes britanniques et qui lui fait, sans distinction aucune de nationalité, rendre hommage à tous les architectes et à tous les archéologues qui marquent par leurs œuvres une étape en avant dans la route aujourd'hui si frayée de l'art ou de la science de l'architecte, cet Institut avait, dès 1867, appelé à lui, comme *membre honoraire et correspondant*, M. CHARLES GARNIER, l'architecte du *Nouvel Opéra de Paris*.

En effet, cette Compagnie, la première parmi les Sociétés d'Architectes du monde entier, voyant alors se réaliser, au moins dans ses formes extérieures, le grandiose édifice que promettait le projet classé premier dans le brillant concours international à deux degrés de l'année 1860, s'enquit peu de l'âge relativement jeune de son auteur, se disant probablement que la Grèce antique lui eût élevé une statue et qu'elle eût compté son monument au nombre des sept merveilles du monde.

Au reste, M. Charles Garnier n'était déjà plus en 1867, ni même dès 1860, un inconnu pour le Conseil et pour les membres de l'Institut royal des Architectes britanniques ; car un des fondateurs de cet Institut, alors son secrétaire honoraire pour l'étranger, M. le Professeur Thomas Leverton Donaldson, de vénérée mémoire, avait, dans ses courses infatigables au travers du bassin méditerranéen et plus tard à Paris, rencontré, à partir de 1849, M. Charles Garnier, alors pensionnaire de l'Académie de France à Rome et, l'un des premiers, M. Donaldson avait dit à ses compatriotes, toujours si épris d'antiquité hellénique, tout le charme du projet de restitution, si brillant d'une judicieuse polychromie, du *Temple de Jupiter panhellénien de l'île d'Égine*, cette œuvre qui termina magistralement en 1852 les études de pensionnaire du Gouvernement français poursuivies pendant quatre années par M. Ch. Garnier.

Et puis, comme pour les mariages d'amour que préparent souvent de longues fiançailles dont plus tard on se redit avec attendrissement les moindres incidents, M. Charles Garnier n'avait-il pas eu, en fait, la gracieuse souveraine anglaise pour premier client lorsque, en 1855, il avait collaboré, pour deux aquarelles que lui avait commandées Victor Baltard, alors Directeur des Travaux d'Architecture à la Préfecture de la Seine, à un *Album de Vues de l'Hôtel-de-Ville de Paris*, offert à Sa Majesté la Reine Victoria en souvenir d'une fête qui lui fut donnée dans ce Palais Municipal.

Nous avons comme garant de cet incident de la belle carrière, alors à son aurore, de M. Charles Garnier, cet artiste lui-même qui l'a rappelé, avec grande émotion, lorsque, au zénith de cette même carrière et alors célèbre entre tous, il vint, en 1886, recevoir dans la grande Salle des Séances de l'Institut et des mains du regretté Président, M. l'Anson, la *Royale Médaille d'Or*, accordée par Sa Majesté la Reine Victoria, cette marque insigne de consécration du talent d'un architecte ou du savoir d'un archéologue.

Aussi le *Tout-Paris intellectuel*, celui qui affecte volontiers le *nil admirari* du poète latin, mêlait-il un certain étonnement à son respect quand, il y a quelques jours, se découvrant devant les restes de Charles Garnier, il remarquait sur le coussin des décorations du grand artiste, la juxtaposition, insolite et jusqu'ici unique, de la grande médaille d'or de l'Institut royal des Architectes britanniques et de la plaque de Grand Officier de la Légion d'honneur, grade auquel le Gouvernement de la République française promut M. Charles Garnier en janvier 1895.

Mais là encore s'éveille à l'esprit des architectes des deux nations française et anglaise, le souvenir de l'affectueux échange de félicitations dont M. Charles Garnier fut l'objet : je veux parler du chaleureux toast que lui porta, au nom de ses confrères anglais, à la fête organisée en l'honneur de ce succès sans précédent d'un archi-

tecte français, notre si aimé et tant regretté confrère William H. White.

Lorsque, s'exprimant en français, le délégué de l'Institut Royal eut dit les sentiments de ses confrères anglais et que M. Charles Garnier, dans une de ses brusques étreintes qui rendaient si bien les élans de son cœur, eut embrassé M. W. H. White, l'enthousiasme fut au comble et M. Charles Garnier put, en se répétant alors sans le moindre doute ce qu'il avait pensé vingt-huit ans auparavant, lors de sa nomination de membre honoraire et correspondant de l'Institut royal des Architectes britanniques, M. Charles Garnier put se dire " *qu'il avait pris rang—et quel rang ? le premier— parmi les architectes d'Europe.*"

Ces souvenirs rappelés, il convient, non plus pour les *Fellows* de l'Institut Royal qui ne peuvent ignorer la carrière de M. Charles Garnier, mais pour les *Associates* appelés à venir un jour grossir les rangs des premiers, de transcrire quelques brèves notes que mon regretté confrère a bien voulu me donner, il y a quelque temps, pour une publication contemporaine, *La Grande Encyclopédie*,* notes auxquelles j'apporte seulement de légers et indispensables remaniements.

"GARNIER (Jean-Louis Charles), architecte français, né à Paris le 6 novembre 1825. Elève de l'École de dessin et de mathématiques, de Lévêil, de Lebas et de l'École des Beaux-Arts, M. Garnier remporta le premier grand-prix d'architecture en 1848 sur un projet de Conservatoire des Arts et Métiers, et, comme pensionnaire de l'Académie de France à Rome, adressa de nombreux envois parmi lesquels il faut citer les suivants : études sur le Forum de Trajan à Rome, état actuel du Temple de Vesta à Tivoli, relevé du Temple de Sérapis à Pouzzoles et, outre quelques dessins de monuments de la Renaissance italienne, la restitution, en onze feuilles de dessins et un mémoire, du temple de Jupiter panhellénien à Égine (Grèce). Ce dernier envoi fut des plus remarquables, autant peut-être par l'Académie des Inscriptions et Belles-Lettres que par l'Académie des Beaux-Arts, comme reproduisant après d'heureuses découvertes, dans tous ses détails et avec une large part faite à la polychromie, le temple de l'architecture hellénique du VI^{ème} siècle le plus complet et le plus voisin de la perfection. Après un voyage à Constantinople et dans l'Italie méridionale et la Sicile où il releva, pour M. le duc de Luynes, les monuments datant dans ces deux pays de la dynastie angevine, M. Garnier fut, à son retour en France, attaché comme auditeur au Conseil général des Bâtiments civils, nommé sous-inspecteur des travaux de restauration de la Tour Saint-Jacques sous la direction de M. Ballu, et devint bientôt architecte d'une des sections (V. et VI. arrondissements) de la ville de Paris ; mais il ne devait pas tarder à voir

* *La grande encyclopédie, inventaire raisonné des sciences, des lettres, et des arts.* Paris. Tome xviii. in-4° (en cours de publication).

s'ouvrir le plus brillant avenir d'artiste dès le concours édicté, à la fin de 1860, pour la construction du Nouvel Opéra de Paris. En effet, de ce concours à deux épreuves, la première, sur esquisses à laquelle prirent part cent soixante-et-onze concurrents de toutes les écoles et dont quelques-uns étrangers, et la seconde, sur projets rendus et réservée aux cinq lauréats de la première épreuve, M. Garnier sortit classé le premier, à l'unanimité des membres du jury appartenant à l'Institut et au Conseil général des Bâtiments civils, et dès lors, pendant quinze années surtout, jusqu'à l'inauguration de l'édifice en 1875, et même pendant le restant de sa vie, il ne cessa de donner tous ses soins à la conception, l'exécution, la décoration et la machinerie de cet immense théâtre sans précédent et sans pareil dans les temps modernes, par ses dispositions, son allure originale et sa richesse, qui a nom l'Opéra de Paris. Malgré la place considérable que tint ce grand travail dans la carrière et dans l'existence de M. Garnier, et malgré aussi le temps qu'il dût consacrer à ses fonctions officielles de membre puis d'inspecteur-général et de vice-président du Conseil des Bâtiments civils, de membre du Conseil supérieur des Beaux-Arts, de Vice-Président du Conseil d'Architecture de la Préfecture de la Seine, de membre ou Président de nombreux Jurys de Concours et d'Expositions nationales et internationales, de membre de l'Institut et de collaborateur du Dictionnaire de l'Académie des Beaux-Arts, M. Garnier, qui fit reconstruire une première fois le magasin de décors de l'opéra rue Richer et une seconde fois près la station de Courcelles du chemin de fer de Ceinture, était aussi l'architecte du Conservatoire de Musique et de Déclamation pour l'agrandissement et la reconstruction duquel il fit plusieurs importants projets. M. Garnier est de plus l'auteur de fort intéressantes constructions privées, parmi lesquelles : le Cercle de la Librairie dont, il y a deux ans, il augmentait les salles de réception et de travail avec le concours de M. Cassin-Bernard, un de ses plus dévoués collaborateurs ; une Maison à loyer avec hôtel pour la famille Hachette ; les panoramas Valentino et Marigny, à Paris ; le grand Observatoire et la villa Bishoffseim, à Nice ; les Salles de concert et de jeu, à Monte Carlo ; des villas, dont la sienne familiale, l'hôtel du Belvédère ; l'église et l'école communale, à Bordighera (Italie) ; les casino, bains et hôtel de Vittel (Vosges) ; la villa Sarcey, à Rosenthal et l'église de la Capelle en Thiérache ; de nombreux tombeaux dont ceux de Bizet, d'Offenbach et de Victor Massé, à Paris, et celui de la famille De Luynes (en collaboration avec Fr. Debacq) à Dampierre (Seine-et-Oise) ; enfin on dut à M. Garnier, architecte-conseil de l'Exposition universelle de Paris en 1889, les charmantes improvisations, malheureusement éphémères, qui retracèrent avec tant d'ingéniosité, sur le bord de la Seine au Champ de Mars, les princi-

paux types dans le passé de l'Habitation humaine à travers les âges. M. Charles Garnier, honoré de nombreuses médailles d'or, puis de diplômes d'honneur, de la grande médaille des beaux-arts de la Société d'encouragement et de la royale médaille d'or de l'Institut royal des Architectes britanniques, chevalier, officier, commandeur puis grand-officier de la Légion d'honneur, officier de l'Instruction publique, commandeur et officier de plusieurs ordres étrangers, était membre de l'Institut de France et ancien président ou membre honoraire de la Société Centrale et de la Caisse de Défense mutuelle des Architectes, de la Société nationale des Architectes de France et de nombreuses Académies et Sociétés de Beaux-Arts françaises et étrangères. On lui doit, outre de fort nombreux rapports ou articles critiques concernant l'architecture, l'archéologie ou les beaux-arts et aussi de nombreuses fantaisies versifiées, les ouvrages suivants : *Restauration des tombeaux des rois angevins en Italie* (54 pl. in-fol.) ; *A travers les Arts* (Paris, 1868, in-12°) ; *le Théâtre* (Paris, 1876, in-8°) ; *le Nouvel Opéra* (2 vol. in-fol. de planches et 2 vol. de texte) ; *l'île d'Égine, Restauration du Temple de Jupiter Panhellénien* (gr. in-4°, texte et pl.) ; *l'Observatoire de Nice* (texte et pl. gr. in-4°) ; et *l'Histoire de l'Habitation*, en collaboration avec M. Amman (1892, in-4°, pl. et nombr. gravures).—CHARLES LUCAS."

REVIEWS. LXXVII.

(202)

SPECIFICATIONS.

Specifications for Building Works and How to write them : A Manual for Architectural Students. Builder Student Series. By F. R. Farrow, F.R.I.B.A. Sm. 8o. Lond. 1898. Price 3s. 6d. [D. Fourdrinier, "Builder" Office, 46, Catherine Street, Strand, W.C.]

The author of this manual for students is to be congratulated on having the courage to pass a severe judgment on those members of our profession who, for some reason best known to themselves, carry out the work entrusted to them by their clients without in any way controlling the very important part of the work for which they are paid, viz. that of Drafting the Specification. As he truly says, if the architect has no voice in the quality of his work, apart from the design, how can he expect his intentions as to quality to be carried out! The result of this, I feel sure, is becoming lamentably visible in many works which are, to use the author's own word, "discreditable," and far removed from the intention of the client, and possibly of his architect ; and were it not that there are intelligent contractors and intelligent foremen, the quality of work would deteriorate still more. But I rather fear that the perusal of the manual by any ordinary student will only create dismay, as he

could not expect to collect such a mass of information for any work he may have the good fortune to carry out, and it would have been much more useful if it had been made far more simple; but, whether simple or elaborate, care should have surely been taken not to give incorrect information in any form whatever.

It may seem ungracious to refer to a few out of several discrepancies, but the truth must be told in one direction as well as in another. For example: "cement mortar" is given as one of cement to two of sand: this is very wasteful. One of cement to six of sand will make excellent work, as I have proved in numerous buildings. Again, flues are suggested to be $14'' \times 9''$: they need not be more than $9'' \times 9''$ excepting for kitchens, where they should be $14'' \times 9''$; $14'' \times 14''$ is quite unnecessary; terra-cotta pipe lining is better still.

In describing arches there should be directions given as to the adhesive material to be used, but there are none. Is it not unwise to give the largest scantling for timber joists as $9'' \times 3''$? Pugging as sound deadening is very indiscreet, when slag-wood and felt are available, and no risk is run of future dry-rot. Drips in gutters are given as $2\frac{1}{2}''$ deep, and I doubt if we could find a $2\frac{1}{2}''$ drip anywhere; they are used $1\frac{1}{2}''$ and $2''$, and very frequently the former, but in good work $2''$ should be adopted: this is abundant and avoids excessive lead-work. In describing laths, the most important words "free of sap" are omitted—those in good practice know the importance of this.

The directions for laying the lead-work of gutters and flats are anything but clear. The author may believe in the method adopted by all practical plumbers, or in the advice given in the books of reference, which are usually at variance with practical work.

Is it not unwise to tell students that quarter partitions must be $4\frac{1}{2}''$ thick, when they need not be except they are for brick nogging? Provision for exclusion of "sap" in deal and oak work is indispensable, but it is very vaguely treated of.

In practice it is better to iron bush sash pulleys than to brass bushr them as recommended by the author.

Any cesspool at the outlet of two gutters only $6''$ deep would deluge any building in a storm; and what harmony can there be between a cesspool $8'' \times 8'' \times 6''$ deep with a $4''$ outlet?

EBENEZER GREGG.

(203)

AN ELEMENTARY TEXT-BOOK.

Elementary Architecture: for Schools, Art Students, and General Readers. By Martin A. Buckmaster, Art Master, Tonbridge School; Art Examiner, &c. So. Oxon. 1898. Price 4s. 6d. [The Clarendon Press, Oxford.]

We have not been very favourably impressed with this newest addition to the crowd of text-

books that are being so continuously produced. Few things may seem easier, but are really more difficult, to write than a good text-book, the task demanding one of two conditions—either great learning accompanied by wide views and a power of generalisation, by no means common; or else an absolute mastery of some one subject, so thorough that, in writing upon it, the author cannot fail to present the whole of the facts in a complete and lucid manner.

Obtaining a text-book produced under such conditions, some revision from time to time in the light of new discoveries, and in the direction of an elimination of merely personal theories, is all that is really wanted, and a sound tradition in teaching for two or three generations of students would be a positive gain. Speaking candidly, however, of the bulk of modern text-books, it may be said that they are only guides to examinations, and their usefulness and selling power cannot but be judged from that point of view. It is impossible to believe that for real teaching most of them are of any service whatever, and not a few must be positively harmful.

It is the cheap comprehensiveness of the type that is so distasteful, and to meet this craze it may, in time, come to be accepted that no man has an indisputable right to treat of a subject of which he has no personal knowledge. This might seem to be a provision against an impossibility; but the comprehensive writer is not to be deterred by any such obstacle as that, and as everyone has been able to write a dictionary, after Johnson, so the all-embracing treatise is quickly carved out of its immediate predecessor.

Formerly the author of one of the most amusing compendiums of historical architecture could claim in his preface that he was serving up the contents of 300 works, to the great economy and profit of the reader; but there is no time now for study on any such scale as that, the obligation even to read the suggested ideal of a hundred books would be calculated to suppress the text-bookist of to-day.

The author of *Elementary Architecture* has, we believe, a considerable enthusiasm for English mediæval work, and it is to be regretted that the whole of his 133 pages are not devoted to that subject. On Roman and Greek architecture he wastes twenty-nine pages in reciting the usual information as to the Orders which the modern examination appears to demand. There is no reason why the facts here repeated should not be accurately given, as we will assume that they are; but that this is a true presentation of the architecture of the Greeks and Romans we entirely deny.

In the same manner, the twenty-one pages given to work dating from Tudor times to the present day in England seemed to us to be of a very misleading tendency.

It would occupy too much space to give quotations, but the style of treatment of the great Renaissance architects irresistibly reminds one of the M.A.P. column, as it has come to be styled, of an evening luminary.

"Sir John Vanburgh (1666-1726) also shared in the architectural activity of this period, chiefly designing country seats for the nobility. His principal works are Blenheim Palace, built for the Duke of Marlborough, and Castle Howard in Yorkshire, for the Howard family. These edifices are distinguished by a heavy classical character, without any relief from ornamental classic details. Blenheim Palace is one of the largest buildings of the Renaissance period."

Having thus disposed of Vanburgh, we are told that

"A greater architect and artist than either Vanburgh or Hawksmoor is to be found in James Gibbs (1682-1754). He erected two of the handsomest churches in London, worthy to rank beside Wren's masterpieces in the city."

Of these, here is a critical appreciation in modern style :

"St. Mary-le-Strand is also a very fine building, not so bold in effect as St. Martin's, and rather overwrought in detail, which gives it a 'cut up' (*sic*) appearance."

St. Paul's, Covent Garden, however, appears to be more satisfactory :

"It is naturally plain and severe, the terms of the contract stipulating for the maximum of room with the minimum of cost. The architect may fairly claim to have satisfied the required conditions in this well-proportioned, but bald and cheerless building."

We should like to see that contract in present-day application if the author would guarantee an equivalent result.

Naturally there is no room to deal with modern architects, but we learn that

"Sir Charles Barry (1795-1860) was the most successful among architects of this time who chose the Tudor style as the best adapted to modern requirements. His great work is the Houses of Parliament, which must be acknowledged to be the finest building produced in this or any other country during the Gothic revival."

Contrasted with this confident opinion is the author's cautious handling in the following, which is worth quoting, not from any greater intrinsic value than the former, but because it illustrates the author's point of view :

"The last architect we have to mention is George Street (1824-1881), whose final and most ambitious work was the Law Courts in London. This building has been subjected to much adverse criticism. Our illustration [*a poor photo.*] will help the reader to form an opinion for himself of the appearance of the exterior from one point of view. It may be doubted if this building will ever add much to the movement for the revival of Gothic architecture in England."

As the writer ends his book at this point, we can only conclude by hoping that he does not really leave the students with whom by his position he is brought into contact, in the attitude towards architecture, even elementary, that this last paragraph displays.

We fear, however, that this is the tendency of

the bulk of the book—the seventy-three pages of Parker-like examination of English Gothic, wherein we have not been able to detect that the author, for all his zeal and evidences of study of old work, has as yet grasped the structural signification of what he has seen, or got beyond the conception of building as a compilation of features that can be classified into periods.

ARTHUR T. BOLTON.

(204)

A MUNICIPAL ENGINEER'S HANDBOOK.

The Municipal and Sanitary Engineer's Handbook. By H. Percy Boulnois, M.Inst.C.E., Fel. San. Inst. Third Edition, revised and enlarged. 80. Lond. and New York, 1898. Price 12s. 6d. net. [*E. and F. N. Spon, Ltd., 125 Strand; Spon and Chamberlain, 12, Cortlandt Street, New York.*]

In the opening chapter of this book Mr. Boulnois brings out very clearly the omniscience required at the present day of the municipal engineer or town surveyor. In former times the town surveyor or surveyor of a local board was in many instances anything but qualified for the post. At present, for the most part, he is not only qualified but is expected to possess an intimate acquaintance with many branches of engineering and architecture, the thorough knowledge of one of which is often the study and work of a man's professional lifetime. It is only fair to say that now in a very large number of places the office is filled by exceedingly competent and well-qualified men.

The chapters of the book which follow deal with most of the subjects which come within the surveyor's purview, from roads to electric lighting and cemeteries, and are full of useful information.

Of all the various kinds of materials used for making the surfaces of roads in towns, the author gives the palm to wood-paving. He refutes the objections to it that it absorbs moisture and smells offensively. It may be difficult to agree with him on this point, except, perhaps, where hard woods such as Jarrah or Karri have been used. The softer woods undoubtedly do retain moisture, and it will frequently be found that in damp, muggy weather fog will be met with rising from their surfaces when the atmosphere is quite clear on the impervious asphalted surface. On the question of maintenance of paved surfaces, Mr. Worby Beaumont, M.Inst.C.E., in his presidential address to the Society of Engineers in January last, demonstrated that the destruction of road surfaces is due to the hammering of the hoofs of horses. The extension of the use of motor cars would without doubt immensely reduce the wear-and-tear and prolong the life of the surface. Asphalt, which, except for the danger to horses, is the best material, would then become universal in towns.

In tuning to the chapter on sewage disposal, a reference is found to nearly all the processes which

have been tried with more or less success for the treatment of sewage, except the latest, viz. "bacterial" treatment. Local authorities have during the past year or two been so much impressed by the satisfactory results obtained by Mr. Dibdin at Barking and Sutton that they have eagerly turned their attention to it in the hope of finding an economical and final solution of the great difficulty. The Royal Commission on Sewage Disposal now appointed will probably give a large amount of its time to a consideration of this phase of sewage treatment.

The important subject of sewer ventilation occupies a chapter in the book, and the various plans which have been invented for improving it are described. There is, however, one principle in regard to it which should not be lost sight of, and that is, that no obstruction should be placed in the opening through which the air is intended to pass. It has been shown by experiment that "air destructors" placed in the ventilating shaft or column only retard the passage of air. The freer the passage and the greater the number of openings in the sewer, the less will be the risk of the air becoming foul. The practice of providing tall shafts and columns for ventilating sewers instead of opening gratings at the surfaces of the roads is increasing.

Everyone will agree with the author in his remarks on the advantage of public abattoirs and in his objections to private slaughterhouses. There is, as he says, unfortunately no law by which private slaughterhouses can be abolished. He shows some useful sketches of the arrangements of abattoirs.

The author's remarks on the choice of sites for cemeteries are well worth perusal. As illustrating the necessity for careful examination of the ground, a case may be mentioned of a piece of land having been selected for a cemetery, the subsoil of which consisted of fine sand with a narrow band of clay across one corner of it. The place seemed very eligible; the ground was laid out, and a chapel was built in the summer time. But in the following winter there were seven feet of water in the basement of the chapel, the water coming, as it was afterwards found, from a spring about thirteen feet below the surface. The graves would have been six feet deep in water in winter time. Drainage cured the evil, but the case justifies the author's warning as to the care required in selecting the ground.

Although enumerated in the list of duties which fall to the lot of the municipal engineer or town surveyor no surprise will be felt at the omission of a chapter on water supply. The methods of obtaining and supplying water to suit the circumstances of different towns are of course so various that they could not be dealt with in a single chapter.

The foregoing remarks will give some idea of

the scope and value of this edition of Mr. Boulnois's book in regard to all questions relating to public health, and the officials for whose use it is intended cannot fail to find it useful.

RICHARD F. GRANTHAM [H.A.],
M.INST.C.E., F.G.S.

(205)

ARCHITECTURE IN POETRY.

Architecture among the Poets. By H. Heathcote Statham.
With Illustrations by the Author. 8s. Lond. 1898.
Price 3s. 6d. [B. T. Batsford, 91 High Holborn.]

In recent years the Poetic Garners have been frequently sifted for grains of fancy of a distinctive kind. Poetry has been specialised, as it were. It may be that this sifting arises from a love of comparative analysis, or from the scientifically critical spirit of our age which would dissect everything, and often seems to delight more in the details than in the broad aspect of things. Be this as it may, we have had *Poetry of the Seasons*, *Poetry of Love*, *Poets' Jest*s, *Poetry of Flowers*, *Poets on Poets*, *Poems of Places*, *Poems of Heroism*, and other special selections too numerous to mention. Mr. Ruskin has also given us among his works *The Poetry of Architecture*. It is therefore fitting, and in accordance with the course of things, that we should be favoured with *Architecture among the Poets*. If any particular expression of Poetry as regards Art is worthy of special notice it is indeed that relating to our own, for architecture is at the head of the arts, and Art has been called "the wine of life." Good wine needs no bush, neither does Mr. Statham's book require any excuse.

Emerson has recognised a relationship between Poetry and Architecture, and in a piece called *The House* has given the palm to the muse as a constructor. He says:

"There is no architect
Can build as the muse can;
She is skilful to select
Materials for her plan;
Slow and warily to choose
Rafters of immortal pine,
Or cedar incorruptible,
Worthy her design.

* * * * *

"She lays her beams in music,
In music every one,
To the cadence of the whirling world
Which dances round the sun."

Mr. Statham's work is a collection of some articles on the subject which appeared years ago in *The Builder*, which articles, having been revised and added to, are presented now as a continuous essay on a chronological basis. The author says early in the book that

"Poetical references to architecture, even if we confine ourselves . . . to those in our own language, are often of great beauty and interest, and are worth more attention than they have received. Their interest, it may be observed, is of two kinds—poetic and historical. Archi-

ecture may be regarded from one point of view as the realisation of an imaginative conception in composition and outline; from another point of view as the craft of building."

With these two aspects of the matter the essay deals, and after some brief classical references the reader is taken from Father Chaucer onwards, through the utterances of our most renowned poets, down to Browning, Tennyson, and Morris, in our own day. No mention is made, however, of Lydgate, an old poet soon after Chaucer's time, who has many references to building matters in his writings.

The author gives numerous and characteristic, but by no means exhaustive, quotations of what our best known poets have said on the subject of architecture and building, the various extracts being accompanied by many judicious comments. With regard to the views and opinions of the poets represented in the book, the most noteworthy fact, as the author himself indicates in his summing up, is

"the remarkable change in the attitude of modern poets towards the subject as compared with the older ones. In the poets previous to the present century the references to architecture, whether in the way of description or metaphor, rarely evince any knowledge of the art, any interest in its details, or any perception of the significance of buildings as an expression of the feelings and views of the generation of men who erected them. They treated architecture . . . in a broad and somewhat vague manner, without any intrusion of detail."

This, generally speaking, is a fair statement of the case as established by the quotations given, but there are exceptions, and Shakespeare, who seems to have been rather lightly passed over by the author, may be cited as one of them. He refers to building matters explicitly enough; witness the following from *Henry IV.*, part 2, which Mr. Statham has for some reason omitted:

"When we mean to build
We first survey the plot, then draw the model;
And, when we see the figure of the house,
Then must we rate the cost of the erection;
Which, if we find outweighs ability,
What do we then, but draw anew the model
In fewer offices, or, at least desist
To build at all? Much more, in this great work,
Which is almost to pluck a kingdom down
And set another up, should we survey
The plot of situation and the model,
Consent upon a sure foundation,
Question surveyors, know our own estate,
How able such a work to undergo,
To weigh against his opposite; or else
We fortify in paper and in figures,
Using the names of men instead of men:
Like one that draws the model of a house,
Beyond his power to build it; who, half through,
Gives o'er and leaves his part-created cost
A naked subject to the weeping clouds
And waste for churlish winter's tyranny."

The idea of Swift, quoted on page 40 of Mr. Statham's book, seems to have been largely derived from the above.

Many apt sentences relating to the art of build-

ing and to buildings could be gathered from Shakespeare alone; a few are appended:

" . . . Goodly buildings left without a roof
Soon fall to ruin."—*Pericles*, Act II., s. 4.

"This fellow will but join you together as they join
wainscot; then one of you will prove a shrunk panel and,
like green timber, warp, warp."—*As You Like It*, Act III.,
s. 3.

"Our lodgings, standing bleak upon the sea,
Shook as the earth did quake;
The very principals did seem to rend,
And all-to topple."—*Pericles*, Act III., s. 2.

"Build there, carpenter, the air is sweet."
Troilus and Cressida, Act III., s. 2.

"Most noble Antony,
Let not the piece of virtue, which is set
Betwixt us as the cement of our love,
To keep it builded, be the ram to batter
The fortress of it."

Antony and Cleopatra, Act III., s. 2.

"What is he that builds stronger than either the mason,
the shipwright, or the carpenter?"

"The gallows-maker, for that frame outlives a thousand
tenants. . . ."

"'A grave-maker': the houses he makes last till
doomsday."—*Hamlet*, Act V., s. 1.

" . . . A tailor make a man?
"Ay, a tailor, sir; a stone-cutter or a painter could not
have made him so ill, though they had been but two hours
o' the trade. . . . My lord, if you will give me leave, I will
tread this unbolted villain into mortar, and daub the wall
of a jakes with him."—*King Lear*, Act II., s. 2.

It may be said that the foregoing have little to do
with architecture, but they most of them border
on our author's view of it as the "craft of build-
ing."

Shakespeare, indeed, seems particularly partial
to the word "build" or its equivalents, and many
instances might be cited to prove his knowledge
of "the craftsmanship or materials employed"
in building. Foundations, piles, frames, princ-
ipals, mortises, bulks, scantlings, coigns, friezes,
buttresses, leads, hinges, bolts, staples, plaster,
loam, rough-cast, lime and hair, trowels, plas-
terers' hawks, handsaws, augers, are terms to be
met with in his works, and are generally used so
fittingly that a more than common knowledge of
building might be attributed to him, as of law,
medicine, and other matters.

Mr. Statham well observes that we find in
Shakespeare "for the first time in English poetry
the use of architectural imagery not merely for
descriptive reasons, but to heighten poetic expres-
sion." To support this many quotations could
be drawn from Shakespeare, as well as from later
poets. Perhaps one of the most beautiful is one
of the most recent; this from Oliver Wendell
Holmes's *The Chambered Nautilus*:

"Build thee more stately mansions, O my soul,
As the swift seasons roll!
Leave thy low-vaulted past!
Let each new temple, nobler than the last,
Shut thee from heaven with a dome more vast,
Till thou at length art free,
Leaving thine outgrown shell by life's unresting sea!"

Old Herrick, too, in his *Panegyric to Sir Lewis Pemberton*, has some fine lines describing a house, and declaring that its best strength and support are derived from the goodness and virtuous character of its founder.

From almost every poet of importance, as well as from many of the minor poets, passages could be culled of more or less appropriateness and beauty relating to architecture and building. Some of the poets, as Scott, Wordsworth, and Browning, would doubtless well repay search in this direction; and Mrs. Hemans, in her poem, *Modern Greece*, has some good descriptive verses on the past and present state of the Parthenon, while in another piece (*The Abencerrage*) she poetically describes the Alhambra.

Mr. Statham seems to have overlooked Burns, who, in his piece, the *Brigs of Ayr*, has some cutting allusions to old architecture. After the Auld Brig has reproached the new one for being "a conceited gowk," and described the storms and floods that are likely to soon sweep it away and hurl it down never to rise—

"A lesson sadly teaching to your cost
That architecture's noble art is lost!"

the New Brig thus refers, in scornful tones, to the old buildings:

"Fine architecture, troth, I needs must say o't,
The Lord be thankit that we've tint the gate o't.
Gaunt, ghaistly, ghaist-alluring edifices,
Hanging with threatening jut like precipices;
O'er-arching, mouldy, gloom-inspiring coves,
Supporting roofs fantastic, stony groves;
Windows and doors in nameless sculpture drest,
With order, symmetry, or taste unblest;
Forms like some beldam statuary's dream,
The crazed creations of misguided whim;
Forms might be worshipped on the bended knee,
And still the second dread command be free,
Their likeness is not found on earth, in air, or sea.
Mansions that would disgrace the building taste
Of any mason reptile, bird, or beast;
Fit only for a doited monkish race,
Or frosty maids forsworn the dear embrace;
Or cuifs (fools) of later times who held the notion
That sullen gloom was sterling true devotion."

Of the American poets, Longfellow has many beautiful references to Mediæval buildings. His sonnet on *The Old Bridge at Florence* is most charming. Of Giotto's Tower he says:

"In the old Tuscan town stands Giotto's Tower,
The lily of Florence blossoming in stone,—
A vision, a delight, and a desire.
The builder's perfect and centennial flower,
That in the night of ages bloomed alone,
But wanting still the glory of the spire."

Emerson, too, has fine thoughts on art and indirectly on architecture; he calls Greek architecture "the flowering of geometry." Holmes has at least one passage (on "Idols"), Whitman refers to building matters in his *Song of the Broad Axe*, while in Joaquin Millar we get a pic-

turesque allusion to an old and forgotten Mexican city and its temple.

References to architecture in poetry can only be incidental, unless poems themselves be on a purely architectural topic, which is seldom the case. It happens, therefore, that as a poem is a work of art, in the same manner as a picture or architectural composition, undue stress laid on what is, in its case, generally an unimportant detail, would detract from the main effect, and destroy the relative proportion and grace of the whole. It is the case, therefore, that Architecture among the Poets does not bulk so largely in literature as might be supposed.

Unhappily, neither architecture nor poetry is much in popular esteem nowadays. In this commercial age the creative spirit is mainly valued when applied to purely utilitarian productions. Noble poetic utterances (and true poetry may be described as highest thought in its finest expression) find little appreciation among men generally, and few there are who pause from their pursuits to contemplate architectural beauty.

This indifference arises largely from a narrow mental outlook on things—an indifference it behoves us as architects to try to remove. To do this we must first awaken in ourselves a wider regard for and interest in other forms of art, for the work of the poet, painter, musician, sculptor, and art craftsman are all akin. Our own sympathetic interest excited, enlarged, and manifested in time create in the public mind also a higher respect for Art, a greater sense of its importance, and a deeper appreciation of the charms it is capable of adding, in various ways, to human life.

Mr. Statham's book will have some influence in this direction, for it will at least help to make the Architect more familiar with the Poet.

His book is so good that many will regret that it was not made still better by being rendered more complete. Not that the essay is incomplete as an essay, but that it would form an admirable basis upon which to root more of the available flowers of architectural poetry, and so make the work one to be kept for reference, or cultivated for the literary interest, pleasure, and possible inspiration it might afford.

To the jaded architect, sick of competitions, cheap and shabby commercial schemes, or building committee ideas of "thirty-shilling spires," a dip into its pages, rich with poetic imagery and sympathetic and ennobling allusions to his art and its associations, would be a mental refreshment, and at least enable his soul to "build a lordly pleasure-house" for itself occasionally, if not "for aye."

Should any further edition of the book be called for, passages omitted, but referred to by Mr. Statham, might be included, however well known; together with all other fine utterances in our

language on the subject; while minor quotations could appear in an appendix. The work would then have a greater completeness and more permanent value than at present.

Of the illustrations in the book it is difficult to know what to say. Mr. Statham himself, perhaps, scarcely expects them to be taken very seriously; they are too minute for one thing, and although "the beautiful idea has no relation to size," these ideas, if they had a more proportionate relation to the size of the page, would be better. They should have been made more of. The little views are not without artistic merit, and most of them interpret the sentiment of the poetical quotations they are attached to very well. Perhaps those on pages 47, 69, and 95 are the best drawings. The castle on page 64 is not unlike Conway; 18 and 73 might have been conceived at a spiritualistic *séance*: these have little relation to the verses they are associated with. In fact, it would take a more than mortal architectural genius to realise these particular verses.

The book itself has been very elegantly and appropriately printed and produced by Mr. Batsford (though the cover is too archaic for the contents). It can be well commended to those architects to whom, as "sons of Art," Schiller says—

". . . is consigned
The liberal dignity of human kind"—

those who are sensible that their art is "a science of feeling more than of rule,"* and whose regard for it springs from a loving sense of its greatness rather than from its being merely a means of gain.

Oxford.

JOHN COTTON.

(206)

ST. MARTIN'S, CANTERBURY.

The Church of St. Martin, Canterbury. An Illustrated Account of its History and Fabric. By the Rev. C. F. Routledge, M.A., F.S.A., Hon. Canon. 80. Lond. 1898. Price 1s. 6d. [Messrs. George Bell & Sons, York Street, Covent Garden.]

This little book is practically uniform with the *Cathedral Series* issued by the same publishers, and maintains the reputation of those volumes for conciseness and portability, at a low cost. What the subject lacks in magnitude is compensated for fully by its interest, St. Martin's being the cradle of English Christianity in the kingdom of Kent, as Glastonbury in remoter times was that of Wessex.

Of the hundred pages, thirty-eight (comprising an Introduction and Chapters I. and II.) are devoted to a general sketch of church history, the advent of St. Augustine, and conversion of Ethelbert. Chapter III. comprises fifty pages of description of the church, and short Appendices give a list of rectors, and a review of recent opinions of antiquaries on the age of the building.

* Ruskin.

The author's opinion that the king was baptised, and that his consort, Bereta, worshipped in a fabric, parts of which are extant in the present structure, must be accepted with reserve; he, however, confidently accepts parts of it at least as the work of the Roman Christians some 200 years before the Italian monk's arrival in Thanet in A.D. 596-7.

After warning us against the dogmatism and incredulity of antiquaries, he shows very strong predilections himself for traditions recorded by early historians whose writings favour his views, but whose dicta it is not always possible to accept. He quotes as conclusive the Venerable Bede's notice of its erection, viz. "While the Romans were occupying Britain"; although he elsewhere admits that "History is silent as to its builder and its exact date." Not having been present at the recent explorations, the present writer is content to record the opinion that all that is visible, inside and outside, is, though *more Romano*, of post-Roman date.

The point, which will probably never be solved, lies in the question whether the oldest masonry (in the wall between nave and chancel) is Roman work, or merely a reconstruction of rubble and Roman brick taken from some earlier building.

The author rejects the idea that the inferiority of the work is evidence in favour of reconstruction.

Opinions as to date range from contemporary Roman to the twelfth century! These are dealt with in Appendices, as being technical points outside the requirements of a guide-book. The author's enthusiasm will be content with nothing less than the admission "that it is the *oldest* existing Christian church in Europe" (*i.e.* specially built for that ritual), and in handling evidence he is prone to forget his own sound advice in the Introduction, and the closing words of the self-same paragraph.

It is doubtful whether Augustine ever preached within these very walls (although the queen, already a Christian, had a place of worship here, exercising her rights of conscience while her consort worshipped his idols not far off), therefore the subsequent baptism within its shelter is purely conjectural, if we conclude it to be a rebuilding in later Saxon times. One may note, for comparison, that the date of All Saints', Brixworth, is considered as *circa* 673, and of Ina's church at Glastonbury 708. As St. Martin, Bishop of Tours, died in 397, the church would not have been founded before that year, unless it were rededicated; but from the third to the twelfth century is almost a unique range of choice for the date of erection, and this is the compass experts are willing to give us! The author, however, believes that St. Augustine preached, and baptised King Ethelbert, within these walls—the oratory wherein his pious queen had worshipped since her marriage. He does not consider it was ever an

oaken structure, but always of stone, which must not be too readily conceded.

In 1846, in the Priory grounds at Dover, remains of a Norman chapel were found, with the pavement tiles *in situ*; and on these being removed the charred remains of a wooden structure were disclosed, upon the site of which the stone building had been subsequently erected.*

The walling at St. Martin's is irregular, and where tiles occur in courses they are at various distances, unlike such walls as Verulam. (St. Botolph's Priory, Colchester, is considered on good authority to be no older than 1103, although the way old Roman bricks are used is similar to ancient buildings in Rome and its neighbourhood.) Where they are entirely of brick, four courses rise $11\frac{1}{2}$ inches, as in parts of the chancel, which is most likely the oldest part of the building, though some assert this of the nave. In the nave walls the bricks vary from 9 to 24 inches apart, with rubble between. In the middle of its south wall a buttress, described as "semi-circular," is the subject of much notice, as being probably a "freak of the builder," as "unlikely to have contained a staircase," as "marking the end of the old church," &c. There is little doubt, however, that the "freak" was a recent one, during or since the restoration of 1845, to make room for an interment, or "smarten up" the ruin. The projection now is only $7\frac{1}{2}$ inches, the girth 3 feet; the shape, between a segment and a flat ellipse. The Roman bricks in it have fresh-looking jagged edges, and the stone courses bear marks of recent trimming. Without doubt this, and also the mid-chancel buttress, have been "smartened up," but in quite different ways: the first shaped into a sort of "respond," while the latter has had square quoins and weather-table added in stone. The engraving (here reproduced), which dates from about the

* Glastonbury had a much earlier edifice of wattles, if we can believe later records. Mr. Willis goes so far as to fix its site as that of the ruined chapel of St. Joseph at the west end of the Abbey church.

forties, shows a projection for both these buttresses, which is unusual in either Saxon or Norman work, and they were, most likely, additions of old materials in or after the thirteenth century, and doubtless they have been mutilated in a meaningless fashion, and so perplex the observer.

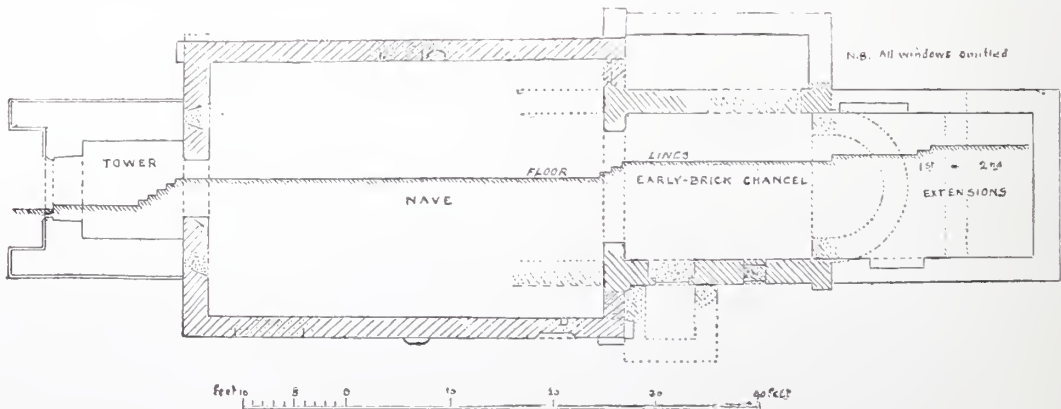


Here props and buttresses the crash suspend,
And loaded with incumbent ruin bend.—Juv.

The skeleton plan given below shows the author's ideas of the changes of walling, and a section of floor levels; but a detailed plan in future editions, with the openings indicated, is desirable.

The chancel has been increased in length at two different periods, and a conjectural eastern apse at mid-length is indicated as being probably the first arrangement, and the nave as being then the same width—viz. 14 feet. The present dimensions are—nave, 38 by 25 feet; chancel, 40 by 14 feet.

Traces of foundations of an annexe, about 5 feet square, were found in the recent explorations at the south-west end of the chancel, which the author considers to have been a side chapel, with its altar; but the size seems to render this doubtful, and it is more likely to have been a treasury for



PLAN OF ST. MARTIN'S, CANTERBURY, BY G. M. LIVETT.

relics and valuables. At some time (twelfth or thirteenth centuries) there have been north and south porches, both now removed, and openings closed with mixed rubble and tiles, not unlike the adjacent older walls.

The church falling into disrepair, was partially restored by the Normans; then, in the thirteenth century, there were internal alterations; and, in the fourteenth, windows were inserted and the western tower added; but anything which is not corroborative of remote antiquity for the building

Regarding the interior, the author says, until two years ago visitors were disappointed, and he seems to prefer the present aspect of newness in fittings, &c. (contrasting with exposed Roman bricks and denuded plaster), to the appearance of fifty years *ante*; but others, besides the Society for the Preservation of Ancient Buildings, may differ from him. But he dismisses the work which brought about the present condition in a few words—too few for such as, years hence, will seek some account of the restoration. Thirty-six lines,

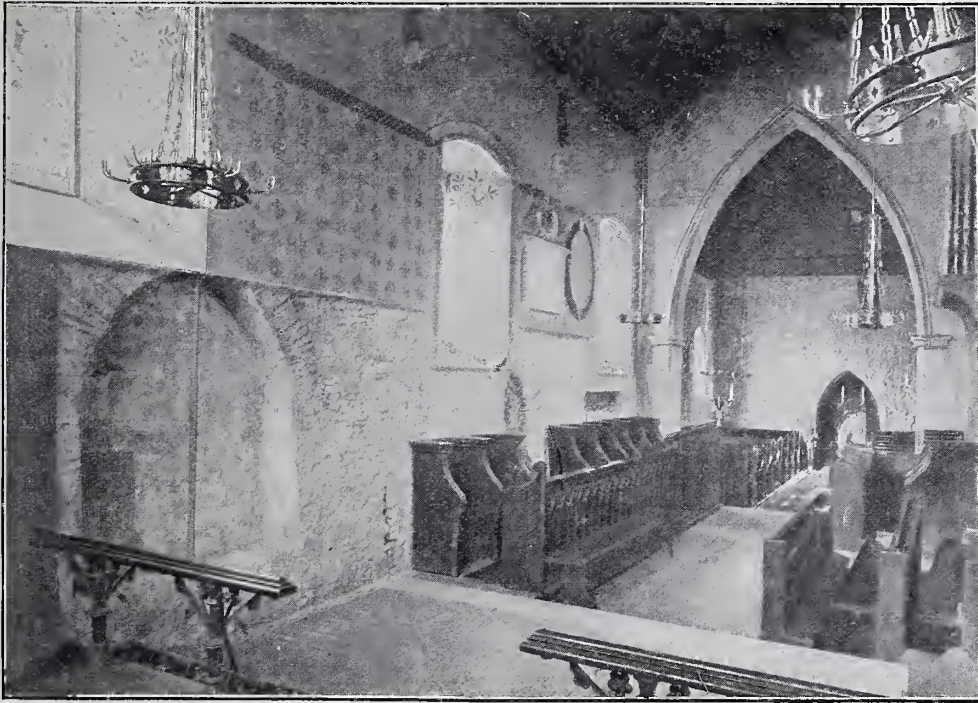


Photo. by Noakes, Canterbury.

CHANCEL OF ST. MARTIN'S, SHOWING SEDILE, SAXON DOORWAY, &c.

receives scanty notice. The church soon passed into obscurity, and, regarding only what was visible to the eye, one might almost forgive Stukeley for calling it "a small and mean church," from any but an antiquarian standpoint, while he admitted it as picturesque enough from its situation, ivy-mantled tower, and lych-gate. The severest blow it has received is in the dissipation of the belief that Bereta was interred in the recess on the north side of the chancel; but there yet remains, however, the curious charter of Ethelred (867) granted to a priest named Wighelm for a *sedes* and *tun*, a right of enclosure for stalls for a market near by—a right or custom pretty generally exercised in the Middle Ages by abbots and priors—a stone cross being set up as the centre of the *cheape*, or market:

Quædam Crux circumquaque edificata una cum parva Shopa.

the greater part descriptive of modern stained glass, is all that is allotted to the subject.

The date and structure of the roofs, and the fact that six courses of bricks beneath the wall-plate seem to indicate that the nave roof has been raised, are not mentioned; nor the name of the architect given who is responsible for the organ-chamber and vestry (whose only merit, we are told, is utility), nor the rebuilding of the east wall of the chancel in the first half of the present century, and what preceded the triplet window fully referred to; these minor matters are not unworthy of notice in what purports to be a guide-book more than an antiquarian history, such as the author's earlier monograph (1891) is intended to be.

The Early English chancel arch is acutely pointed, arch stones thin, and edges chamfered like the piers, with a chamfered and beaded abacus



Photo. by Rev. C. F. Routhledge.

SAXON DOORWAY (EXTERIOR).

at springing. The windows are single lights, at varying levels, with widely splayed internal jambs and equilateral heads.

In the nave we find one- and two-light Decorated windows, that at the south-west being formed of half the head of a two-light window from elsewhere.

The interesting font is built up of three tiers, each course with distinct ornaments of Norman character. Comparing the photograph with

Hasted's full-page drawing, we note the latter shows two lower courses, with wide open joints, the upper course without any. The present plinth does not appear at all.

The tomb known as "Bertha's" was opened before 1844, and again in 1883. What bones were then found, mixed with rubbish, are said to have been those of a male.

The illustrations comprise five full-page photochromos; three reproductions from water-colour drawings; six smaller photo reproductions; three woodcuts from old prints; an outline plan of the church, and one of the old Roman *Durovernum*, or adjacent city of Canterbury, showing the relative position of St. Martin's, St. Pancras, and the first Abbey church; and four sketch sections of the walling complete the list.

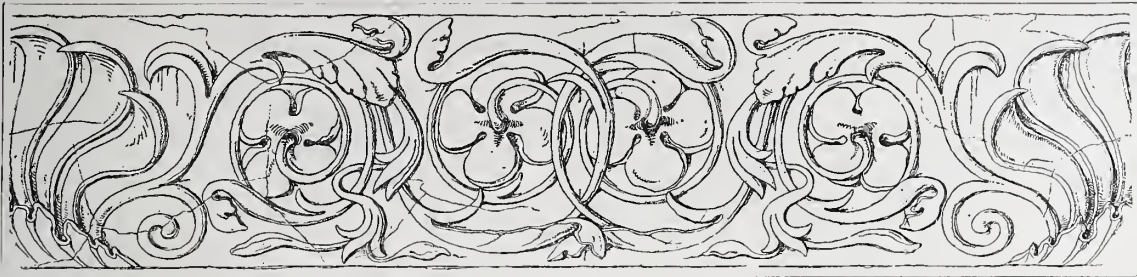
The large exterior views are not satisfying, for you cannot see the "wood for the trees." Illustrations which showed the windows and other details would be an improvement. Stukeley's little "cut" is unreliable. The water-colour, showing the chancel wall at large (which was the frontispiece to the larger book), is a little out of drawing as to position of the windows. The photograph of the tomb is not clear. An index is wanted. Nevertheless, the work is a great advance upon the usual guide-book issue, and no one should visit the church without it. With the antiquarian predilection of the author, and his zeal for his subject, a little redundancy in that matter to the omission of notes for the general tourist may well be overlooked.

The registers, we are told, contain little matter of interest; they date only from 1662.

EDWARD W. HUDSON.



ST. MARTIN'S, CANTERBURY. (From an old print.)




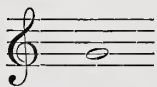
ORGAN-BUILDING.

IT must be observed, in considering this work,* that it is not, like Hopkins and Rimbaults' classic tome, a treatise on the organ, but on organ-*building*; in other words, it is intended as a book from which the student may learn how, with proper appliances, to build an organ; not how to use it when built, which is another matter entirely. The author does indeed occasionally digress into æsthetic considerations, and generally with discrimination and good sense; but the main object of the book is strictly practical and scientific. The plates which illustrate it, and which form a larger page than that of the treatise itself, are bound in a separate volume.

A short introduction gives some general advice as to materials, coupled with the sound opinion that "the best are always the cheapest in the end," and the caution, certainly not superfluous for amateur organ-builders who are not either architects or engineers, to be careful to ascertain, before building an organ for a house, "that the floor will safely carry the weight."

The real business of the book opens with the chapter on "A General Description of the Organ," which would have been rendered clearer by a simple diagram or plan of the pipes of an organ of average size as they stand on the wind-chest, showing that each rank of pipes from back to front stands for one note but different *timbre*, and each rank from end to end for the same *timbre* but different notes. This is no doubt described, and the details are illustrated on Plate XV.; but a general plan, such as I have suggested, would make it far clearer to the beginner. In regard to compass, it is not quite correct to say that the

pedal organ is invariably ; in some large modern organs the upper

compass of the pedal is to  and the upper G and F# are sometimes very

useful; both notes occur, though only once, in Bach's pedal parts, showing that he either had them or wished he had. The author seems also to miss the real point of the German "Ventil" system, as compared with the "Composition Pedal" system. As he explains, the composition pedal throws out, or in, certain groups of stops by one action, instead of the player having to move them all separately. The drawback to this system is that, even with the best mechanism, it produces a certain amount of noise. With the German "ventil" system the wind supply can be cut off from or supplied to certain groups of stops, the drawstops being "out" all the time and not moved by the player. This avoids noise, but it has the

* *A Practical Treatise on Organ-building.* With Plates and Appendices. By F. E. Robertson, C.I.E. London: Sampson Low, Marston & Co. 1897.

Third Series, Vol. V. No. 19.—24 September 1898.

disadvantage that the position of the drawstops, in or out, does not in itself show whether they are in play or not; something is left to the memory of the performer as to what he has done with the "ventils," which has led to mistakes and disappointments in performance, especially with players who are at all nervous. The system has never attained favour in England, and in one or two cases where it has been applied to an organ, it has proved such a nuisance to players who were not used to it, that the whole work has been taken out and the composition pedal system substituted.

The chapter on Acoustics, as relating to organs, gives the theory of the vibrations of air within an organ-pipe, though the author does not profess to have any explanation to give, any more than any other writer, as to why the sheet of wind blown across the mouth of a flue-pipe should vibrate, and so set up the vibration of the column of air within the pipe; he gives the conjectural explanation which has been given before. In this respect, organ-making, like violin-making, is a kind of "mystery," perfected by experience rather than principle; organ-builders seem to have found out by experiment, at an early stage, how to shape the mouth and lip of the pipe so as to induce the vibration, but none of them know on what principle the result is produced. Nor can any organ-builder, I believe, tell you why the "languid," the plate just below the mouth of a flue-pipe, requires to have its edge nicked for the pipe to speak freely, nor why a different nicking produces a different tone; it is the work of experience, and a kind of acquired instinct. I do not observe that in the chapter on Acoustics the author anywhere clearly explains that it is not the pipe which vibrates in an organ, but the column of air within the pipe, and that the function of the pipe is merely to define and set in motion a column of air of certain dimensions. Those who know this already will see that it may be inferred from the substance of what is said in the chapter; but the reader who is new to the subject may miss that point.

The chapter on the Scale of Flue-pipes goes pretty fully into a very nice point, viz.: the extent to which the ratio of width to length in a pipe should be modified as we ascend the scale from the larger to the smaller pipes of the same stop; a point on which both opinion and practice, even among scientific organ-builders, have differed much. We may notice with approval, in this chapter, the sound remark that much of the quality of a large wooden pipe depends on the wood being fully strong—good thick sides, not the band-boxes that some economical organ-builders put together. The same applies (I do not notice that it is mentioned) to metal pipes; thin metal means poor tone. That is where innocent persons get robbed in an organ without knowing it; the thin metal pipe looks the same externally as the thick one, but the tone is poor.

The question of the scale of reed stops is treated in the succeeding chapter—a still more complicated question, because we have the additional element of the reed, and have to determine what proportion of pipe will sympathise with the reed, and then what proportion the treble reeds and pipes should bear to the bass ones. It must be remembered (and this, also, is not quite as clearly put as it might be) that in the reed pipes the pitch depends on the rate of vibration of the reed, not on the length of the pipe; the pipe being added, as I once heard a Yorkshire organ-builder explain it, "only to give 'volum.'" Hence the reed pipes are made conical, or rather in an inverted cone; playing, in fact, the same part that a speaking trumpet plays towards the natural voice. Mr. Robertson recognises the importance and the difficulty of getting pure and regular intonation from striking reeds, and their great superiority in effect, nevertheless, to the more easily made free reed, which, as he suggests, the German builders prefer because they cannot make the striking reed as well as the English builders can, which is probably true. He does not seem to be aware of the beautiful and simple little invention by which Mr. Willis secured greater regularity and brilliancy to his

reeds, viz. : by casting or soldering a small lump of metal on the back of the tip of the reed, the weight of which, as he put it to me, acts as a “fly-wheel,” and keeps the pulsation regular. There is one interesting point noted in this chapter which I have not seen touched on before—the effect which the “boot,” which forms the containing chamber for the reed, may have as a disturbing element in the sound. In other words, the boot, though not intended to that end, may have a certain resonant note of its own, and if this note be discordant with that of the tongue it will spoil the effect. The author notes that Herr Haas, who tried a number of experiments on reeds, came to the conclusion that from 32 feet to 8 feet pitch a reed did just as well without a boot, and could be stuck straight in to the sound-board as it was, which is one very direct way out of the difficulty.

The chapters on Pipes and Pipe-making go fully into the practical side of the subject. In regard to joining up metal pipes, the author says :

“An amateur will probably despair at first of turning out the beautifully clean and fine thread of solder which is seen on the seams of an organ-pipe ; but it is perfectly easy if done the right way. Soil the joint, and then, with a shave-hook or small plane, birdmouth it with a *clean cut*, as shown on fig. 118. Rub it down with a tallow candle, and tack the edges together with a drop of solder here and there ; then, with the pipe rather on the slant, draw the soldering iron down at a suitable speed, and it will leave a clean job behind it. The whole secret lies in having a *clean cut*, and not a filed, scratched, or jagged surface ; and the same applies to all soldering work.”

To any one who looks at the organ from the æsthetic point of view the chapter on the various classes of stops will be one of the most interesting in the book. In the main the author’s remarks as to the relative value of the various stops, and the qualities which they should or should not have, are characterised by excellent judgment. But there are some points here, and in the chapter on Specifications, which I think he misses. He draws attention (quite rightly) to the great deficiency of the majority of English organs in regard to pedal stops ; and the most careless reader can hardly compare a list of specifications of German organs with one of English organs of about the same relative size, without being struck with the extraordinary disproportion in the amount of pedal stops, a German organ having about ten, for instance, where an English one will have three (except in the case of a few of our largest concert-hall organs). And, in connection with this point, he inveighs against the use of the very large scale “booming” pedal pipes in English organs, which, he says, and probably with truth, arose from the effort to make one or two of these “booming” stops supply the massiveness of effect which, in a German organ, is supplied by a complete set of stops repeating most of the Great Organ stops an octave lower. But when the author observes that these heavy deep pedal stops are never found on a German organ, he touches on what is really the defect of the typical German organ. It is a great mistake for English builders to depend so much on one or two “booming” pedal diapasons for their effect ; but when the rest of the pedal is properly represented, such a stop, as the basis of the whole, adds weight and grandeur of effect to the instrument, and many of the German organs suffer from the want of that ; they sound too much like gigantic harmoniums. On the other hand, while urging that the Pedal Organ should be larger and more efficient than it usually is on English organs, Mr. Robertson does not seem to see that half-measures are useless. For the proper performance of high-class organ music, Bach and Mendelssohn more especially, the Pedal ought to have sufficient stops to make a complete bass to the full Great Organ *without any coupling at all*. Yet Mr. Robertson gives, as his first example of Organ Specification, and as a remarkably excellent example, the organ built by Messrs. Michell and Thynne for the Inventions Exhibition of 1885, which has nine stops on the Great Organ and only five on the Pedal as follows :

1. Harmonic Bass	32 feet	4. Flute Major	8 feet
2. Major Bass	16 „	5. Bombarde	16 „
3. Dolce	16 „		

Here Nos. 3 and 4 together would evidently make a light Pedal for playing with the softer portions of the manuals without coupling; and nothing is left for a loud bass to the Full Organ but Nos. 2 and 5, a loud diapason and a loud reed—both unison stops (for sixteen feet on the pedal counts as eight feet on the manual). That Pedal would be absolutely useless as a bass to the Full Organ without coupling, while with coupling it would be rather too loud; but the important point is, that with coupling there can be no free movement of the pedal part across the left-hand part—an incident constantly occurring in Bach's Fugues. Here is a specimen from his greatest organ work, the "Fugue in the Doric mode":

The image shows two staves of musical notation. The top staff is labeled "Left-hand part." and contains a sequence of notes in a treble clef. The bottom staff is labeled "Pedal part." and contains a sequence of notes in a bass clef. There are stars and crosses above the pedal part, indicating specific points of interest. The notation is in a single system, with the two staves connected by a brace on the left and an ampersand (&c.) on the right.

Let Mr. Robertson, if he is a player, try to play that on an organ where the pedals have to be coupled to the Great, and he will find that where I have put stars the left hand comes down on a key already held down by the pedal; and where I have put † it descends below the pedal, falsifying the harmonic progression. That makes five failures in three bars, from having to play with the pedal coupled to the manual. The thing is perfectly ridiculous, and the only reason this blunder of an insufficient pedal goes on repeating itself is, that the people who build organs are absolutely ignorant of organ music, and the organists, who ought to look after them, are indifferent, and cased in routine, and are contented with playing Bach anyhow. As an example, I will give the Pedal Specification of the same organ as it ought to be, giving that of the Great Manual also:

Great Manual as specified in Messrs. Michell and Thynne's organ:

1. Violon	16 feet	6. Harmonic Flute	4 feet
2. Large open	8 "	7. Quint mixture	
3. Small open	8 "	8. Mixture	
4. Claribel	8 "	9. Tromba	16 "
5. Octave	4 "	10. Trumpet	8 "

But, having written it down, before going any further I must point out that there are no less than three serious mistakes in that list. In the first place, that organ is not large enough to have a 16-foot reed (No. 9), which would only be in the way, and muddle it. Secondly, the Harmonic Flute is quite out of place on the Great Organ; it is a special quality of tone which does not combine with the other Great Organ tone, and the only explanation of its being constantly placed on the Great Manual is that organ-builders have no perception of *timbre* combination, and that most organ-players are apparently no better, otherwise they would never endure it. Its tone may be useful to float above the Diapasons, but it will never combine with the "chorus" work—the very look of it there is enough to set one's teeth on edge; and if placed on the Great Manual it should at all events be separated from all the composition pedal combinations, and left to be drawn separately. The third blunder is the "Quint mixture," which is, of course, Twelfth and Fifteenth on one slide, so that they must be drawn together. I observe that in his chapter on Stops the author says that this ought to be done for the convenience of the player, "because the Twelfth cannot possibly be used without the Fifteenth"; but it never seems to have occurred to him that the Fifteenth may be used without the Twelfth, and often with much better effect. Both he and Messrs. Michell and Thynne would probably be surprised to hear that Bourdon, small Open Diapason (without the large), Stopped Diapason, Principal, and Fifteenth, make a charming organ for

light fugue passages; and still more surprised to hear that an exceedingly effective combination can be got by Bourdon and Fifteenth in brilliant solo passages.* I will now, therefore, give the Great Organ for Messrs. Michell and Thynne's organ as it ought to have been for the same number of stops (one more stop in numbering, because No. 7 in their scheme is now resolved into its two component parts):

Messrs. Michell and Thynne's Great Manual, as it ought to have been :

1. Bourdon 16 feet tone	7. Principal 4 feet
2. Large Open 8 "	8. Twelfth "
3. Small Open 8 "	9. Fifteenth 2 "
4. Stopped Diapason 8 " tone	10. Mixture (19, 22, 26, 29) "
5. Gamba 8 "	11. Trumpet 8 "
6. Spitzflöte (light scale) 4 "	

The Pedal Organ to the above, as it ought to be :

1. Sub-Bass 32 feet tone	6. Flute Bass 8 feet
2. Open Diapason (metal) 16 "	7. Fifteenth 4 "
3. Violon 16 "	8. Mixture (5 ranks) "
4. Bourdon 16 " tone	9. Trombone 16 "
5. Principal 8 "	10. Trumpet 8 "

That is a Pedal Organ with which you can play a fugue without any coupling being necessary. In regard to the Great Organ scheme, the 16-foot Bourdon is far too useful a stop to omit; nothing blends like it with the Diapasons in passages of extended harmony. The Violon or Double Gamba is rather for an organ large enough to have two 16-foot flue-stops on the manual. The same may be said of Stopped Diapason; the Claribel does not supply its place—it is too “hooting” in quality. The great value of the Stopped Diapason, in the general effect, is that it adds more weight and breadth of tone without more noise. A combination of 4, 5, and 6, or 3, 4, and 6, makes an admirable *light* organ. In the Pedal the metal open Diapason is an expensive item, but it is worth the money. The pedal mixture is often omitted, even in German organs; but it has a grand effect in slow passages where the Pedal makes a kind of *canto fermo* bass.

Another statement that I must take exception to in the chapter on organ stops is that the Salicional, Dulciana, and Vox Angelica are only different names for a very delicate stop. They ought all to be different in quality, and usually are. The Dulciana is really a very light and soft Diapason; the Salicional a very light and soft Gamba, with something of its reedy quality. The Vox Angelica ought to be rather rounder in tone than the Dulciana, and still softer. I must also protest against the heresy, in regard to the ordinary Oboe stop in the Swell, that “it should of course imitate as nearly as may be its orchestral namesake.” It should do, and does, nothing of the sort. The “Orchestral Oboe,” a modern stop (not mentioned, by the way, in the author's list), is that which imitates the actual instrument; the organ Oboe is a “mixing stop,” called by that name because everything must have a name, but has little resemblance to the orchestral instrument, and would fail in its special value if it had. When the author refers to the Voix Céleste—two Dulcianas, one of which is a little out of tune with the other, so as to produce a “beat”—as “a gross libel on the harmony of the spheres,” I am disposed to agree with him; at the same time the Voix Céleste, if used sparingly and with discrimination, has its *raison d'être*—it is an effect which nothing else can replace; but a little of it goes a long way. The same may be said of the Vox Humana, which is a stop worth having for occasional and judicious use, only it should not be abused.

It is noticeable that the author has not said anything as to the philosophy of the use of mixtures and other “mutation stops” (stops which sound a different note from that which is

* I first learned this effect from a set of Variations for the organ by W. T. Best, and have often used it since. Few players seem to be aware of it.

supposed to be represented by the key that is pressed). He mentions incidentally that the notes of the mixtures represent the harmonics of the fundamental note; and I remember being told, when first making acquaintance with the organ, that this feature was introduced to supply the effect of the sympathetically sounded harmonics of the pianoforte. But, in fact, as Helmholtz has shown, the principal harmonics are produced by the pipes themselves; stopped pipes will even develop a tendency to sound the fifth or twelfth more prominently than the fundamental note; so that this defence of the mixture stops is a fallacy. The point has been very much debated, especially among the French; Berlioz, who (like many French musicians) had little sympathy with the organ, is exceedingly sarcastic on the subject. And when you tell a person not accustomed to the organ, that on sounding the chord of C major on the Great manual with all the stops out, you have actually a combination of these notes:—



the open notes representing the keys you strike, and the small black ones the additional notes sounded by the "mutation" stops, he naturally thinks that either you or he must be mad. Of course the main weight of sound is on the notes that are struck, the mutation notes are kept in subordination; but they are there, and can be heard if listened for. It is no use defending it on theory; there is no theory for it. But practice, and the experience of the old organ-builders, guided them to the fact that this was the one method of giving brilliancy of tone to an instrument which, if it were composed of only unison and

octave stops, would sound dull and heavy. *Solvitur ambulando*; it does produce the desired effect, without producing any sense of discord to the ear, when the stops are properly balanced; and that is all the philosophy of the matter.

One point in which I am very much in sympathy with the author is in his depreciatory criticism on the Swell Organ. I do not agree with him in saying that all the effects of the Swell that are worth producing can be produced by a good player without it; that is going too far. But I do agree with him that such effects are not those which belong to the highest quality of organ music, and that if you have only money enough for two manuals, it is far better to dispense with the Swell and to make the second manual a Choir Organ, rather than shut up half the pipes in the organ in a box where they cannot be heard. And that is a point worth the consideration of architects who may be consulted about an organ, or may have some influence in regard to its laying out. Let them throw their weight, when they have any, into the scale in favour of a large and complete Pedal Organ, which can dispense with coupling to the manuals; * and where there are only two key-boards, let them urge the adoption of a Choir Organ rather than a Swell as the second manual. They will thus be exercising their influence in favour of the higher qualities of organ playing.

There is one possible feature in a large organ which I do not think is hinted at anywhere in Mr. Robertson's book. Where economy is no object, the grandest effects can be produced by having *two* Great Organ manuals—alike in power and in general character, but with a certain degree of difference in tone and quality. Many of Bach's compositions could be played on such an organ with an effectiveness and variety which could be attained in no other way. I have only come across one such organ—the grand old instrument in the parish church of Northampton. I wish there were more like it.

It only remains to say that in the chapters upon Bellows, Action, Tuning and Voicing, the whole subject is gone into in a most practical manner. In the chapter on Bellows the author does not say, in so many words, that few organ-bellows are large enough, though what he says

* I do not mean to say that Manual to Pedal "couplers" should not be provided; they should be there for use when necessary; but one ought not to have to depend on them.

may be taken to imply that. There are few church organs in England that are not short of wind when hard pressed, and it is one of the most serious defects an organ could have; saving money (and space) on the bellows is one of the worst, and at the same time one of the commonest, forms of economy indulged in organ-building. This also is a point in regard to which the architect may have some influence. Let him at least provide space for bellows of adequate size. This can often be done by placing them in a vault under the organ, where space on the ground floor is limited; but care must be taken to keep out damp.

The illustrated plates and diagrams, forty-five in number, leave, for the most part, nothing to be desired; they are full in detail and clear in drawing. The only things one need object to are the one or two examples of organ cases and fronts, which were not necessary in a work of this kind, and, from an architect's point of view, are merely such as may be described as "organ-builder's gothic."

In the main, all lovers of the organ may feel grateful to the author for a careful, learned, and practical treatise.

H. HEATHCOTE STATHAM.

TWO SOUTH-SAXON DOORWAYS.

By J. TAVENOR PERRY [F.].

THE revived interest taken by archaeologists and architects in the remains of buildings assumed to be erected in this country during the period of the Saxon and Danish supremacy, is peculiarly appropriate to the time when we are about to celebrate the thousandth anniversary of the death of one of the greatest of our Saxon kings; and the Paper recently read at the Institute, by Professor G. Baldwin Brown, on "Some Characteristics of Pre-Conquest Architecture,"* has done much to re-formulate the principles of the style—if such it may be called—in accordance with the fresh light thrown on its origin from the historical and architectural knowledge acquired in more recent years. The Professor, in this Paper, makes the suggestion "that the Institute would be doing a most valuable service to the cause of architectural study if it could focus in some way the labours of isolated workers in different parts of the country, and bring together the results of so many scattered investigations." Acting on this suggestion, I have prepared an account of two interesting, and, I think, undoubted Saxon doorways, which, although within a few miles of Brighton, are but little known to the general architect, and are practically ignored in the guide-books. These are the north door of S. John Baptist Wivelsfield, and the south door of S. Mary Magdalene Bolney, both in Sussex.

The sketches given herewith will show the pecu-

liarities to which I have to draw particular attention, and which I think are the result of no local influence, but characteristic of a distinct style, founded directly on an attempt to imitate Roman examples, and have nothing in common with, but are long anterior to, the Norman style, to which they are usually ascribed. The peculiarity which, perhaps, strikes one first is their proportion, the opening being in height about three times the width, a much more graceful and classic proportion than that of the Norman doors, where this proportion was sacrificed to allow of the use of many orders of mouldings overloaded with rude enrichments which do not atone for the squat appearance of much of the Norman work. This proportion of great height to width seems to be very characteristic of Saxon work, and is most noticeable in the church of Worth, Sussex, where the Saxon windows still remaining are at a great height in the walls, and arranged somewhat as a clerestory. The two blocked-up doorways at Worth, of which the interior arches alone remain, also show a great proportionate height to width, exceeding even those of Bolney and Wivelsfield. Professor Baldwin Brown says:—"This height and narrowness are distinctly neither Roman nor Romanesque. Where they make their appearance we may be safe in predicting the influence of Celtic tradition." With the statement that it is distinctly not Roman I cannot agree; and I cannot understand how any Celtic building traditions could possibly have survived in the kingdoms

* JOURNAL, Vol. II. Third Series, p. 485.

of the West and South Saxons to the period when church-building began among them. But it is much easier to conceive that this feature, together with others, to which I shall refer, was the result of direct Roman influence, with which I have dealt in my Paper on the Roman Campanili.*

Another feature of these arches, which allies these doorways rather to the Roman than the Ro-

the archivolts I do not consider to be an early form of the orders which became so usual later, but due, rather, to ignorance of the manner in which the Roman archivolt was constructed, as the projections of one ring before the other are only, as at Wivelsfield, $1\frac{1}{4}$ inch, and at Bolney 2 inches; whilst the arrangement of the reeded mouldings points also to the same imperfect imitation. In

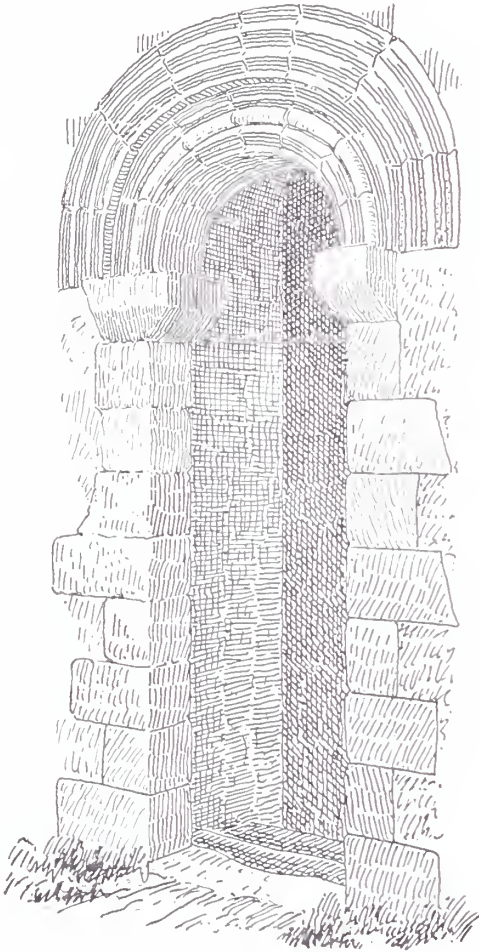


FIG. 1.—WIVELSFIELD.



FIG. 2.—SOUTH DOOR, S. MARY MAGDALENE, BOLNEY, SUSSEX.

manesque, is the character of the archivolts and impostes. There is no attempt, by bold projection and recessing of the jambs, to form a series of orders of mouldings, as in the later style; and a comparison of the section of any average Norman doorway with the archivolts of later Roman times—say, the palace at Spalatro, or the ninth-century Roman campanili—will show how much nearer these Saxon doorways approximate to the latter than to the former. That there are two rings in

* "The Mediæval Campanili of Rome," JOURNAL, Vol. V. Third Series, p. 213.

the door south of the tower of S. John Barnack there is a similar arrangement of two rings of arches, with only a slight projection; but in that case they are unmoulded. The size and jointing of the arch stones distinguish this work from the succeeding Romanesque, in which the stones are small, closely jointed, with something approaching to regularity in size, whereas in these arches the stones are evidently as large as the builders could obtain, and are most irregularly spaced. The arrangement of the voussoirs at Barnack is in all respects similar to these Sussex examples.

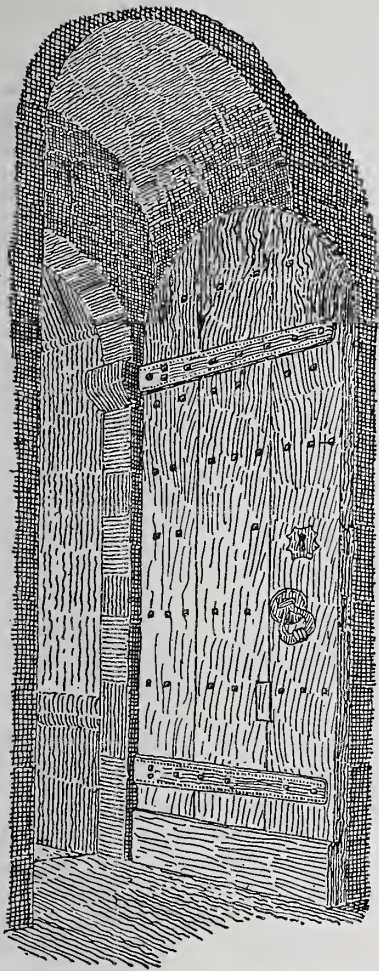


FIG. 3.—BOLNEY, INTERIOR.

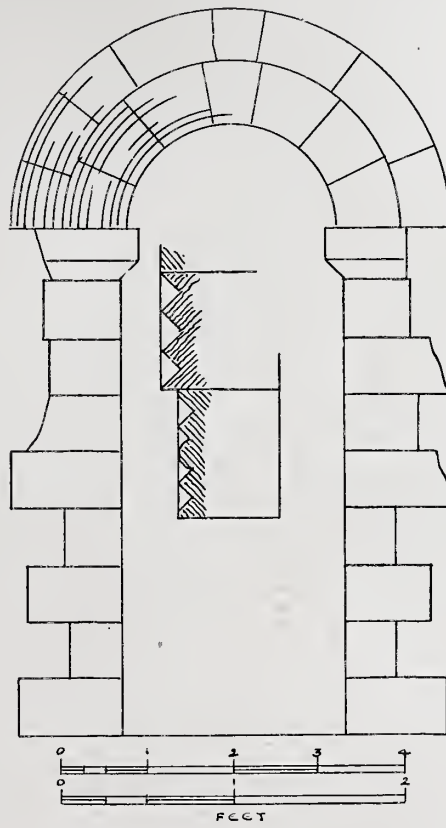


FIG. 5.—WIVELSFIELD.

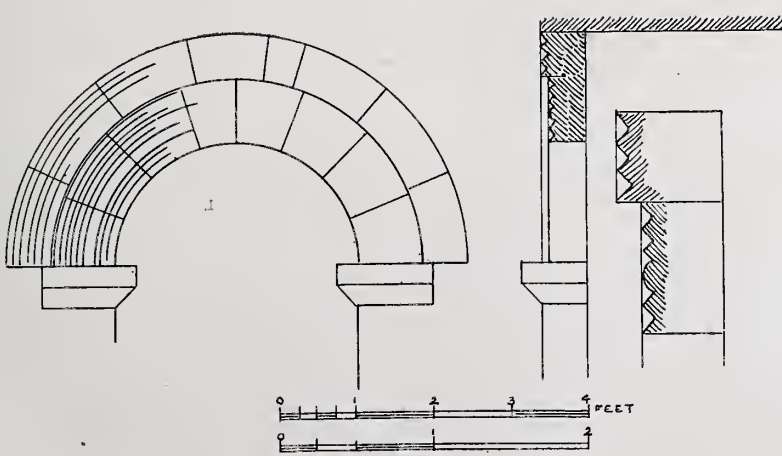


FIG. 4.—BOLNEY.

Mr. Hussey, in his notes on the churches of Sussex,* calls attention to the presence in some of the undoubtedly early ones of a peculiar stone, the use of which was superseded in later work by Caen stone; and he regards it as evidence, in part, of the early date of the buildings in which it is found. It is of a coarse character, and he describes it as a freshwater-shell limestone from Purbeck, and he found it in the lower parts of Sompting and other churches in Sussex and Hants. The stone in the arches of Bolney and Wivelsfield seems to answer to this description, and is quite different from the Caen and other stone found around them in these two churches. The stone has turned a greenish yellow, looking very coarse and dirty, but it is very hard. I think, therefore, that this may be taken as additional evidence of the early date of these doorways. The internal arches and reveals of these doors and those of Worth are very peculiar. Although the inner reveals are but slightly wider than the outer reveals, the arch rises to a much greater height than the outer one, and is thus not concentric with it—an arrangement peculiar to Saxon methods of building.

After all that has been written and said about the almost complete lack of authority which would enable us, even approximately, to define the period during which any one of these Saxon buildings has existed, it may appear presumptuous on my part to try and fix the date when the doorways, and doubtless the churches, of Bolney and Wivelsfield were erected; but as the object of this communication is to form a contribution to the general study of Pre-Conquest architecture, it may be useful to enunciate a theory—for others to support and refute with their reasons also—which the examination of other churches in the country, and comparison of them with these, has led me to form on this subject.

The two best known and most complete churches in this county, generally admitted to be of Saxon work, are those of Worth and Sompting. Of these the church of Worth may be considered a very late example of the style; its great size, and its isolated position within the forest of Anderida, render this most probable; and while it preserves all the features of the Saxon style, and suggests no approximation to the Norman, which was so soon to supersede it, its work is so coarse, and all its details so rude, that it must be regarded as a debased example of a decaying style. The church at Sompting, so far as we can judge by the

oldest remaining work, is not long anterior to Worth. The earliest details remaining in this church, although coarse, are not so rude as at Worth, as a comparison of the treatment of the mid-wall shafts, and their bracket capitals, will show; whilst the tower, which in its treatment of the belfry openings shows distinctly Roman influence, is surmounted by a spire so unique in this country as fairly to fix its date within the few years of Canute's rule. Throughout the lands and islands of the Baltic Sea such towers and spires are common, and of dates as early as that claimed for Sompting, which may well have been erected by a Dane, who, over his semi-Roman tower, put the snow-shedding roofs of his native country. We may, therefore, approximately put the date of Sompting well within the eleventh century, and Worth in the middle of it. When we compare the graceful proportions and classic treatment of the doorways of Bolney and Wivelsfield with the coarseness of Sompting and Worth, we at once see that the former belong to a different and more artistic age; and I think they can fairly be assumed to belong to the peaceful and lettered reigns of the grandsons of Alfred the Great, or the second quarter of the tenth century.

Of the recorded history of these churches there is nothing to relate, and the few notices published in journals or guide-books are most meagre.* Neither of these churches is mentioned in the lists of Saxon buildings published by Bloxam or the Camden Ecclesiological Society. Of Bolney there is an account in volume ii. of the *Sussex Archaeological Collections*,† in which it is stated that on a restoration of some years ago, which seems to have amounted almost to rebuilding all except the tower, the Norman chancel arch, and considerable supposed Saxon remains, were destroyed. The doorway head was then covered over by a modern porch, which accident, perhaps, saved it from destruction at the same time. The jambs and all the interior of the doorway are coated with plaster, so that the exact nature of their stonework cannot now be made out. When the church at Wivelsfield was restored a new north aisle was built, and the Saxon doorway reset in the new north wall; but Messrs. Carpenter and Slater, who carried out the work, have left a published record of the alterations.

* See *A Compendious History of Sussex*, by M. A. Lower. Murray's *Handbook to Sussex*, 1893, does not mention the doorway at Bolney, and describes that of Wivelsfield as Norman.

† *Sussex Archaeological Collections*, vol. x., p. 59.

* *Notes on the Churches of Kent, Sussex, and Surrey*, by the Rev. Arthur Hussey.

A BOMOS * IN SABINA.

By the Cavaliere SETTIMIO GIAMPIETRI [*Hon. Corr. M. Rome*].

UPON the ancient Via Salaria, in the heart of Sabina, are to be seen remains of Roman tombs. Near the Osteria Nuova especially, rise up some grand ruins, despoiled of their architectural and decorative embellishments. The Osteria itself stands upon the colossal remains of a Cyclopean construction. Such is seemingly the appearance of its entrance, consisting of a tunnel constructed with enormous parallel blocks, and roofed in with huge stone sleepers arranged lengthwise. Directly we arrive within the Cella, an attentive examination of its groined roof, made, with masterly art, with enormous centered stones, reveals Roman work of the time of the Flavii. Curiously enough, in the interior of the Cella there is a deep well, from which water is still drawn. (A similar well exists in the tomb of the Anici on the Via Latina, near Rome.) This supposed Cyclopean construction is nothing but a Roman work, and technically exactly resembles the substructions of the Colosseum, except that the blocks are larger. To judge from the length of the tunnel, which should represent the thickness of the walls, the edifice must have been colossal. It is to be remarked besides, that the solid stone of which it is built is imported from a long distance, because the natural fluvial soil of these parts is composed solely of a consolidated shingle, which was used by the Romans in making the Via Salaria, and by the Pelasgi in a *Bomos*, which I shall now mention. At the same time, this almost unique and admirable specimen of Roman art is ignored by the Ministry of Public Instruction, and serves as a pigsty, whilst so many mediæval constructions, which, after all, only represent the decline of art, are declared to be national monuments.

Sabina is rich in already known Pelasgic constructions, but I will now mention one hitherto unnoticed.

An hour's walk from the Osteria Nuova, and between the bridge of Buita and Poggio S. Lorenzo, is a hill, which slopes and descends towards the bridge. Fifteen minutes of ascent beyond the bridge, after passing a poetical grove of oaks belonging to Signor Carosi, brings one to a level spot, on the remains of a most original Pelasgic construction, certainly belonging to a *Bomos*.

In fig. 1, I give the plan of what remains, with the geometrical dimensions; and in figs. 2 and 3 the perspective view.

The terrace upon which rose the altar for sacrifice, must have been a quadrangle of about forty metres each side. What remains is a part of the perimeter of the three sides (towards the valley)

which sustain the terrace; the fourth side, towards the hill, was accessible, and, perhaps, was open and level with the fort. Ascending the hill for another ten minutes, one reaches a summit where other ruins tower above. There is a cistern for water, and still further on several wells in the soil similar to those excavated in the rocks at Faleria, considered to be storehouses for grain. These wells plainly indicate that the ruins were Sabine, contemporary with the Etruscans. Here there was probably a small town built on the ruins of an ancient Pelasgic *oppido*, and, in the midst of the present ruins, called *Torracce*, would have been the citadel (*arce*) of the *oppido*, which would explain the existence of some tombs discovered in the area of the *Bomos*, afterwards used by the Sabines as a cemetery. In fact, from what I saw and learnt from the peasants, they have found some skeletons, and some traces of walls and tiles on the area of the *Bomos*, in the excavations made for plantations. Indeed, nearly in its centre a circular cellar of masonry, now closed, fell in, which was certainly posterior, and had nothing in common with the construction of the *Bomos*, and must be a sepulchral Sabine Cella.

The proof of the age of this structure is derived from the technique recognisable in the two views figs. 2 and 3 [p. 489]. Another sign of its great antiquity is the inequality of the distances between the pilasters or buttresses of support to the wall; the distances between them diminishing in proportion to the greater height of the wall. Thus a statical law was observed entirely at variance with æsthetic form, a characteristic of Pelasgic constructions. The blocks are in unequal horizontal arrangement, but perfectly connected, without any cement, and left rough on the surface.

This monument also is perishing. To make a new novel here they have taken sundry blocks, and destroyed a part of the *Bomos*.

The entire construction formed a terrace, in whose centre must have risen the altar for the sacrifices, in which, as is known, the Pelasgi immolated human victims. Alas for the maidens who were here murdered to propitiate the gods!

Amongst many varied and conflicting opinions it is not known for certain why this people was called Pelasgic; but what they were we can now ascertain.

They were an aboriginal people of Italy, to which its symbol, the *Italos* (calf, bull), gave the name, and where they left so many traces and such abundance of monuments as to vindicate

* Pelasgic Altar.

their true origin, which has been confounded and confused by Dionysius of Halicarnassus, who nevertheless confessed that in his day there existed no longer in Greece edifices built in the Italian manner. So that consequently that art must have been introduced there.

Other elements present themselves to those who study and meditate upon the archaic monuments in Italy, to show that nothing had been imported here before the Romans.

This aboriginal people (the same as the *Pelasgic*: according to the Bible *Phaleg* or *Paleg*, signifying division of people) had a civil government. The Cyclops (from *ciclo-opes*, that is, builders of

emigrated to the land to which they gave the name of Arcadia.

The Phœnicians were also the same people, so called from *for*, because they invented the phonetic letters; and Mercurius was Phœniko-pelasgic. This affirmation, notwithstanding the modern progress of archæology, might seem bold; but Fosbrooke, in his *Encyclopædia of Antiquities*, more than half a century ago, considers the Phœnicians as the inventors of architecture, believing them symbolised by the name of Cyclops and Pelasgi. In fact, Moses describes their cities as surrounded by strong walls; and the Temples of Melcarte and Astoret at Tyre, built by Hiram with cedars of

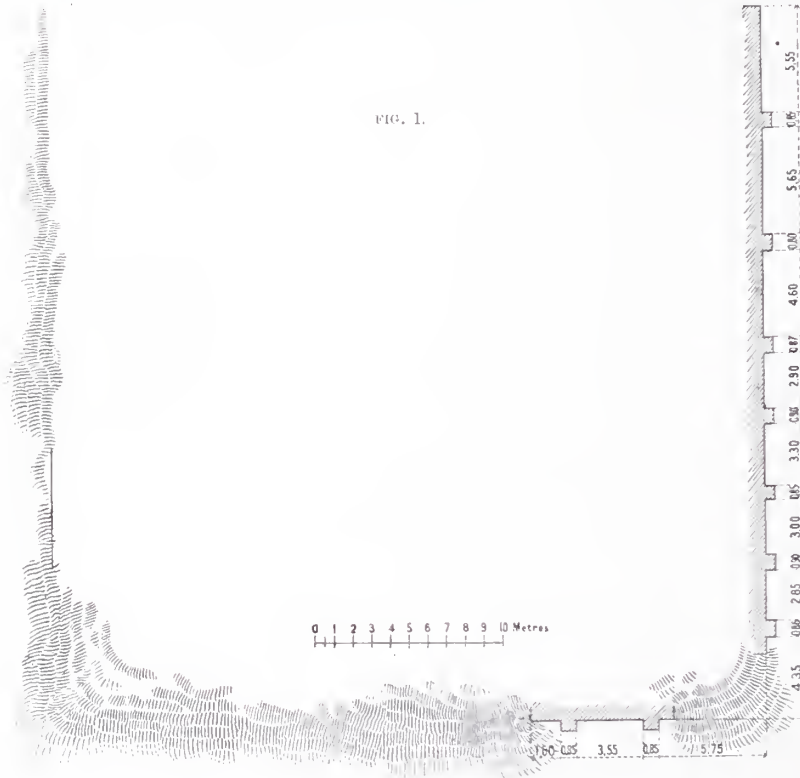
Lebanon, and adorned with columns of gold, are their work.

The Tyrrhenians also were the same people, so called because they constructed the *turracoli*, or the *arx*. Many Phœnician monuments remain in Sardinia, where chiefly the Tyrrhenians worked. The *nurrachi* are their work, and *nurraco* means *turraco* (the dialect changing *tu* into *nu*), tomb or temple, both at the same time, because the dead being deified, the tomb became a temple.

These aborigines, about 2200 B.C., disconcerted and almost annihilated by the tremendous cataclysm (which caused the division of Sicily from the continent, the elevation of the Septimontium, the swallowing up of the Atlantides, the formation of the great craters, now the lakes of Albano and

Nemi), emigrated with religious rites (*primavere sacre*: sacred spring-time); and this is the grand Pelasgic movement whence, perhaps, derived the name, as I have already said, from the Biblical *Phaleg* or *Paleg*, viz. division of people.

Some have believed *Vitulonia* to be antediluvian, and before the cataclysm. They maintain also that the tomb of Agilla (the Etruscan Ceri), found in 1835, was outside the influence of imported art. The variety, quantity, and richness of the objects found in it (now existing in the Etruscan museum in the Vatican) suffice to prove the advanced state of civilisation in Italy in prehistoric and ante-Homeric times. Canina and C. Cantù believed the tomb to be that of a matron, from



the *arx*) were a religious corporation of architects, and were Pelasgi, not another people.

The poets represented them as giants with one eye in the middle of their foreheads, because such was the aspect of these strong workmen; for when extracting large masses from the caverns they wore a circle of iron upon their foreheads, to which was affixed a tallow candle to give them light. Pausanias tells us that the Pelasgi Agrola and Iperbio, who built the walls of the Acropolis, were Sicilians.

The Arcadians were these same Cyclops, their name deriving from *arx* (arch) and from *aedificare* (to edificate or build). Also the builders of the *arx* before the great cataclysm (1925 B.C.)



FIG. 2.—REMAINS OF PORTION OF FRONT OF THE BOMOS.



FIG. 3.—REMAINS OF ONE SIDE OF THE BOMOS.



FIG. 4.—LARGE STONE BLOCKS OUTSIDE THE OSTERIA.



FIG. 5.—ENTRANCE TUNNEL TO THE ROMAN TOMB.

the quantity of golden ornaments found there; but it is now known to have been that of a *Lucumo*, high priest and warrior of the aborigines.

Now, at length, it seems that Signor G. Fregni, of Modena, has found the method of interpreting the Etruscan inscriptions by the ancient Latin dialect, which proves that the language and the dialects are also indigenous in Italy.

These people—who separated and emigrated in “sacred spring-time” from their country, now become convulsed and uninhabitable—have the cow as their symbol, and those who remained, the calf or *Italos*. Those who emigrated founded colonies, and we find their works at Tirinto or Tiryns, at Messene, in Argolis, in the Peloponessus, in Attica, in Bœotia, in Thessaly, in Phocis, in Epirus, in Thrace, in Asia Minor, and in Egypt, all identical with the works of their forefathers in Italy.

In Egypt, also, we find the *Osiris* or cow *To*, symbol of a wandering people—the Pelasgi—who appeared in Egypt under the name of *Shepherd-Kings* (the Hyksos) towards 2200 B.C., which was the epoch of the great emigration.

The other emigrants, the Phœnicians, inhabitants of Canaan, the promised land of God to the Hebrew people, were enemies of Moses, who prohibited their worship (the adoration of the dead) and declared their animals, the sow, the sheep, and the cow, unclean. These animals, religious symbols of the Phœnicians, remained amongst the Roman rites in the *Suovetaurilia*.

The golden calf, made and worshipped by Aaron, is the bull *Apis*—that is, the calf *Epafo*—and was the symbol of a stationary people. The Hebrews, fearing the Phœnicians, and hopeless of possessing the promised land, rebelled against their god, and, desiring to remain where they were, raised up the golden calf or *Italos* (stationary).

Whilst on the subject, I would add that the use and feast of trumpets were taken from the Tyrrhenians. The trumpet is a Tyrrhenian invention, and who has not seen it constantly sculptured on ancient Italian tombs? The Hebrews retained Italian forms and symbols. *Boaz* and *Jachin* are the *Terminus* and the *Juventas* of the Italian Cabiric skulls, which we now see.

Solomon worshipped *Moloch*, who is our *Saturn*. He worshipped *Astarte*, or rather *Astoret*, the Phœnician Venus, whose real name was Aphrodite, and, as such, an Arcadian deity and protectress of Troy (formerly Dardania, founded by the Italian Dardanus), and afterwards of Rome.

Here it seems well to show that the name *Palatine*, formerly *Bucitatum*, is not derived from *Palladio* or statue of Pallas (Minerva, Athene), but from *Phalladius*, the god *Fallo*, sculptured on the Pelasgic walls of Alatri, Cures, &c. Æneas descended from Dardanus could not worship a

divinity hostile to Troy. Pallas had been propitiated by the Achæians, and was protectress of Athens, to which she gave her name.

About 200 years after the great cataclysm in Italy, the hills formed by the eruption of the volcanoes on the banks of the Tiber had become covered with a dense forest (see “Nispi-Landi, Roma Monumentale”). The Cabiro, attracted by the aspect of the place, founded there the *Capitolim* (from which derives *Campidoglio*), or the first Cabiric temple in the form of a human skull. The periphery was enclosed by huge rocks; and the so-called *Gigantic* in the island of Gorzo was one of these temples. At the position of the eyes rose two columns, the *Terminus* and the *Juventas*, symbolising Right and Might, imitated by Solomon in his temple with *Boaz* and *Jachin*. At the position of the mouth was placed the *arx*, a square stone, upon which the Cabiro mounted to exercise the mysteries of his religion, which were at that time applied to the worship of the elements of nature, on account of the tremendous fiery volcanic disturbance. This stone gave its name to the entire circumference which, later, from its strength came to signify rock or fortress, and was the origin of the words *arch*, *art*, &c.

Evander in later times erected the other *Caput* on the Velia. Perhaps, also, from the propitiated *Pale* (Ceres) he called the *Bucitatum*, *Palatium*, afterwards *Palatino*, already sacred to the Bull, and the place where they summoned or cited the bulls, that is, the Italians. The *Forum Boarium*, which even Canina thought was a market for oxen, signified no less than *Foro Italico*, and was consecrated to Evander the Arcadian, in memory of the bulls rescued from Geryon, or the Italians recovered. The famous Bull of Egina was erected in memory of this deed.

Hercules, the Pelasgic-Argive from Argos and Mycenæ, crossed the straits of Abyla and Calpe with the Argives and Epirots upon Tyrrhenian ships, called afterwards the straits of Hercules, and famous for the columns erected there with the motto, *non plus ultra*. He assailed the Iberians, conquered and killed Geryon, and liberated the Italian prisoners in the island of Erythia, called by the classics in the arcanic language *Boves*, which Livy expresses, *boves mira specie*. Hercules crossed the Pyrenees with the liberated Italians, and traversed Celtia, where he fought and conquered; crossed the Alps, called by him Greek (now Graian), and the place where he crossed was called thenceforth the “Pass of the Greek.” He arrived in Italy towards 1322 B.C. With the help of the Tyrrhenians he expelled the Iberian-Ligurians, and as a memorial of the victory erected on the spot the temple of Hercules Moneco (now Principality of Monaco). A tribe was left to guard the pass, who, from the symbol *Taurus*, called *Taurina*, erected the

Larissa (fortress) Taurina, afterwards *Augusta Taurinorum*, now Turin.

Thus conquering, he crossed Tyrrhene, passed Vitulonia (from Vitulus), then by the mountains Cimini, sacred to him, and where a temple was erected to him on the lake of Hercules (now Vico), and arrived at the Larissa Sutrina. Continuing on to the Septimontium, he there pursued the enemy and killed Caco their chief. He was welcomed by Evander, and the *Ara Massima* erected to his honour. More than 2,000 temples were then dedicated to Hercules in Italy, and every city called one of its gates the *Gate of Hercules*.

All these facts suffice to show the indigenous civilisation of the aborigines of Italy; but, besides this, the number and variety of the Cyclopeian, Etruscan, and other archaic monuments of Magna Græcia do not admit any longer the idea of an imported art. Can the so-called Tiryinthian walls of Olevano Romano, of Artena, &c., have been imported, constructed as they are of enormous rough blocks unattached by iron?

The Romans, having subdued the Etruscans, destroyed their history, which now rises up from their tombs. The Greeks afterwards supplied them with an art suited to the grandeur of their arrogance and ostentation, when their Republican virtue had already been suffocated by the pride and oppression of the Empire; but, nevertheless, art in the original purity of its beauty had in Italy its birth and its beginning.

Italy was the cradle of prehistoric civilisation. The worship of the beautiful was innate in her, and if to-day she is surpassed by other nations, it is only because a political corruption gives to mediocrity—which always forms the majority—too many means to stifle genius, and close to her all roads conducting to the nobler manifestations of art.

NOTES, QUÉRIES, AND REPLIES.

The Architects of the English Renaissance.

From JOHN HEBB [*F.*]—

The *Edinburgh Review* for April last, in the course of an article entitled "The Understanding of Architecture," remarks:—

"Students have thus been accustomed to give the credit of architectural invention to the almost mythological John of Padua, John Thorpe, Smithson, and Haveus. Haveus and his claim to the Gate of Honour at Caius have been exploded by the antiquarians of Cambridge. For John Thorpe the late Mr. Wyatt Papworth undertook the task of removing almost all authentic title to fame and has shorn him of so many supposed attributes that, beyond the presumption that the signature John Thorpe attached to certain plans

in the Soane Museum was written by a man bearing that name, there is little glory left for his memory. John of Padua, if he ever existed, must now be looked on as little more than a mason, with a dash of the clerk of the works in his character, and Smithson's credentials are ruthlessly narrowed down to the doubtful testimony of a eulogistic tombstone."

Cavaliere Giacomo Boni, in a paper in the *Archivio Veneto*, vol. xxxii. 437, 1886, entitled "Un architetto Veneziano alla corte di Enrico VIII.," has the following with regard to John of Padua:—

"In the October issue of the *Journal of the Royal Institute of British Architects* are some interesting particulars with regard to John of Padua, famous in England in the sixteenth century, and who succeeded Holbein in the service of that monarch [*i.e.* Henry VIII.].

"The information is taken from an article by Rev. Canon J. E. Jackson, rector of Leigh Delamere, Wilts, reprinted from the *Wilts Archæological and Natural History Magazine*, vol. xxiii. p. 14.

"To John of Padua is attributed the erection of Longleat and Sion House, according to Walpole; the gate of Caius College, Cambridge, noted in *Vetusta Monumenta*, vol. v., and old Somerset House, in the Strand (*v. Builder*, 20 June 1868).

"A large proportion of what is attributed to John of Padua, according to Sir M. Digby Wyatt,* is apocryphal, and according to Canon Jackson no documents exist with regard to the works attributed to him; but on that account there is no need of documents to prove the tradition to be true, while on the other hand documents are of the first importance to prove the tradition is false, and these the English critics do not possess.

"We know that a certain John of Padua was in Henry VIII.'s service in 1554, and that he received a salary of two shillings a day for his compositions in architecture and music, but it is to be regretted that the document cited by Rymer (*Fed.* vol. xv. p. 34, ed. 1713) does not specify the service rendered in each of these arts. According to Canon Jackson (and he adduces proofs) there were two individuals to whom the designation of John of Padua might be applied: one was Giovanni Padovani of Verona, a maker of sun-dials and an organist, of whose ability in architecture nothing is known; the other, Giovanni Maria Padovani of Venice, who knew sufficient of architecture to ornament with sculpture and probably to erect a royal mausoleum in Poland, and who was beside a very celebrated musical composer, especially of ballads and other compositions of a more elevated character for the amusement of the Court. Of these two persons there does not appear to be any difficulty in making a choice."

* Paper by Sir M. D. Wyatt on "Foreign Artists in England," *R.I.B.A. Trans.* 18th May 1868, p. 234.



9, CONDUIT STREET, LONDON, W., 24th September 1898.

CHRONICLE.

The Sanitary Institute Congress.

The Seventeenth Congress of the Sanitary Institute, to be held at Birmingham from the 27th September to the 1st October, will open with a reception in the Council House by the Lord Mayor of Birmingham. The President, Sir Joseph Fayrer, will deliver his inaugural Address in the Birmingham and Midland Institute, and the Exhibition will be held at Bingley Hall. The Institute is to be officially represented by Mr. Thos. W. Cutler [F.] and Mr. Wm. Henman [F.], President of the Architecture and Engineering Section. Other members of the Institute officially taking part are Messrs. Lewis Angell [F.], C. E. Bateman [F.], H. H. Collins [F.], Ernest Day [F.], and Wm. Hale [F.]. "Dwellings of the Working Classes," "Construction and Ventilation of House Drainage," and "Drainage of Buildings possessing no open space" are among the subjects to be discussed.

A New Art Review.

Among the foreign art publications, such as the German *Der Stil* and *Der Formen Schatz*, which the Library of the Institute receives through the courtesy of the several publishers, there is one which merits more general support than it seems to obtain. This is the *Bouw- en Sierkunst*, published by Messrs. Kleinmann & Co., of Haarlem. The first number appeared in January 1898, and though it was announced as a two-monthly periodical, the third number, that for May, has only now come to hand. The French equivalent title is *Revue de l'Art Antique et Moderne*, which to the ordinary English reader gives a clearer idea of its scope. The text all through is given in the two languages. In an introductory article in the first number Mr. J. L. M. Lauweriks, of Amsterdam, enters into an æsthetic discussion on the relations between the essential artistic Principle, the Artist who acts in obedience to the impulse of the Principle, and the Work of Art that is the result. The Principle alone of the three terms of the proportion is imperishable; but

to understand this Principle, a clear realisation of the proportion is imperative.

The object, therefore, of the review seems to be the illustration of this proportion by examples of works of Ancient and Modern Art of the same class. Each number contains ten plates dealing with Ancient Art and five with Modern. The first number contains illustrations from a Psalter of the thirteenth century and of a modern commemorative album, binding, inner pages on parchment, &c., presented in 1896 to Professor Foster, of Amsterdam. The March number deals with some Egyptian sculptures and bas-reliefs and the work of L. Zijl, of Amsterdam. Judging from the photographs one is inclined to attribute a clearer vision to the Egyptian than to the Modern. The May issue, which is the best, takes for its ancient work a very beautiful Japanese painting, representing Buddha surrounded by mythological personages and symbolical attributes, and for its modern pendant some of the work of the young Dutch *Symboliste*, J. Toorop, whose marvellous picture of *The Brides* aroused such sincere admiration together with unsatisfied curiosity at the Exhibition of International Art at Knightsbridge this year. One of the most interesting plates is a study for *The Sphinx*, which was also on view at Knightsbridge. Each set of plates is accompanied by a descriptive text, but the moral to be enforced by the comparison or contrast of the old and the new is left, after Mr. Lauweriks's first article, to the student of æsthetics. The plates are beautifully printed on fine paper, and the general form of the periodical commends itself to the lover of good and artistic workmanship.

MR. HUGH STANNUS [F.] has been specially engaged to give a course of lectures at the Manchester Municipal School of Art next session on "The Principles and Practice of Architecture." The architectural curriculum at this School has been arranged in co-operation with the Manchester Society of Architects.

MR. WM. J. ANDERSON [A.] is to deliver a series of lectures at the Glasgow School of Art next Session on "The Architecture of the Renaissance in France." Mr. Batsford is just issuing a second edition of Mr. Anderson's *Architecture of the Renaissance in Italy*, and announces as in preparation by the same author a work entitled *Architecture of Greece and Rome: a Sketch of its Historic Development*.

THE death is regretfully recorded of Henry Hewitt Bridgman, *Associate* 1871, *Fellow* 1883; and of the following Associates: Charles Emanuel Evans, elected 1882; Sidney Alexander Ell, elected 1889, and George Macfie Poole, elected 1896.—Sir Henry William Peek, whose death was recently announced, had been an Honorary Fellow since 1871.



Fig. 1.—Glasgow Cathedral, from the Merchant Park Cemetery, in 1833. (From *M Lellan's "Glasgow Cathedral."*)

GLASGOW CATHEDRAL.

THE *Book of Glasgow Cathedral** is the outcome of a praiseworthy attempt to furnish an adequate history and a worthily illustrated account of the greatest fane of Scotland. In outward form it is a thick quarto volume, bound in buckram boards bearing a most eccentric design, while the text is beautifully printed, and well-illustrated by photogravures, process blocks, and line reproductions. The editor has been fortunate in gathering round him a group of contributors whose acquaintance with that part of the subject assigned to each is matter of common local report. And Mr. George Eyre Todd is not content with the task of reconciling seven points of view, for with his own pen he contributes largely, if not to the subject, at least to its introduction. A book on a single topic with eight authors might be supposed to be confusing; but the choice is necessarily between the advantages of specialism on the one hand, and the unity and consistency of the work of one man on the other; and in this case, the cathedral being a many-sided subject, the arrangement quite justifies itself. The criticism to which the work is much more open is that "The Cathedral Church," as one chapter of sixteen, occupying a tenth part of the whole, does not assume its proper proportions. A "Book of the Cathedral" which gives the Cathedral Church (that is, the whole remaining building) this inconspicuous place amid a mass of literature relating to such widely sundered subjects as "The Beginnings of Glasgow," "St. Kentigern," "The Dark Ages," "The Cathedral Chapter," "The Cathedral and the Municipality," "The (modern) Monuments and Inscriptions," &c., can scarcely be said to fulfil its purpose

* *The Book of Glasgow Cathedral: a History and Description.* Edited by George Eyre Todd. 4o. Glasgow, 1898. Price £2. 2s. net. [Messrs. Morison Brothers, 52, Renfield Street, Glasgow.]
Third Series, Vol. V. No. 20.—15 October 1898.

perfectly; while it also fails to give due weight to the mediæval building as a veritable document in itself, and sufficient attention to its interpretation. Not that the matters referred to are wholly irrelevant; the book might, however, have been a better one were it more rigidly tied down to the consideration of the actual Cathedral. A sketch of the development of Gothic architecture and a study of related buildings would have been equally relevant to the purpose of the book, and might even have been more highly instructive; but only a moment's reflection is necessary to show that this would be an error of taste and judgment, and in another direction a mistake of the kind has been made. From a literary point of view, it may be that Mr. Todd's chapters will appear to best advantage of the series. In tracing the origin of Glasgow he attempts, in the spirit of modern criticism, to establish the continuity of religious worship on the site, to heal the breach between the Celtic Pagan and the Celtic Christian civilisations; and in this connection he proposes to relate the Baal cult of Craigmaddie Moor with the Christian rites of the Molendinar. All this would be exceedingly useful had the subject been the history of Glasgow, or the Pagan or early Christian civilisation of Scotland; but as the book claims to be "a history and description of Glasgow Cathedral," which is a monument of Gothic architecture and of the Roman religious domination, the intrusion to so great an extent of prehistoric matter is unfortunate. Some twenty pages are thus given up to the legends of St. Kentigern, whose death is separated from the earliest visible stone of the Cathedral by a period much longer than that which removes us from its completion. What is known of the Keledei or Culdee churches is detailed in the chapter on "The Dark Ages," while, under the title of "The Catholic Bishopric," the history of the see under Roman organisation is written by the present representative in Glasgow of the Roman Catholic hierarchy. In the chapter on "The Cathedral and the Municipality," Mr. James Paton, writing in a vigorous and interesting way, contrives to convey much valuable information, his contribution being tantamount to the modern history of the Cathedral from the Reformation. Passing over the "Catalogue of the Bishops, Archbishops, and Ministers" and the chapter on "The Ancient Chapter of the Cathedral," we arrive tardily, more than half way through the book, at the part which treats of the material fabric.

Mr. John Honeyman, to whose hands "The Cathedral Church" has been entrusted, sets out by a statement that his aim is to steer a middle course between such fidelity to detail as is likely to satisfy an expert, and such redundancy of illustration or technicalities as might repel the general reader. Under these limitations Mr. Honeyman has been remarkably successful; no more lucid descriptive sketch of the structure could be desired. He says that while the Cathedral, "shorn of its old western adjuncts, has an exceedingly tame and diminutive effect" (referring doubtless to the view from the one entrance to the precinct), "the interior of the building is probably more grand and impressive than any other of the same size." Speaking again of the exterior on page 240, he says, "It may, indeed, be called severe, but *not* tame," and this is certainly a more precise estimate of its effect from any point of view other than that with which most visitors rest content. Picturesque to quaintness in outline, simple in grouping, rigid in articulation, and cautious in construction (for neither nave nor choir was vaulted), it embodies much of the national character with which, at a later day, its owners and occupants found themselves out of touch. It is to be regretted that no illustration conveys a faithful impression of the view from the eastern end, which is by far the grandest aspect of it, and, while far inferior, recalls some of the elements which go to make up the magnificence of the western view of the pile which commands the Wear. The claim for the interior, gaunt and austere though it be, is a bold one, and is one of those statements which would be difficult to make good. But when it is remembered that the upper church is in actual dimension much smaller than Beverley Minster (which also looks larger

than it is), or Santo Spirito in Florence, its internal effect can only be described as imposing. Like these churches, too, it seems to tell of one designer, or at least a single definite scheme;



Fig. 2.—SOUTH DOORWAY OF LOWER CHURCH (ROB ROY DOORWAY.)

for although the interior bears testimony to three distinct periods, their harmony is as a chord struck by one player. In place of the multitudinous fancies, the intricate and highly organised system to which most Gothic churches speak, there is rather here the "intimate impress" of a human soul, to borrow an expression which Pater applies to a church of

Brunelleschi. Compared with Salisbury, Beverley, or other English churches of the period, there is a northern rudeness and force which strike one most of all in the nave, most admirably rendered by the beautiful photogravure of which the accompanying block (fig. 4) is a reproduction in process. Mr. Honeyman points out that the pillars of the nave, being regulated by the Transitional bases, are more closely spaced than otherwise they would have been ;



Fig. 3.—NAVE (PLANNED BY JOCELIN), FROM ORGAN GALLERY.

and to this some of the effect of size and massiveness may be traced. The prototype of the Transitional nave planned for Glasgow he finds in Jedburgh Abbey, but the final execution of it was reserved till the end of the thirteenth century. Thus, as in the nave of Winchester, the ideas of two periods unite to produce the result. It is with the nave that the distinctively Scottish part of the work begins, the eastern arm being of Early English character. This, however, was no reason why an equally good photograph of the choir might not have been procured, to

give some idea of the beauty which belongs to it, in spite of a narrowness out of all proportion to its width of bay, and of the too "liny" character of its mouldings. The photographic process blocks which profess to show it (on pages 259 and 260) are the worst in the book, and



Fig. 4.—THE NAVE, LOOKING EAST.

one of them shows signs of being worked upon, a most hopeless thing to attempt in dealing with architectural detail. One of the most perfect parts of the Cathedral, the eastern aisle of the choir, is also altogether without adequate illustration. It is a common error to compare this simple ambulatory aisle and chapels, roofed at the level of the side aisles of the choir, with the glorious chapel of the *nine* altars at Durham or the corresponding aisle at Fountains Abbey; for, as Mr. Honeyman points out, it presents a closer analogy to the Anglo-Norman or Continental half-round ambulatory behind the high altar with its radiating chapels. It is an interesting example of a square *chevet*, if the contradiction in terms be permitted. Like the solid rood-screen of a later date, it is a mark of the partial reversion to Celtic principles of church planning, and both doubtless point to a measure of Celtic influence surviving in ritual. The rood-screen, which appears in fig. 4, and which Mr. McGregor Chalmers has shown to be of Archbishop Blacader's time (*circa* 1495), is a remarkably refined work, and we do not feel that Mr. Herbert Railton's sketch is in the least degree worthy of it. A word of praise should, however, be bestowed on the excellent measured work of Mr. G. S. Hill, consisting of a plan of the crypt and details of its south porch, the design of which (fig. 2) bears a close resemblance to that of the side doors in the west front of Lincoln Cathedral. The other geometric drawings embrace a plan of the church and details of an internal bay of the choir; but the inclusion of elevations of the whole Cathedral and sections to a good scale would have added considerably to the value of the book in the eyes of an architect, and need not have detracted from such popular interest as belongs to it.

Mr. Honeyman, in his opening remarks, says further that he will confine attention "almost exclusively to matters of fact . . . avoiding as far as possible doubtful disputations and immaterial speculations." But none the less he takes a clear side in a controversy which has puzzled and divided the architects in Glasgow who care for these things. He goes so far as to say that "there can be no doubt that the whole vaulting of the lower church formed part of the architect's original designs, but whether actually executed before or after the completion of the choir it is impossible now to determine." As both sides in the controversy believe it is possible to determine the point, Mr. Honeyman is alone in this view of the case; while the matter on which he has no doubt is just the crux of the question. Differing from Mr. Honeyman, the present writer inclines to believe in the reasonableness of the theory of Mr. T. L. Watson as now stated, and does not think that the causes for the speedy roofing of the crypt suggested by Mr. Honeyman on page 251 are sufficient to justify the view that the central aisle was vaulted over and used while the rest of the church was in progress; in the face of the facts that this middle compartment illustrates the progress of Early English vault construction, that it employs ribs of more advanced section than those in the aisles of crypt or choir, and that the springers towards the central aisle have been altered. A theory, too, which fits in with an excellent constructional reason—an open well-hole for raising material—is to be preferred to one which would subject the vault itself and "the services of the church" to a measure of hazard. Might not the side-aisles, first the lower, then the upper, have been used for these daily services without necessitating the vaulting of the central space until the church was covered in? It is not quite correct, by the way, to say that "the plan is perfectly symmetrical"; the alternately large and small pillars of the aisle render irregular the vaulting squares adjoining, whether of one or three bays each. One feels that in a work of this importance, it might have been worth while to expound this exciting and engrossing question of the vaulting at greater length.

Like other recent writers on the subject, Mr. Honeyman contends that the crypt should be known as the "lower church," and this title is used throughout the book; but a good deal can be said for the more popular term. A crypt of about 1130 existed previously, and the lower

building of Jocelin continued to serve the purpose of the crypt—"the confessio," the sepulture of the saint (fig. 6). Although the subsequent lengthening of the church on a sloping site makes



Fig. 5.—DOOR OF CHAPTER-HOUSE, FROM LOWER CHURCH.

it lose one attribute of a crypt, it retains the others. If the mid compartment was designed by its architect as a church, it must be one of the most ill adapted in the world—"a very



Fig. 6.—TOMB OF ST. KENTIGERN, AS IT NOW APPEARS IN THE CATHEDRAL LOWER CHURCH.

singular place of worship," as Sir Walter Scott has it. Whatever name it may bear in ancient documents, we ought to decline to give up "the finest crypt in Europe" for an illogical and wellnigh impossible church.

Although most of them have been printed before in the Transactions of certain societies, the contributions of Archbishop Eyre must not be altogether overlooked. They are among the more valuable papers, continuing, as they do, the archæological and architectural part of the work; and they treat of the Western Towers (Fig. 1), now unhappily removed, the "Hall of the Vicars-Choral," and the Ancient Altars. The Archbishop also contributes an account of "The Episcopal Seals," which is well illustrated. The Rev. J. S. Gordon writes on "The Prebends and Prebendal Manses," Mr. A. H. Millar on the long-vanished "Bishop's Castle," and the present minister, the Rev. Dr. Pearson McAdam Muir, on the "Monuments and Inscriptions." There is, besides, an article by Mr. Stephen Adam on "The Stained Glass Windows," in which the author evinces much catholicity of taste and temperance of criticism. Among what has been condemned root and branch by less practical or competent judges he directs attention to much that is good and worthy of study. At the same time he is ready to admit that the presence of the deeply-coloured stained glass windows in the crypt is "a serious mistake, from every point of view," and thus adds another voice to those which have clamoured for their removal.

The Book of Glasgow Cathedral, while it may not in every respect fulfil an architect's ideal, deserves the attention of students of architecture, as well as those interested in local history. As far as this building is concerned, nothing better has yet been done, nor perhaps need be. Its one defect is that it has attempted at one and the same time to be a popular book and an archæologic repository. It is safe to say that no book of the Cathedral will ever be a popular one, unless it should condescend to take the form of a guide for visitors. There may yet be room for a book of this kind, written by a genuine student of the building, likely to be more honoured—at least, in the reading of it—than the massive quarto before us. And, on the other hand, there is the possibility of a more adequately illustrated record of the edifice, after the fashion of such a work as Mr. C. C. Hodges' *Hexham Abbey*. Not that there is any crying necessity for it, as in the case of buildings rapidly falling into decay. Careful surveys, photographic and geometric, of Melrose and Elgin would serve a more useful purpose. The Cathedral itself, while it remains intact, is, after all, its best record, its best history. That it may be read in its full historic significance rests with the preparedness of the mind that approaches it, rather than with any help it may get from "a description" ready to hand. It demands the study of buildings related in time and purpose, of the development of the craft and tradition of mediæval architecture, of the structural processes, the ecclesiastic objects of a bygone generation. So prepared, one does not seek to reproduce, to reoccupy, correctly and literally, recognising that the life that moulded it, the life that made use of it, is for ever departed, and has abandoned the shell to us. We have already made, and may yet make, too much of this empty husk. The civilisation which shaped this mass-house and reliquary shrine is far removed from ours, and the sooner that Scottish Ecclesiological and Church Societies realise this, the better for our church architecture in particular and for our modern architecture generally. There is no sign of "archaicism," of looking backward, about Glasgow Cathedral itself; there was nothing reactionary about the view of its promoters. This seems the first lesson of Glasgow and the other churches of the middle world; for living architecture "serves the present age" and reaches after the unattainable. Glasgow Cathedral is now "a national monument," but it is, in a sense more broad and deep, one of the many monuments of thirteenth-century European civilisation which shame the incompleteness of modern culture, not yet able to surpass it on the plane of beautiful building suited to present purposes.

WILLIAM J. ANDERSON.



9, CONDUIT STREET, LONDON, W., 15th October 1898.

CHRONICLE.

University of California.

The Antwerp Jury have made their preliminary selection in the International Competition for the proposed University of California. Mr. Norman Shaw, who represented Great Britain on the Jury, is reported in a daily paper to have stated that of the eleven selected plans not one was by a British architect, but that they all belonged to the French school.

Architectural Copyright.

Monsieur Georges Harmand forwards, as a matter of interest to members, the following text of a resolution passed at the Twentieth Literary and Artistic Copyright Congress, held last month at Turin, by the *Association Internationale Littéraire et Artistique*, after a report read by him on the question of Architectural Copyright: *

Vœu sur la propriété artistique des œuvres d'Architecture.
LE CONGRÈS,

Considérant que s'inspirant du vœu adopté par le premier Congrès International de la propriété artistique tenu à Paris en 1878, l'Association littéraire et artistique internationale a, dans divers Congrès tenus à Madrid 1887, Neuchâtel 1891, Milan 1892, Barcelone 1893, Auvers 1894, Berne 1896, et Monaco 1897, émis le vœu que les œuvres d'Architecture soient protégées comme les œuvres de peinture, de sculpture et des autres arts du dessin;

Considérant que ce même vœu a été adopté par les trois derniers Congrès Internationaux des Architectes tenus à Paris en 1878 et en 1889, et à Bruxelles en 1897;

Considérant que l'acte de Paris de 1896 n'a pu, en raison de la législation de deux des pays (l'Allemagne et la Grande-Bretagne) adhérents à la Convention de Berne, accorder aux Architectes une protection complète et uniforme dans toute l'étendue de l'Union;

Considérant que les dessins d'Architecture, comprenant les plans, coupes, élévations, détails de façades extérieures et intérieures, détails décoratifs et autres en général, constituent l'original de l'œuvre de l'Architecte;

Renouvelle le vœu que les œuvres d'Architecture jouis-

* For Monsieur Harmand's views on the subject see his Paper "Artistic Copyright—with special reference to Architects" [*ante*, p. 285], read before the Institute last April.

sent de tous les droits de propriété artistique reconnus aux œuvres de peinture, de sculpture et des autres arts en vertu des législations et des conventions internationales;

Et souhaite que cette protection soit complètement réalisée dans la prochaine révision de la Convention de Berne.

Il est convenu que le Congrès entend que la protection de la loi soit accordée aux œuvres d'Architecture quel que soit l'auteur, et que le mot "Architecture" doit se prendre dans sa plus large acception.

REVIEWS. LXXVIII.

(207)

NORTHERN ART WORKERS' GUILD.

Catalogue of Works exhibited by Members of the Northern Art Workers' Guild, City Art Gallery, Manchester, with chapters on the Crafts. Sm. 4o. Manchester 1898.
[Chorlton & Knowles, Printers, Manchester.]

This Guild, an association of the artists and craftsmen working in the Manchester district, was inaugurated in 1896 by Mr. Walter Crane, its aim being to bring all the arts and crafts into their real and close relationship and to maintain the gospel of their essential unity. The exhibition, of which the work under consideration is the catalogue, is the first held by the Guild, and lasts from September 26 to October 22.

The twelve chapters on the various crafts raise the catalogue from the class of *biblia abiblia* into a work of permanent value in artistic literature. Nearly all the writers are artists and craftsmen of high standing, and are represented in the exhibition by specimens of their work.

Mr. Walter Crane holds the place of honour with some "Notes on Needlework in the Present Century," and sounds an optimistic note as to the condition of decorative needlework at the present time. Mr. Lewis F. Day, in "Cotton Printing," pleads for a sensible adaptation of new scientific processes to modern artistic needs. Mr. Henry Cadness describes "The Craft of the Weaver." Mr. H. C. D. Chorlton deplors the lack of taste in modern cheap and so called artistic printing, and holds out hope for better things. A strong protest against "uncut edges" is welcome. Mr. Richard Glazier [*A.*], the Head Master of the Manchester Municipal School of Art, contributes a thoughtful paper on "The Influence of Material upon Design." Other papers are on "Modern Pottery," in which the Master of the Guild, Mr. Wm. Burton, condemns the machine-made imitation of shapes that can only be legitimately obtained by "throwing"; "Architecture," "Enamels"; "Concerning Painters' Processes"; "The Relation between the Pictorial and Decorative Arts"; "From Nature to Design," by Mr. Edgar Wood; and a most humorous introduction to "The Practice of Repoussé Work" by Mr. James Smithies.

The book has been designed, arranged, and printed by Mr. Chorlton, who thereby illustrates some of the principles laid down in his article.

(208)

LINCOLN CATHEDRAL.

The Cathedral Church of Lincoln. A History and Description of its Fabric and a List of the Bishops. By A. F. Kendrick, B.A. 8o. Lond. 1898. Price 1s. 6d. [Messrs. George Bell & Sons, York Street, Covent Garden.]

“This series of monographs,” says the preface, “has been planned to supply visitors to the great

and Venables have told us all they knew, there remains very little more to be said; and a work like this must of necessity be a more or less conscious reflection of their minds, or in a great measure be made up of acknowledged extracts from their works, as is here the case.

The book is conveniently divided into three sections: viz. “the History,” “the Exterior,” and “the Interior.” The first of these parts is perhaps the most interesting reading. A melancholy picture is drawn of the Cathedral during the Reformation and under the Commonwealth—melancholy because it gives us a glimpse of what



S. B. Bolas & Co., photo.

TRIFORIUM ON THE NORTH SIDE OF THE ANGEL CHOIR, LINCOLN CATHEDRAL.

English cathedrals with accurate and well illustrated guide-books at popular prices.” A modest enough aim, and one that may be said to have been successfully met by this, the latest of the series; for when placed in the hands of the average tourist it should enable him to see something more than the dry bones of architecture, and to look upon Lincoln Cathedral as an expression of a part of our national life that is dead and gone.

Criticism, however, on a work of this kind, is difficult, because there is really very little to criticise; but the author may be congratulated on the way in which he has marshalled his extracts and paraphrases from other works, and formed them into a readable and useful text-book. When such men as Scott, Freeman, Parker, Viollet-le-Duc,

the interior might have been to-day had it not been for misguided zeal and civil strife. During the Commonwealth we are told that the fabric narrowly escaped destruction, “certain godly ones gaping after its stone, timber, and lead”; and it was only saved from threatened destruction by the then mayor of the city, “who represented to Cromwell that if the Minster were down, Lincoln would be one of the worst towns in the county,” a remark that even now has its sting. The interesting discovery made beneath the floor of the Angel Choir, in 1886, of the foundations of St. Hugh’s apsidal east end, is noticed, and an outline of the foundations is shown on the general plan; but it is difficult to believe that the apse ever existed in this form, though it

is given on no less an authority than that of the late Precentor Venables. To the architectural eye it looks impossible to have ever made a satisfactory feature of it either outside or in, and as we are told that "only the rude concrete foundations were found," it is easy to believe that the true form of the upper walls is yet an unsolved mystery. The Dean and Chapter have here set an example that might be usefully followed: they have caused the outline of this apse to be chiselled in the stone pavement above—an act which cannot fail to add to the interest of the thoughtful visitor.

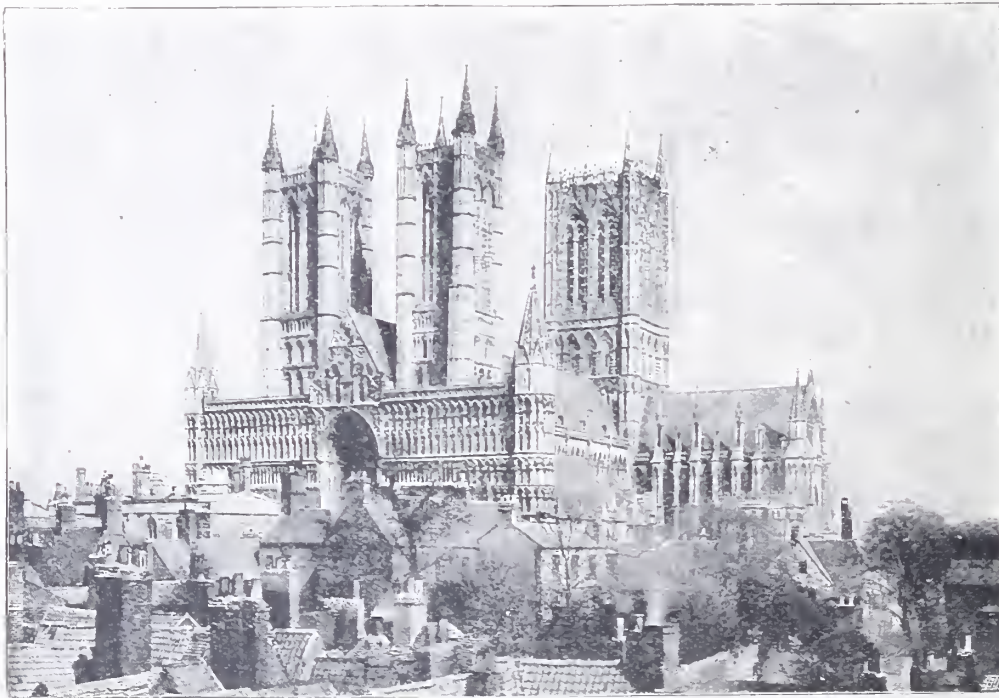
Coming to the exterior we are told that the best view "from a closer prospect is from the north-east corner." This is perfectly true, and hence we are disappointed not to find an illustration from this point, especially as one has never yet been published, owing to the fact that the ground on this side has only comparatively lately been cleared of the squalid buildings that stood there. But apparently it is easier to reproduce stock photographs than to go to the trouble of having one specially made.

The book concludes with a chronological list of

the bishops and a plan of the building; the latter carelessly and inaccurately drawn, evidently by an amateur draughtsman. No vaulting ribs are shown—a fatal omission in a plan of a Gothic building. See, for instance, how meaningless the central pillar of the Chapter House looks without its burden of radiating ribs, and what interest would have been added had the eccentric vaulting of St. Hugh's choir been shown. Again, the piers of the same choir are drawn so confusedly with the choir-screens that it is impossible even to guess at the number of bays; and the south end of the Galilee porch is shown closed by a thick wall, while, by referring to the illustration on page 58, it may be seen to be quite open down to the ground. There is no excuse for these and other mistakes, for several accurate plans have been already published.

The illustrations are numerous but mediocre, the majority being photographic reproductions, which are good of their kind; that of the Angel Choir, reproduced on the preceding page, is perhaps the best, the beautiful detail of the triforium being very clearly shown.

W. G. WATKINS.



LINCOLN CATHEDRAL, FROM THE SOUTH-WEST.



GETTY CENTER LIBRARY



3 3125 00109 7845

